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Editorial of this issue is COVID-19 and Bangladesh:Challenges and How to Address. The end of 2019, coronavirus disease was first identified in china and in March 2020, WHO declared COVID-19 as a pandemic. The virus is contaminated from human to human very rapidly & patients can develop the disease in different forms. Practice of good personal hygiene, washing hand, wearing mask,avoiding mass gathering and vaccination program can prevent Bangladeshi people from COVID-19. Apart from that this issue also contains seven original articles, one review article and one case reports.

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Dr. G.M. Raihanul Islam
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Editorial

The Effects of the Covid-19 Vaccine on Pregnancy

COVID-19 infection during pregnancy causes the respiratory tract to expand, making the expectant mother more susceptible to respiratory illnesses.[1] During the first trimester, when embryonic and placental implantation take place, as well as the third trimester, when the body adjusts to the impending delivery, a pro-inflammatory stage is more noticeable.[2] Acute COVID-19 is connected to the creation of cytokine outbursts in particular. Pregnant women were more prone to more severe COVID-19 infection due to the pro-inflammatory stage of pregnancy throughout the first and third trimesters. Despite the fact that the majority of pregnant mothers had mild to moderate symptoms from COVID-19 infection, the sickness is more severe in this group than in non-pregnant women, with a higher risk of hospitalization. The majority of COVID-19-infected pregnant women in hospitals were asymptomatic, allowing the virus to spread unnoticed.[3] This demonstrates the importance of effective measure that halt the viral transmission from one person to another.

One of the most effective public health measures to counter the spread of communicable diseases is through vaccination. The main goal of nationwide vaccination programs is to accomplish the desired herd immunity, but only if high vaccination rate is achieved.[4] mRNA vaccine, Moderna and Pfizer–BioNTech, are proven to be effective in preventing and reducing the severity of COVID-19 infections. However, the evidence on mRNA vaccines' safety profile and effectiveness during pregnancy are gradually emerging.[5]

The rate of COVID-19 infection, maternal antibodies responsiveness, placenta antibody transmission, and adverse events after COVID-19 vaccination in pregnancy. The data involved the outcomes of epidemiological studies that evaluated two different mRNA vaccines; Pfizer–BioNTech vaccine and Moderna vaccine. The outcomes from this review should help to enhance the understanding on COVID-19 vaccination during pregnancy for assisting healthcare professionals on counselling expectant mothers.

After 14 days of receiving the Pfizer–BioNTech vaccine, 0.18% (4/2136) of expectant mothers had COVID-19 infection, while 0.51% (11/2136) acquired COVID-19 infection within 2 weeks of vaccination. Around 0.5% (9/1822) of pregnant women who received Moderna vaccine developed COVID-19 infection within 14 days of vaccination and 0.5% (9/1822) after 2 weeks of receiving this vaccine.[6] More than halved of these pregnant women who were diagnosed with COVID-19 within 14 days of vaccination were traced to acquire the virus before receiving their first dose of vaccine. mRNA vaccines substantially decreased the probability of acquiring COVID-19 infections in expectant mothers.

Antibodies responses are rapidly developed following vaccination, but such desired effect is not seen with natural infection as the latter tends to produce more gradual responses. This concept is applied for acquiring improved reactions with booster vaccine administration. In pregnancy, following vaccination, the rise in the concentration of IgG and IgM antibodies against COVID-19 were observed considerably.[7] In majority, IgG seroconversion was found to predominate in these pregnant women, but IgM seroconversion was seen, albeit in a much smaller proportion.

The IgG against spike (both S1 and S2) and RBD proteins are produced in response to COVID-19 vaccine, whereas IgG towards spike (both S1 and S2) RBD and neutralising proteins are generated after infected with COVID-19.[8] In 72% of expectant mothers, COVID-19 vaccination has led to IgG and IgM antibodies production, in which 14% generated IgG only antibody with remaining 14% had immeasurable IgG or IgM antibody levels. After receiving the first dose of vaccine, the spike-IgG and RBD-IgG titers grew fast, but these levels are more significant with the second dose compared to the initial one.

S1-IgG and RBD-IgG levels are greater in expectant mothers after vaccinated.[9] On the other hand, infected pregnant women had greater titres of S2-IgG and neutralising-IgG antibodies. The spike-IgG level was 22.814.5AU in pregnant women who had flu-like symptoms compared to the spike-IgG level of 0.040.05 AU among expected mothers who were asymptomatic after COVID-19 vaccination. The median RBD-IgG levels were 27601 AU and 1321 AU respectively with neutralising-IgG antibody titres of 900 AU and 150 AU in the vaccinated and infected pregnant women correspondingly. On the other hand, among non-pregnant females, the median RBD-IgG titers were 38000 among those who were vaccinated but only 800 AU in infected individuals, with corresponding neutralising-IgG levels of 900 AU and 200 AU, respectively.

Following COVID-19 vaccination, the antibodies produced are transferred to the fetus. Maternal and fetal antibodies in blood were demonstrated to be almost comparable.[10] The blood plasma concentration of IgG antibodies was discovered at 1.31 U/mL among expectant mothers receiving the second dose of Pfizer–BioNTech vaccine and one dose of Moderna vaccine. The IgG antibodies were found in 98.5% of newborns born to mothers that had completed two doses of Pfizer–BioNTech vaccination. On contrary, 43.6% of newborns of mothers that had one dose of Pfizer–BioNTech vaccine demonstrated evidence of COVID-19 specific IgG antibodies in their blood.[11]

Both RBD-IgG and neutralising-IgG antibodies were found in the fetal blood samples. The maternal and fetal (cord) blood plasma levels of RBD-IgG antibody were measured around 15000 AU and 20000 AU with neutralising-IgG antibody titre of 1000 AU and 300 AU correspondingly after COVID-19 vaccination.[12]

Aside from the number of vaccine dosages, the time between

the vaccination and birth was found to be associated to the levels of IgG antibodies titres and its transfer ratio.[13] A higher IgG transfer ratio is associated with longer duration of completed vaccination to childbirth. Transfer ratio, calculated by dividing the IgG antibody concentration in fetal cord blood with the IgG antibody concentration in maternal blood, of spike-IgG antibody was reported to be almost halved (transfer ratio of 0.45).

The safety of COVID-19 vaccination is the primary concern for both the expectant mothers and clinicians. According to a poll conducted in 16 countries, pregnant mothers were less inclined to accept vaccinations for themselves.[14] Despite the established report of COVID-19 vaccination delivering up to 90% effectiveness, approximately three-quarter of non-pregnant women agreed for vaccination, compared to around 50% of pregnant women. One significant predictor of vaccination uptake was the trust in the vaccination efficacy and safety. Surprisingly, vaccine safety was not considered as a significant contributing factor in both pregnant and non-pregnant women.

It should be noted that unpleasant responses and adverse events affect both expectant mothers and non-pregnant women.[15] In both the Moderna and Pfizer–BioNTech vaccinations, injection-site discomfort is the most prevalent complication in pregnant mothers. After the Pfizer–BioNTech vaccine, up to 84% and 89% of expectant mothers who received one and two doses respectively, have reported injection-site discomfort.[16] For the Moderna vaccination, 93% and 96% had injection-site discomfort after the first and subsequent doses, correspondingly. In another study, 88% of pregnant women complained of injection-site discomfort after the first dosage and 57% after the second dose. In contrast, following the first and second vaccination doses, 75% of non-pregnant females reported similar adverse event. Sore shoulders or discomfort were reported in 97% of expectant mothers and 90% of non-pregnant women after receiving the Moderna and Pfizer–BioNTech vaccinations.

The incidence of systemic adverse reactions increased following the second dose of vaccination in Moderna and Pfizer–BioNTech vaccinations.[17] Tiredness, migraine, shivers, malaise, rash, and vomiting were among the most commonly reported systemic side effects. In most cases, these were temporary and rare. It lasted beyond three days. Compared to the first dosage, the frequency for these systemic adverse reactions to occur was significantly higher following the second dosage. In terms of numbers, the Moderna vaccination group had more people who had these systemic side effects than the Pfizer-BioNTech category.

Vaccination does not affect the gestation or delivery when compared to unvaccinated expectant mothers. There were no demonstrable significant differences on the frequency of gestational hypertension or thrombosis between vaccinated and unvaccinated pregnant women.[18] Looking from the delivery perspective, there were no significant negative impact on the incidence of premature birth, endometrial break, or unexpected ICU hospitalization among vaccinated expectant mothers.[19]

As randomised controlled trials on COVID-19 vaccination in pregnancy is lacking, the resultant derived outcomes are purely observational from epidemiological studies evaluating mRNA vaccines. mRNA vaccines are proven to be beneficial in deterring COVID-19 in pregnant women and demonstrated the ability to induce antibody reactions in this vulnarable population and their unborn fetus. It is highly recommended for pregnant women to receive two doses of vaccination and achieve completion earlier aiming for higher levels of antibody titres and transfer ratio. The mRNA vaccine is primarily safe for expectant mothers and common adverse reactions are similar with non-pregnant individuals including fever and injection-site discomfort. There is no evidence that COVID-19 vaccination affects gestation, birth, or birth complications.

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Original Article

"1st Dorsal Metacarpal Artery Flap: A Reliable Option to Reconstruct the Soft Tissue Defect of the Thumb."

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ABSTRACT

Background: The 1st Dorsal Metacarpal Artery (FDMA) Flap or Kite flap is a proximally based island flap based on the first dorsal metacarpal artery and veins. A branch of radial sensory nerve is incorporated in the flap to make it a sensate flap. The aim of this study was to evaluate the 30 FDMA flaps done over a period of 9 month for distal thumb soft tissue defects.

Objective: To the advantages of FDMA in soft tissue reconstruction of thumb, for which it has been termed as a reliable flap

Methods: This is an observational study carried out on 30 patients with soft tissue loss on the Thumb who presented between the time of January 2019 to September 2019 in the Department of Plastic surgery, Dhaka Medical College Hospital. A thorough history was taken from the patient and their attendants. The wounds were examined preoperatively to assess the nature, examine the underlying structure and evaluate the appropriateness of the plan. All patients had laboratory tests required for surgery under anesthesia done.

Results: Maximum patients (15) are in the age group of 21-30 years. Mean age is 26.17. Twenty eight cases are male and male female ratio is 14:1. Regarding the cause of injury is Burn in 16 cases and trauma in 14 Patients. The mean length of flap is 28.20 mm and width is 15.57 mm. The results in all the cases are excellent except for four cases; one of which has marginal necrosis, and the other three has epidermal necrosis which healed without any surgical intervention. The FDMA flap is a reliable flap for thumb soft tissue coverage. 1st Web space span is excellent in 29 cases. Thumb movement in IP is excellent in 70% cases and in MP 96.67% is excellent. Donor sites are cover by full thickness skin graft in 27 cases, split thickness skin graft in two cases and fillet flap from middle finger in one case without any complication.

Conclusion: The FDMA flap is a Reliable flap to reconstruct the Soft Tissue Defect of the Thumb. The flap is sensate, durable, provides adequate soft tissue coverage.

Key words: 1st Dorsal Metacarpal Artery (FDMA), Flap, soft tissue defects.

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Introduction

The thumb contributes 60% of all human hand functions. Therefore, thumb injuries have much more significant impact on the normal daily life activities than do other digits injuries.[1] Thumb injury is a common incident now a days due to increased frequency of machinery injury, burns and road traffic accident. However there are few other causes like household accident, excision of neoplasm or infection. Reconstruction of complex soft tissue defects of the thumb,

with exposure of the underlying structures, is challenging to hand surgeons. To preserve the function of the thumb, always it requires coverage with pliable, durable and sensate skin. Limited local soft tissue availability makes the requirement difficult.[2] The coverage options are variable ranging from secondary healing to free flap depending upon the amount and type of tissue lost. Conventionally, these defects can be reconstructed by skin graft, V-Y advancement flap,[3] Moberg advancement flap,[1,4] cross-finger flap,[2,5] Littler's neurovascular island flap,[1,6] first dorsal metacarpal artery (FDMA) flap,[1,2,3,7] reversed radial forearm flap,[8,9] distant flaps and various free flaps.[1,4] Skin grafting is not suitable when bone or tendon is exposed. V-Y advancement flap is applicable for small defect like finger tip injury. Moberg flap is suitable for limited area of soft tissue defect in expense of extension of IP joint. Cross finger flap requires a staged approach and has limitations including a considerable period of immobilization, risk of joint stiffness and a limited arc of flap transposition.[10] With the Neurovascular island flap, two major digital arteries are sacrificed and extensive digital and palmar dissection is needed.[10] Microvascular transfer of a free flap like partial toe transfer, ADP free flap, free groin flap can be used but such a technique requires microsurgical experience and prolonged operative time.[4]

Among these flaps, FDMA flap is a versatile flap for covering thumb defects on dorsal or volar aspects. The flap can be made sensate by including a branch of the superficial radial nerve. Hence it is a single stage surgery with less donor site morbidity.

FDMA flap was first reported by Hilgenfeldt in 1961 and Hollevich in 1963 as a peninsular flap with preservation of the skin over the pedicle.[11] An island flap was demonstrated for the first time by Foucher and Braun in 1979, who described that a sensate skin island flap could be harvested from the dorsum of the index finger, based on the 1st dorsal metacarpal artery and incorporated a sensory branch of the superficial radial nerve.[6] The FDMA flap comes into play in thumb reconstruction as there is deficiency of locally available tissue and tendon or bone is exposed. The main goal of thumb reconstruction is preservation of length and sensibility.

1st dorsal metacarpal artery (FDMA) flap, a sensate skin island harvested from the dorsum of the index finger, based on the 1st dorsal metacarpal artery and incorporated a sensory branch of the superficial radial nerve. The FDMA flap can extend proximally to the MP joint and distally to the PIP joint. If the flap is extended beyond the PIP joint, then its distal part is doubtful.[7] An islanded sensory FDMA flap has a pedicle length of around 7 cm, thus it allows for wide arc of rotation and resurfacing soft tissue defects of the thumb. Compared to hetero digital island flap for resurfacing thumb defects the FDMA flap has negligible donor site morbidity, complete cortical reorientation and better overall hand function. [12]

The FDMA flap has been successfully used for reconstruction of thumb soft tissue defects as it is a durable flap with a constant vascular anatomy. It can cover both the dorsal and the volar aspect with restoring the sensation and maintaining the length. Besides, it has very few limitations like it demands high quality dissection and donor site skin grafting. The aim of this study was to implement the advantages of FDMA in soft tissue reconstruction of thumb, for which it has been termed as a reliable flap. Objectives are followings-To evaluate the clinical outcome of 1st dorsal metacarpal artery (FDMA) flap as a reliable option for reconstruct soft tissue defect of thumb,To assess the maximum dimension of flap that can be raised, to observe the viability of the flap,To find out any complications,To assess the thumb function.

Method

This is an observational study carried out on 30 patients with soft tissue loss on the thumb who presented between the time of January 2019 to September 2019 in the Department of Plastic surgery, Dhaka Medical College Hospital. A thorough history was taken from the patient and their attendants. The wounds were examined preoperatively to assess the nature, examine the underlying structure and evaluate the appropriateness of the plan. All patients had laboratory tests required for surgery under anesthesia done. Sample size was 30 (Thirty) cases. Sampling method was Purposive sampling. Sample population- 30 patients with soft tissue defects on the thumb in the Department of Plastic Surgery, Dhaka Medical College Hospital who fulfilled the Inclusion criteria was the study population. Inclusion criteria was patients with soft tissue defect in thumb following trauma, burn and post burn deformity, patients age between 1 - 60 yrs. Exclusion criteria was patients with potential injuries to the pedicle of donor site due to previous trauma or surgery, patients with significant major co-morbid medical conditions patients with poly trauma and other life threatening injury (like head injury) that causes delayed resuscitation.

Dimension of wound

Measured by measurement of length and width of the wound by scale in mm.

Length means maximum dimension at long axis of wound.

Width means maximum dimension at short axis of wound.

Flap Survivability:

- No loss of flap

- Epidermal flap loss- Only epidermis of the flap loss

- Marginal flap loss- Upto 1 mm of marginal flap loss.

- Partial flap loss- Upto one third of the flap loss.

- Subtotal flap loss: Upto two third flap loss.

- Complete flap loss – whole portion of the flap loss.

- Wound Dehiscence: Is the partial or total disruption of any or all layers of the operative wound.

Flap Outcome:

- Excellent

- No flap loss

- No Donor site morbidity.

- Functional outcome good

Good

- Marginal flap loss/Epidermal necrosis managed by secondary healing.

- <10% graft loss managed by secondary healing.

- Functional outcome satisfactory.

Poor

- Complete/ Partial flap loss alternative procedure needed

- 10%-100% graft loss managed by STSG.

- Functional outcome poor

Surgical Technique

Patient was under regional or general anesthesia. Under tourniquet control with good illumination and magnification wound excision was done. Then the wound dimension was measured and flap was marked on the dorsum of index finger. Flap was marked few millimeters larger than that of the wound. The distal limits were the proximal interphalangeal (PIP) joints and the proximal limits were usually the metacarpophalangeal Joint but in 5 cases it cross metacarpophalangeal Joint. As the FDMA is a constant artery, Doppler was not used. The tip of the first web space can be palpated between the bases of the first and the second metacarpal bone, which denotes the proximal most point of pedicle dissection and hence the pivot point.

Figure-1: Wound and flap marking

Under tourniquet, the flap was raised in the loose areolar plane above the extensor tendon paratenon; Great care was taken to preserve the paratenon to ensure later skin graft take and the free gliding of the tendon.The flap dissection was started from distal to proximal. The fascia pedicle was taken through a zigzag or lazy s-shaped skin incision and subdermal dissection along the radial border of the MP joint

toward the pivot point; thus, the maximal potential length of the flap pedicle can be achieved, allowing it to reach the thumb tip without tension. The pedicle includes 1st dorsal metacarpal artery, epimysium of the first dorsal interosseous muscle, the dorsal veins, and the sensory branch of the radial nerve. Although the ulnar branch of the FDMA is tiny and courses deeply within the musculo-osseous groove, no attempt was made to visualize the artery. Instead, safe dissection was achieved by including the epimysium of the first dorsal interosseous muscle.Then an open tunnel was made from the proximal part of the pedicle up to the wound margin. It was ensured that the tunnel was adequate enough to transfer the pedicle and tension less closer of the tunnel.

Figure –2: Flap raised

The tourniquet was released and the flap vascularity assessed. The flap was then passed through the open tunnel to the defect area and sutured without any tension. Then the tunnel was closed without any tension. The donor sites were covered by full thickness skin grafts in maximum case, in two cases by split thickness skin graft and in one case by fillet flap from the middle finger.

Figure –3: Flap coverage done

The hand and the fingers were immobilized in neutral position with dorsal splint for 14 days to ensure proper graft take. Post-operative care:1st dressing was done on 5th POD. Stitches removed on 14th to 21st POD.

Follow-up:Patient was followed up to the 1st POD, 5th POD, 14th POD and 21st POD and 30th POD. Flap was evaluated at that time according to the preset criteria.

Figure–4: 21st POD after stitch off   **Figure–5: 30th POD**

Result

Table-I: Age group distribution of the study cases (n-30)

AGE Group	Frequency (n)	Percentage(%)
01–10 years	03	10.00%
11–20 years	05	16.67%
21–30 years	15	50.00%
31–40 years	04	13.34%
41–50 years	03	10.00%
Mean age (±SD): 26.17 (±1.027) Range: (08 - 48)	30	100%

Table 1 shows age group distribution of the study population. The maximum patient 15 belongs to age group 21 - 30 years which was about 50% of the study population.

Sex distribution of the study cases (n-30)
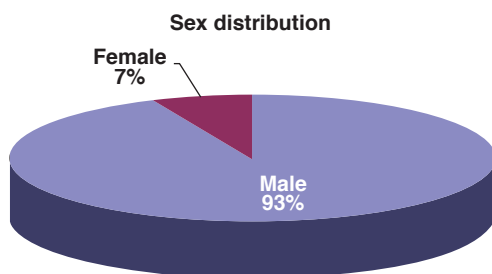
Sex distribution

Pie chart shows sex distribution of the study population. Out of 30 patients 28 (93.33%) were male and rest 02 (6.67%) were female. Male female ratio: 14:1.

Table- II: Occupational status of the study cases (n-30)

Occupational status	Frequency (n)	Percentage(%)
Day labor	10	33.34%
Housewife	02	6.67%
Service Holder	08	26.67%
Student	09	30.00%
Businessman	01	3.33%
Total	30	100 %

Table II shows occupational distribution of the study population. Maximum suffered group were the day labor 10 (33.34%) and student 09 (30.00%).

Distribution of sample according to cause of injury (n-30)

Cause of injury
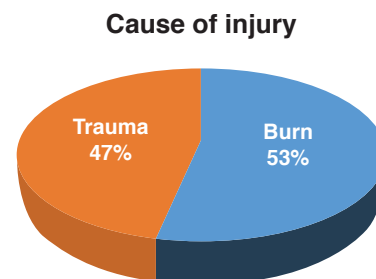
Pie Chart III shows Causes of the injury was burn in Maximum 16 (53.33%) cases.

Distribution of patients according to involved hand (n-30)
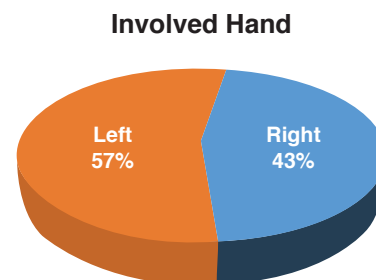
Involved Hand

Pie Chart shows among 30 cases, 13 (43.33%) cases were done over wound of right hand and 17 (56.67%) cases were done over wound of left hand.

Table-IV: Distribution of patients according to involved area of thumb (n-30)

Location of wound	Frequency (n)	Percentage(%)
Dorsum	05	16.67%
Volar	13	43.33%
Medial	05	16.67%
Lateral	01	3.33%
Complex	06	20.00%
Total	30	100%

Table IV shows among 30 cases, 13 (43.33%) cases sustained wound over volar aspect of thumb and 06 (20.00%) cases had complex defect in thumb.

Table-V: Exposed vital structure among study cases (n-30)

Type of exposed structures	Frequency (n)	Percentage(%)
Bone	07	23.33%
Tendon	06	20.00%
Both bone and tendon	04	13.33%
Both bone and implant	01	3.33%
No structure exposed	12	40.00%
Total	30	100%

Table V shows out of 30 cases, 07 (23.33%) cases had exposed bone and 06 (20.00%) cases had exposed tendon on the floor of wound.

Table-VI: Per-operative dimension of the soft tissue defect after excision among study cases (n-30)

Dimension of the Defect	Variables (mm)	Frequency (n)	Frequency (%)	Mean ± SD (mm)
Length of defect	11-25	17	43.48%	27.10±10.35
	26-40	09	43.48%	
	>40	04	4.35%	
Width of defect	6-15	15	30.43%	15.43±5.21
	16-25	14	39.13%	
	>25	01	26.09%	

Table VI shows that Maximum length of the soft tissue defect was 50 mm and minimum length 12 mm, mean length 27.10 (±10.35). The Maximum width was 30 mm and minimum width 7 mm, Mean width 15.43 (±5.21)

Table-VII: Dimension of the flap among study cases (n-30)

Dimension of the Flap	Variables (mm)	Frequency (n)	Frequency (%)	Mean ± SD (mm)
Length of flap	11-25	17	43.48%	28.20 (±9.69)
	26-40	09	43.48%	
	>40	04	4.35%	
Width of Flap	6-15	15	30.43%	15.57 (±4.67)
	16-25	14	39.13%	
	>25	01	26.09%	

Table 9 shows the size of the flap. The maximum length of the flap was 52 mm and minimum was 14 mm, with mean length 28.20 (±9.69). The maximum width of the wound was 25 mm and minimum was 8 mm with mean width 15.57 (±4.67).

Table-VII: Method of donor site closure of FDMA flap among study cases (n-30)

Method of closure	Frequency (n)	Percentage(%)
STSG	02	6.67%
FTSG	27	90.00%
Fillet	01	3.33%
Total	30	100%

Table VII shows donor site of maximum 27 (90.00%) cases were covered with FTSG.

Overall flap survival among study cases (n-30)
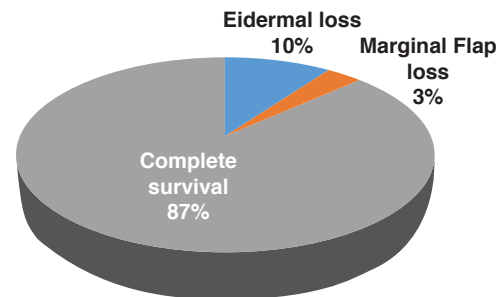
Pie Chart shows among 30 cases, 04 cases had different types of complication shown in table VIII. There were epidermal flap loss in 03 (10%) cases and 01 case (3.33%) had marginal flap loss.

Table-VIII: Management of Postoperative Complications among study cases (n-30)

Case no.	Post-operative complications	Management
Case - 10	Marginal flap loss	Conservative management
Case - 16	Epidermal loss	Conservative management
Case - 20	Epidermal loss	Conservative management
Case - 22	Epidermal loss	Conservative management

Table VIII shows the description of the management of complications of the 04 cases which had post-operative complications.

Final Outcome of flap based on preset criteria among study cases (n-30)

Pie Chart shows the outcome of flap according to preset criteria. 26 (86.67%) cases were very good and 04 (13.33%) cases were good.

Discussion

The thumb is used in almost all human hand functions. Therefore, thumb injuries have much more significant impact on the normal daily life activities than do other digits injuries.2 Reconstruction of complex soft tissue defects of the thumb, with exposure of the underlying structures, is challenging to hand surgeons due to limited local soft tissue availability and the requirements for pliable, durable and sensate skin coverage to preserve the thumb function which is of paramount value to the usefulness of the hand. 9This study included 30 cases. The mean age of total cases was 26.16

years (age range: 08- 48 years).In a previous study Cheng C et al study in 2004, the age range was 20-56 years and average age was 33 years. In the study of Waheduzzaman et al the mean age was 26.23(SD±8.78) year. [17]

Among 30 cases, 28 (60.87%) were Male and 02 (39.13%) were Female. Male female ratio was in this study 14:1. In a study of Samir et al, 2018 Male and female ratio 6.5:1.[12] Mahesh AT et al, (2016) 5 were male and 3 were female. [1416] Waheduzzaman et al, shows out of 31 patients 28 were male and 3 were female; male female ratio was 9:1. [17] Among 30 cases, 10(33.34%) were day labor, 09 (30.00%) were student. They were followed by service holder 08 (26.67%), businessman 04 (17.39%) and 02 (6.67%) were housewife. But occupation was not included in any other study.

In this study, burn was the cause of defect in maximum cases 16 (53.33%) followed by trauma [14] (46.67%). The type of burn was electric burn in 15 cases and flame burn in one case. In the study of Waheduzzaman et al, most common cause of injury was electric burn, 24 (77.4%), next was due to machinery injury 6 (19.4%), only one case was due to wax burn.. In the study of Thomas Muyldermans et al 4 patients presented with trauma, 2 patients with defects after tumor resection, and one patient with infection of the thumb. [13] The most common cause due to electric burn among our study population indicates their unprotected nature in their working environment and as electric burn causes deep burn with exposure of tendon or bone so they needed flap cover for their reconstruction and was included in our study.

In this study, Left hand was involved hand in maximum 17(56.67%) cases. Regarding the site volar aspect of thumb was the affected area in 13 cases, followed by dorsum and lateral. The number was 05 (16.67%) in both sites; Most of the injury occurred on thumb of dominant hand, 19 (61.3%) compared to not non-dominant hand, 12 (38.7%) and most of the patient was right hand dominant, 27(87.1%). In the study of Thomas Muyldermans et al dominant hand in 6 patients among 7 patients and all are volar defect. [13]

In this study flaps were transferred through open subcutaneous tunnel to prevent any kind of external pressure on pedicle from tissue edema and tightness. In Samir et al study, the flap was transferred through a subcutaneous tunnel into the defect of the thumb by gentle traction.[12] The tunnel was tight in seven (46.7%) patients and had to be laid open then sutured primarily after flap in setting among the fifteen patients. The flap was then passed through a subcutaneous tunnel to the defect area and sutured. thumb defect was left open for monitoring. The donor site was grafted over the dorsum of the proximal phalanx index finger and the rat tail defect over the dorsum of the second metacarpal was closed primarily. [9]

Among 30 patients, bone exposed in 7 patients, tendon exposed in 6 patients, both bone and tendon exposed in 4 patients, implant exposed in 1 patient and no vital structure exposed in case of 12 patients. Among this 12 patients 7 patients had volar palp defect and 5 over joint so flap coverage done. In the study Ibrahim Ahmed et al, out of 23 patients, 18 had both exposed tendons and bones while 5 had exposed tendons only.16 In the study of Waheduzzaman et al, exposed bone 12 (38.7%) cases, exposed tendon 9 (29%) cases, pulp 7(22.6%) cases, stump cover 2 (6.5%)

cases, exposed joint 1 (3.2%) cases. [17]

In this study, defects mean length was 27.1 (12-50) mm and mean width is 15.43 (7-30) mm. The dimensions of the flap mean length is 28.2 mm (14 mm - 52 mm) and mean width is 15.57 mm (8 mm -25 mm). In the study of Shun-Cheng et al, flap size ranged from 3 x 1.5 cm to 5 x 3 cm. [7] In the study of Samir et al, the mean flap size was 33.3×17.7 mm. [9] In the study of Waheduzzaman et al, mean flap length was 35.25 mm and breadth was 28.21mm.[17]

Out of 30 cases, flap donor site were covered by STSG in two cases. FTSG was done in 28 cases taken from arm or wrist. In Samir et al, all cases were covered by FTSG taken from groin12 and Waheduzzaman et al, all 31 donor site covered by FTSG.[17] There was no complication of donor site observed. All skin grafts take 100% and the fillet flap survived completely.

Regarding outcome of the study, according to pre-set criteria among 30 cases, 26 (86.67%) cases were excellent, 04 (13.33%) cases were good. There was no case of satisfactory or poor outcome according to pre-set criteria. Overall post-operative complication rate was 13.34%. Among them, epidermal loss was found in 3 cases and marginal flap loss due to necrosis in one case. That may be due to the flaps were compromised due to venous congestion. Complication was found mostly on the cases of electric burn wound. All the cases were managed conservatively by secondary intension healing. Mahesh MD et al, (20016) described in their study, among the eight cases one patient had tip necrosis which was managed by secondary intension healing.[14] Cheng et al described no flap loss or any other complication. Only complaint from the patients was graft discoloration.[7] In the study of Waheduzzaman et al, 9 flap have minor complication with 6 flap had epidermis loss and rest 3 had marginal tip necrosis of about 1 mm which healed secondarily and did not required any further intervention.[17]

Conclusion

First dorsal metacarpal artery flap offers a reliable coverage for small to moderate sized thumb defects. Moreover, it provides good functional outcomes with no donor site morbidity. It is a simple, effective and uncomplicated surgical technique.

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Original Article

Role of Pre-operative Shower with Common Soap to Prevent Postoperative Wound Infection in Routine and Emergency Laparotomy.

Faruquzzaman [1] , Maitra T K [2], Ali M S [3]

ABSTRACT

Introduction: In different research studies and meta-analysis, it has been already established that preoperative shower with Chlorhexidine has protective role to prevent and reduce surgical site infections. However, in many guidelines, including the National Institute of Health and Care Excellence (NICE) guideline, UK, the role of showering is not recommended.

Objectives: The aim of this research is to depict the role of preoperative showering to reduce surgical site infections.

Method: This was a prospective study with a total 308 patients of Laparotomy in Khulna Medical College Hospital, Bangladesh, from January 2016 to December 2020. Convenient purposive sampling was the sampling method. Ethical clearance was taken individually from patient and from the ethical review committee of Khulna Medical College Hospital.

Results: Among the total 308 patients, 240 and 62 patients had emergency and routine Laparotomy respectively. 18.8% patients with emergency laparotomy (Group A) had surgical site infections, whereas 6.4% patients with routine laparotomy had surgical site infections. According to the Southampton wound grading system, in Group A, surgical site infections were either deep or organ space infections (Grade IV or V), whereas, in Group B, all infections were superficial (Grade II). In case of routine surgery, where the patients had a shower preoperatively at the day or before the day of operation, wound infection was nil. When the patients had no shower within 05 days prior to emergency surgery, the infection rate was 8.8%. And when the patients had a shower within 2-5 days prior to surgery, the infection rate was 7.1%. The patients who had a shower 01 day before surgery or at the day of surgery, the infection rates were 2.1% and nil respectively.

Conclusion: Taking shower with common soap before surgery reduces the rate of surgical site infections. Shower prior to or at the day of surgery greatly influences the overall infective outcome. Therefore, shower and it timing is an important factor in relation to both routine and emergency surgery.

Keywords: Surgical sites infection, shower, timing, emergency, routine, laparotomy.

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Introduction

According the United State Centre for Disease Control guideline, 1999, surgical site infections are infection is the infections which occur within 30 days of surgery at the site of operation, however, in case of implant surgery, the duration is one years following operation.[1,2] Surgical wound infections continue to consume a considerable portion of health care finance. Even though the complete elimination of wound infections is not possible, a reduction of the observed wound infection rate to a minimum level could have marked benefits in terms of both patient comfort and resources used.[3] With the infection rate for clean wounds being inherently low, these indeterminate categories can comprise a significant proportion of wounds that are not clearly infected or uninfected and may skew data in any study of infection rates. Partly in order to address this problem of no uniform definitions, The Surgical Wound Infection Task Force, including representatives from the Society for Hospital Epidemiology of America, the Association for Practitioners in Infection Control, the Centers for Disease Control, and the Surgical Infection Society, published in 1992 definitions of surgical site infections.[3,4] In many recent studies, the role of preoperative showering has been linked up with the surgical site infections.[5-8] In a study it has be depicted that showering preoperatively with chlorhexidine gluconate is an issue that continues to promote debate; however, many studies demonstrate evidence of surgical site infection risk reduction. Methodological issues have been present in many of the studies used to compile guidelines and there has been a lack of standardization of processes for application of the active agents in papers pre-2009. This review and commentary paper highlights the potential for enhancing compliance with this low-risk and low-cost intervention and provides some guidance for enhancing implementation of preoperative

showering with both chlorhexidine in solution and impregnated wipes.[5, 9, 10] In our current research our aim was to link up the surgical site infection with the timing of shower with common soap before operation in Khulna Medical College Hospital, Bangladesh.

Method

This study was conducted as a prospective study with a total 308 patients of Laparotomy from January 2016 to December 2020 in Khulna Medical College Hospital, Bangladesh. Among the study population, 240 laparotomy were done as emergency procedure (Group A) and 62 laparotomy were done as routine procedure (Group B). Study population was selected by convenient purposive sampling based on inclusion and exclusion criteria. The survey data were usually be analyzed using both analytic as well as descriptive statistic. Such as; mean, SD, percentage etc. Ethical clearance was taken individually from patient and from the ethical review committee of Khulna Medical College Hospital. The Southampton wound grading[2] system was applied to assess the surgical site infections in study population.

Results

The age and sex distribution of the Group A and B are shown in table 1 & 2 respectively.

Age group (Years)	Male			Female		
	N	%	Mean±SD	N	%	Mean±SD
<30	12	05	45±1.7	07	2.9	49±2.0
30-39	25	10.4		18	7.5	
40-49	35	14.6		27	11.3	
50-60	41	17.1		20	8.3	
>60	30	12.5		25	10.4	
Total	143	59.6		97	40.4	

Table 1: Age and sex distribution of study population in Group A.

Age group (Years)	Male			Female		
	N	%	Mean±SD	N	%	Mean±SD
<30	02	3.2	54±2.1	00	00	50±1.5
30-39	03	4.8		04	6.5	
40-49	08	12.9		12	19.4	
50-60	07	11.3		06	9.7	
>60	10	16.1		10	16.1	
Total	30	48.4		32	51.6	

Table 2: Age and sex distribution of study population in Group B.

The overall wound infection rate in both groups is depicted in figure 1.
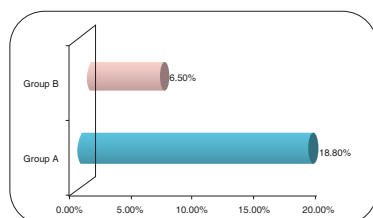
Figure 1: Wound infection rate in both study groups.

Using the Southampton wound grading system2, the overall grade of surgical site infections in Group A and B is shown in table 3.

Grade	Group A		Group B	
	N	%	N	%
Ia	00	00	00	00
Ib	02	0.8	00	00
Ic	02	0.8	00	00
IIa	01	0.4	02	3.2
IIb	00	00	02	3.2
IIc	05	2.1	00	00
IId	03	1.3	00	00
IIIa	08	3.3	00	00
IIIb	07	2.9	00	00
IIIc	07	2.9	00	00
IIId	02	0.8	00	00
IVa	04	1.7	00	00
IVb	04	1.7	00	00
V	10	4.2	00	00
Total	45	18.8	04	6.5

Table 3: Southampton wound grading system of surgical site infections in both study groups.

Among the 45 and 04 cases of wound infection, the timing of taking shower prior to surgery is shown in figure 2.
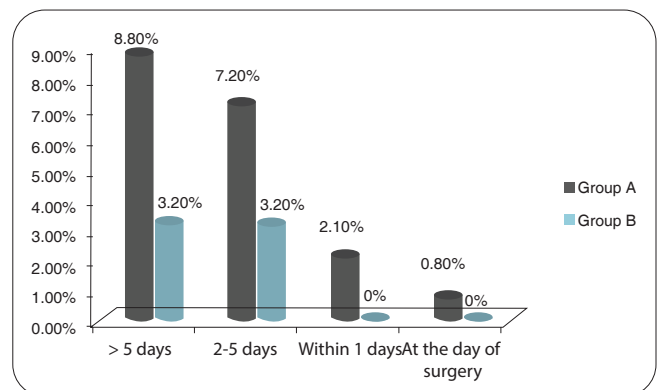
Figure 2: Approximate timing of shower among the patients with wound infection.

Discussion

Among the 240 patients of emergency laparotomy (Group A), 59.6% (143) and 40.4% (97) patients were male and female respectively. In case of male patients, 17.1% (41) were in 50-60 years of age group, followed by 14.6% (35) were in 40-49 years of age group. On the other hand, in the female patients, majority of the patients (11.3%, 25) were within 40-49 years of age group, followed by 10.4% (25) were in age >60 group. Mean±SD age was 45±1.7 and 49±2.0 years respectively in male and female group. During the study period, a total number of 62 patients of elective laparotomy were included (Group B), among which 48.4% (30) were male and 51.6% (32) were female patients. Majority of the male patients (16.1%, 10) were in >60 years of age group,

whereas in case of female most of the patients (19.4, 12) were in 40-49 years of age group. Mean±SD age was 54±2.1 and 50±1.5 years respectively in male and female group.

In case of emergency laparotomy (Group A), 18.8% (45 out of 240) patients had surgical site infections, whereas among the patients with routine Laparotomy, 6.4% (04 out of 62) patients had surgical site infections. The Southampton wound grading system2 is a widely accepted tool to assess and categorize surgical site infections. Using this tool in case of both study groups, it was observed that in case of Group A, in most patients, surgical site infections were either deep or organ space infections (Grade IV or V). On the contrary, in Group B, all infections were superficial (Grade II).

The most important finding of this research was the incidence of infection in relation to timing of shower with common soap in emergency and elective laparotomy. The results were suggestive that in case of routine surgery, where the patients had a shower preoperatively at the day or before the day of operation, wound infection was absolutely nil. On the contrary, a major portion of the patients were unable to have a shower before the operations due to their illness. As a result, when the patients had no shower within 05 days prior to emergency surgery, the overall infection rate was 8.8% (21 patients), whereas when the patients had at least one shower within 2-5 days prior to surgery, the infection rate was 7.1% (17 patients). But when the patients had a shower at least 01 day before operation, the infection rate was 2.1 % (05 patients). When the shower was possible on the day of operation even in case of emergency surgery, the infection rate was found nil. The observation suggests that surgical site infections have strong relationship with the timing of shower prior to surgery, which is major problem in case of emergency surgery as a result of severe illness.

The use of a pre-admission shower with 2% or 4% aqueous chlorhexidine gluconate (CHG), to reduce skin contamination prior to surgery, has been addressed in the 1999 US Centers for Disease Control and Prevention (CDC) Hospital Infection Control Practices Advisory Committee (HICPAC) document, Guideline for the Prevention of Surgical Site Infection5. However, the National Institute of Health and Care Excellence (NICE) of the UK, in its guideline on prevention and treatment of SSI, have not strongly recommended bathing or showering with CHG. Moreover, some evidence-based analysis, including that presented in the NICE guideline, does not support the routine use of pre-admission whole-body cleansing or showering with CHG5,[6] But our study strongly supports the role of preoperative showering to reduce surgical site infections in surgical practice.

Conclusion

Surgical site infections are unavoidable but preventable scenario in many circumstances. The incidence is higher in emergency surgery, mostly are deep and organ space infections.

Recommendation

Showering prior to surgery and the timing of shower greatly influence the incidence of surgical site infections, reflected in this research.

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Original Article

Knowledge, Attitude and Practice of
Mothers Attending the Location Management Center (LMC)

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ABSTRACT

Introduction: Proper infant feeding is crucial for child nutrition, survival, and development. Breast milk is the gold standard for infant feeding. There are three determinants of good health, nutrition, and child survival. These are food security, care, and disease control. Breastfeeding is an excellent example of all these three things in one.

Objective: To assess knowledge, skills and attitude of mothers attending the lactation management center.

Methods: A semi-structured data sheet was used to collect data from mothers attending the lactation Management Centre (LMC) of IMCH. 100 lactating mothers were included in this study over period of 6 (six) months from 1st June 2009 to 1st December 2009. Data from the respondents was collected by the researcher herself by physical examination and face to face interview using a semi-structured data sheet.

Results: Thirty-two percentages of respondents belonged to the `20 years' age group and 50% of them were primipara. The average age of the babies was about 5.4 months and their weight ranged from 890 grams to 13.75 kg. 27% of the respondents were literate; 93.0% of the female were housewives and 61.0% of the cases belonged to `poor' socio-economic status. 24.0% of cases delivered their last baby at the hospital and 87.0% of respondents had a vaginal delivery. All the mothers (75), who were not exclusively breastfeeding, gave extra food to their babies. About one-fifth of the respondents were suffering from various complications (PET 5, Eclampsia 5, GDM 8, and other diseases 5) during the last pregnancy. 63% of the respondents learned their knowledge of breastfeeding from their mothers. All the women (63%), who took medications during the last pregnancy, used to take both Iron and Calcium. Most of the cases correctly kept the baby's body, close to the mother's (86.0%) and facing breast, nose opposite the nipple (84.0%). But negative remarks were for 'straight head and body (84.0%) and 'the whole body fully supported' (85.0%); 'Lower lip turned outward' (14.0%) and 'More areola above than below the mouth' (15.0%). 88.0% of the respondents did not know how to effectively express the breast with 'C position'. 'Emotional satisfaction' was the most (26.0%) express attitude. Only 20.0% respondents had some sort of infection involved in the breast. Most of the respondents did not have adequate 'knowledge' (9.0%). All the breastfeeding mothers received advice on breastfeeding. Only the patients (20) with infection received antibiotics for their treatment, the remaining was treated symptomatically.

Conclusion: In general women of Bangladesh are used to breast feed their babies. Education of the pregnant women during ANC about breast feeding improve their knowledge and skill.

Keywords: Attitude, Lactation management center

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Introduction

The human species is the only one among mammals in which breast feeding in not governed only by instinct. Therefore, breastfeeding should have to be learned. Currently, especially in modern societies, women have few opportunities to learn something about breastfeeding because their traditional sources of learning from more experienced women in the family-were lost as extended families were replaced by nuclear families. Consequently, inexperienced women become mothers with little or no knowledge about the proper technique to breastfeed, which makes them more vulnerable to difficulties faced during the process. Breast feeding is convenient, safe, economical and emotionally satisfying to most women. Breast feeding has advantages not only for baby but also for the mother and society. A mother`s milk is especially suited for her own baby. The composition of all breast milk is no alike. Colostrum, preterm milk and mature milk changes from month to month,

day to day and feed to feed to meet each particular baby`s needs. So, breast feeding should start as soon as possible. Exclusive breast feeding for six months and babies should continue to breast feed for up to two years or beyond with increase of complimentary food. Breast milk provides not only nutrients for physical growth but also both immune and nonimmune elements for protection against disease and an opportunity for interaction between new born and mother which may, at least in higher species of mammals, initiate the learning process necessary to the transition to independent living. One hundred million infants are born in the developing countries each year, ten million of which die before their first birthday, five million of this succumbs to diarrhea and dehydration, and one million of the infant deaths have been attributed directly to contaminated infant formula. Common problems related to breastfeeding including breast engorgement, painful nipple, nipple infection, mastitis, breast abscess, low milk production. Incorrect techniques, infrequent breastfeeding and breastfeeding on scheduled times, pacifiers and extra food from outside are important risk factors that can predispose to lactation problems. The adequate management of these conditions are fundamental, and if not treated lead to early weaning. To encourage the exclusive breast feeding and to yield maximum breast milk during these period health professionals can play important role to overcoming such difficulties, but for that they need specific knowledge, attitude and practice.

Method

This descriptive and cross sectional study was conducted in lactation management center (LMC) of ICMH. The study period was 6 (six) months from 1st June 2009 to 1st December 2009. The objective of the study was to assess knowledge, attitude and practice of mothers attending the lactation management center. The sample size for this study was 100. The study participants were selected purposively depending on their willingness to participate in the study. Prior to data collection a questionnaire was designed for this study by reviewing all of the available questionnaire of previous studies along with the help and critical analysis of the guide of this study.

Data was collected by the researcher herself by physical examination and face to face interview. Date analysis was done by SPSS software package version.[22] Data was presented in the from table and graphs. Data was analyzed with descriptive statistics. Chi-square and students t-test were used to proportions, where applicable. The level of significance of 0.05 was used to proportions, where applicable. The level of significance of 0.05 was used for this study.

Results

In the following seventeen sections the study data are presented in tabular as well as figurative forms. These sections include Socio-demographic information's (3:2); information on knowledge, attitude and practice (3:3) and information regarding management (3:4)

3:1 Socio-demographic information

In this study, information was collected from 100 subjects who came with problems in lactation to LMC of ICMH during June 2009 to December 2009. This section covers socio-economic information recorded from the cases.

3:1.1 Age

Distribution of the participants according to their age

Age (in years)	Frequency	Percent
< 20 years	32	32.0
20 – 24 years	31	31.0
25 – 29 years	23	23.0
≥ 30 years	14	14.0
Total	100	100.0

Mean 23.12; Median 22.00; SD 4.802; Range 17 – 34 years

According to Table 3.1 the highest number of women [32 (32.0%) belonged to `<20 years' age group.

3: 1.2 Baby

Distribution of the participants according to the age of their baby

Age (in months)	Frequency	Percent
≥ 1 month	7	7.0
1 – 6 months	50	50.0
7 – 9 months	27	27.0
10 – 12 months	12	12.0
> 12 months	4	4.0
Total	100	100.0

Mean 5.375; Median 4.5; SD 3.88; Range 0.5 – 14 months.

As per Table 3.2.1 the average age of the babies was about 5.4 months and half [50 (50%) of them belonged to `1-6 months' age group.

Table 3.1.3 Distribution of the participants according to the order of their babies.

Order of the baby	Frequency	Percent
1st	46	46.0
2nd	37	37.0
3rd	16	16.0
4th	1	1.0
Total	100	100.00

Table 3.1.3 Shows that, the highest order of baby was 4 and most respondents came with their 1st baby.

Table 3.1.4 Distribution of the participants according to the weight of their baby

Weight (in kg)	Frequency	Percent
≤ 1.0 kg	3	3.0
1 – 2 kg	18	18.0
2 – 4 kg	22	22.0
4 – 8 kg	27	27.0
8 – 12 kg	26	26.0
> 12 kg	4	4.0
Total	100	100.00

Mean 5.485; Median 4.7; SD 3.567; Range 0.89 – 13.75 kg

Table 3.2.3 illustrates that, the weight of the babies ranged from mere 890 grams to 13.75 kg. The highest number of babies [27 (27.0%)] belonged to `4-8 kg' group.

3.1.5 Education

Figure 3.1 Distribution of the participants according to their educational stats.

Education of the mother
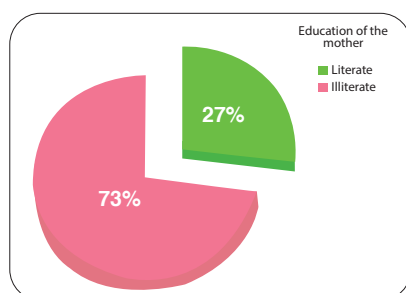
As per, Figure 3.1 only just above one-fourth [27 (27%0 of the respondent

As per, Figure 3.1 only just above one-fourth 27 (27%) of the respondents were literate.

3.1.6 Occupation

Figure 3.2 Distribution of the cases according to their occupation

Occupation of the mother
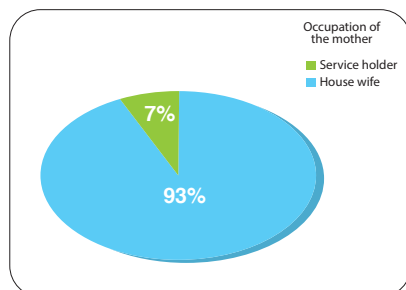
Figure 3.2 illustrates the working status of the respondents. Most 93 (93.0%) of the female were housewives.

3.1.7 Socio-economic

Distribution of the participants according to their socio-economic status.

Socio-economic status	Frequency	Percent
Poor	61	61.0
Middle Class	37	37.0
Higher Class	2	2.0
Total	100	100.0

Mean 5.375; Median 4.5; SD 3.88; Range 0.5 – 14 months.

According to Table 3.1.7, more than three-fifth 61 (61.0%) of the cases belonged to 'poor' socio-economic status.

3.1.8 Delivery

Figure 3.3 Distribution of the respondents according to their place of delivery

Delivery Place
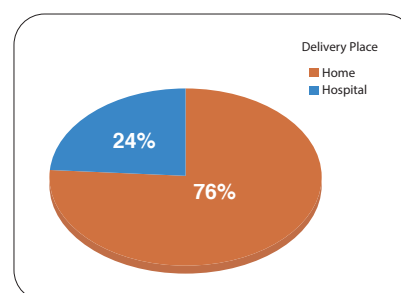
Figure 3.3 shows that, more than three-fourth 76 (76.0%) of the respondents had home delivery and the remaining [24 (24.0%)] cases delivered their last baby at hospital.

Figure 3.4 Distribution of the respondents according to their mode of delivery of last child

Mode of delivery
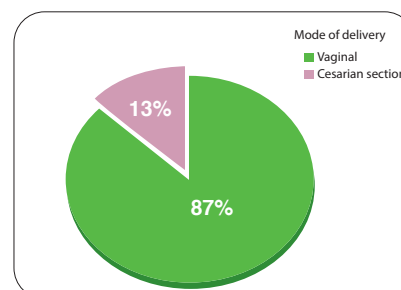
Figure 3.4 explains that, most 87 (87.0%) of the respondents had vaginal delivery for their last baby.

3.1.9 Exclusive Breast Feeding

Figure 3.5 Distribution of the respondents according to their exclusive breast feeding to the last baby

Exclusive breast feeding to the last baby
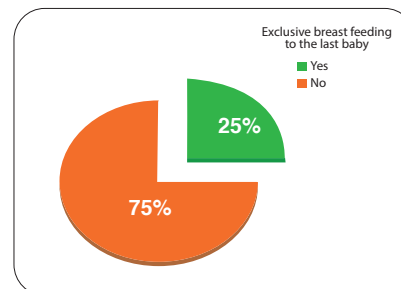
Table 3.1.9 shows that, exactly just a quarter [25 (25.0%)] of the respondents gave exclusive breast feeding to their last baby.

Figure 3.6 Distribution of the respondents according to their giving extra food to the last baby
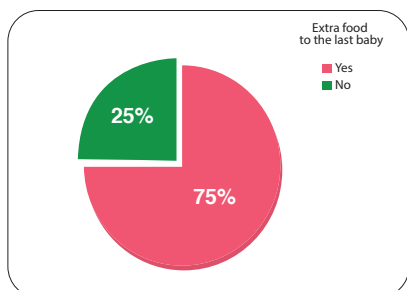
Table 3.4.2 explains that, all the mothers 75 (75.0%), who were not exclusively breast feeding, gave extra food to the last baby.

3.2 Maternal Complication

3.2.1 Complications

Distribution of respondents according to their complications during the last pregnancy.

Pre-Eclamptic Toxemia (PET)	Frequency	Percent
Yes	5	5.0
No	95	95.0
Eclampsia		
Yes	5	5.0
No	95	95.0
Gestational Diabetes Mellitus (GDM)		
Yes	8	8.0
No	92	92.0
Other diseases		
Yes	5	5.0
No	95	95.0
Total	100	100.0

The associated diseases / complications during last pregnancy were shown on Table 3.2.1 About one-fifth of the respondents were suffering from various complications during last pregnancy.

3.3 Knowledge, Attitude and Practice

3.3.1 Source

Distribution of respondents according to their source of knowledge on breast feeding.

Source	Frequency	Percent
Mother	63	63.0
Sister	26	26.0
Nurse	7	7.0
Husband	2	2.0
Other	2	2.0
Total	100	100

According to Table 3.3.1, Most of the respondents learned their knowledge on breast feeding from their mother 63 (63.0%), followed by sister 26 (26.0%), nurse 7 (7.0%), husband 2 (2.0%) and others 2(2.0%).

3.3.1 Medication

Distribution of the respondents according to their taking medications during last pregnancy
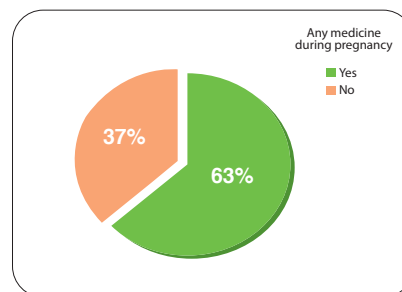
Figure 3.5 explains that, most 63(63.0%) of the mothers used to take medications during last pregnancy.

Distribution of respondents by their types of medication

Medication		Frequency	Percent
	No Medication	37	37.0
Iron	Fe	61	61.0
	Fe + vitamins	2	2.0
Calcium	Ca	57	57.0
	Ca + Vitamins	6	6.0
	Total	100	100.0

As per Table 3.3.2, all the women 63 (63.0%), who took medications during last pregnancy, used to take both Iron and Calcium.

3.3.3 Position

Distribution of respondents by the position of their babies during breast feeding

Straight Head and body	Frequency	Percent
Yes	16	16.0
No	84	84.0
Body close to mother		
Yes	86	86.0
No	14	14.0
The whole body fully supported		
Yes	15	15.0
No	85	85.0
Facing breast, nose opposite the nipple		
Yes	84	84.0
No	16	16.0
Total	100	100.0

Table 3.3.3 explains that, while observing the mothers during breast feeding, most of the mothers correctly kept the baby`s `body close to mother 86 (86.0%) and the babies were `facing breast. nose opposite the nipple; 84 (84.0%). On the contrary negative remarks were for `straight head and body' 84 (84.0%) and ` the whole body fully supported' 85 (85.0%) and `the whole body fully supported' 85 (85.0%).

3.3.4 Attachment

Distribution of respondents by the attachment with their babies during breast feeding

Chin touching breast	Frequency	Percent
Yes	17	17.0
No	83	83.0
Mouth wide open		
Yes	16	16.0
No	84	84.0
Lower lip turned outward		
Yes	14	14.0
No	86	86.0
More areola above than below the mouth		
Yes	15	15.0
No	85	85.0
Total	100	100.0

Table 3.3.4 illustrates that, in most of the mothers the attachment with the baby was not correct, as-`Chin touching breast; 17 (17.0%); `Mouth wide open' 16 (16.0%); `Lower lip turned outward' 14 (14.0%) and `More areola above than below the mouth' 15 (15.0%).

3.3.4 Expression

Distribution of respondents by their expression of milk during breast feeding
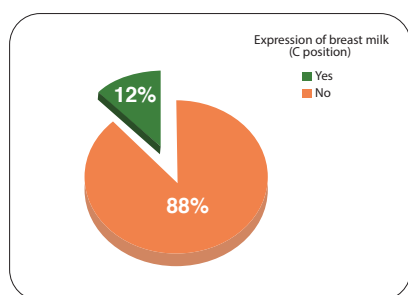
Figure 3.7 Shows that, most 88 (88.0%) of the respondents did not know how to effectively express the breast with `c position'.

3.3.5 Attitude

Distribution of respondents by their attitude towards breastfeeding

Attitude	Frequency	Percent
Emotionally satisfying	26	26.0
Better for baby	23	23.0
Better for health	16	16.0
Conventional	16	16.0
Natural	8	8.0
Cheap	6	6.0
Easy	5	5.0
Total	100	100.0

According to Table 3.3.5, `emotional satisfaction' was the most 26 (26.0%) expressed attitude towards breast feeding.

3.3.6 Breast Problems

Distribution of respondents by their breast problem

	Breast Problem	Frequency	Percent
	Breast engorgement	35	35.0
	Cracked nipple	17	17.0
	Sore nipple	11	11.0
	Flat nipple	9	9.0
	Inverted nipple	8	8.0
Infection	Mastitis	16	16.0
	Breast abscess	4	4.0
	Total	100	100.00

Table 3.3.6 Shows that, only one-fifth 20 (20.0%) of the respondents had some sort of infection involved in the breast for their reasoning to visit the LMC.

3.3.7 Problems

Distribution of respondents by their problems of breast feeding identified at the center.

Knowledge	Frequency	Percent
Good	9	9.0
Poor	91	91.0
Skill		
Good	11	11.0
Poor	89	89.0
Attitude		
Good	93	93.0
Poor	7	7.0
Total	100	100.00

Table 3.3.5 illustrates that, most of the respondents did not have adequate `knowledge'

9 (9.0%) and skill' 11 (11.0%) about breast feeding, but their attitude towards breast feeding was good 93 (93.0%).

3.4 Management

3.4.1 Advice

Figure 3.7 Distribution of the respondents by receiving advice.
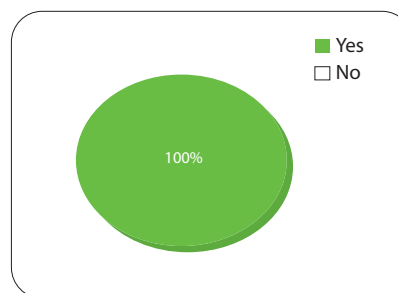
Figure 3.7 shows that, 100% of the respondents received advice regarding knowledge and skill of breast feeding.

3.4.2 Treatment

Distribution of respondents received treatment for

breast feeding problems identified at the center.

Treatment	Frequency	Percent
Symptomatic	80	80.0
Use of antibiotic	20	20.0
Use of anti fungal	0	0.0
Total	100	100.0

Table 3.4.2 explains that, only the patients 20 (20.0%) with infection received antibiotics for their treatment, for the remaining respondents 80 (80.0%) the treatment was symptomatic.

Discussion

This study was aimed at reporting knowledge, attitude and practice of mothers attending the lactation management center. Information was collected from 100 subjects who came during June 2009 to December 2009.

The highest number of women [32] belonged to `<20 years' age group. In LMC of ICMH 55% of mothers were in the age group `15-20 years'. The average age of the babies was about 5.4 months and half [50] of them belonged to `1-6 month' age group. The highest order of baby was 4 and most respondents came with their 1st baby. The weight of the babies ranged from mere 890 grams to 13.75 kg. The highest number of babies [27] belonged to `4-8 kg' group. In Australia by 52 weeks, formula-fed infants were heavier and longer than breastfed infants with early regular formula feeding associated with more overweight. Only just above one-fourth (27%) of the respondents were literate. More (93.0%) of the female were house wives. More than three-fifth (61.0%) of the cases belonged to `poor' socio-economic status. More than three-fourth (76.0%) of the respondents had home delivery and the remaining (24.0%) cases delivered their last baby at hospital. Most (87.0%) of the respondents had vaginal delivery for their last baby. In Canada, findings indicated that primiparous women and women who delivered by caesarean section consistently received more information about breastfeeding management than multiparous women and women who delivered vaginally. Exactly just a quarter (25.0%) of the respondents gave exclusive breast feeding to their last baby. All the mothers [75], who were not exclusively breast feeding, gave extra food to the last baby. In Pakistan exclusive breastfeeding was reported by about 54% of the mothers. Thirty-five percent of the mothers gave pre lacteal feed, 14% discarded colostrum and 43% woke up their infant to feed if time had exceeded 2 hours.[55] Only about 60% of babies in the United States were breast-fed in 1995.[57] In Mumbai, India, 44 (36.1%) mothers gave pre-lacteals to their children (70.2%) practiced exclusive breast-feeding and 9(7.4%) started bottle feeds to their babies.[58] In Perth, Australia, although 94% of women were breastfeeding on discharge from hospital, this rate reduced to 59% at 6 months and 21% at 12 months.[60] Another study In Australia, infants fully breastfed for less than four weeks compared to infants fully breastfed for four weeks or longer had more health problems, more doctor visits and poorer maternal rating of child health at four weeks. [68]

About one-fifth of the respondents were suffering from various complications [PET (5), Eclampsia (5), GDM (5) and other diseases (5)] during last pregnancy. Most of the respondents learned their knowledge on breast feeding from their mother (63)], followed by sister (26), nurse (7), husband (2) and others (2). Results from a study in Australia indicated that fathers, other family members and friends can have a significant impact in supporting breastfeeding if they are positive about breastfeeding and the skills to support breastfeeding.[64] Most (63.0%) of the respondents were used to take medication during their last pregnancy, used to take both Iron and Calcium. While observing the mothers during breast feeding, most of the cases correctly kept the baby`s body close to mother (86.0%) and the babies were `facing breast, nose opposite the nipple' (84.0%). On the contrary negative remarks were for `straight head and body' (84.0%) and `the whole body fully supported'(85.0%). In most of the mothers the attachment with the baby was not correct, as-`Chin touching breast' (17.0%); Mouth wide open' (16.0%); `Lower lip turned outward' (14.0%) and `More areola above than below the mouth' (15.0%). Most (88.0%) of the respondents did not know how to effectively express the breast with `c position'. `Emotional satisfaction' was the most higher (26.0%) expressed attitude towards breast feeding. Only one-fifth (20.0%) of the respondents had some sort of infection involved in the breast for their reasoning to visit the LMC. In Rajshahi only 12% of attending mothers were suffered from different types of breast problems like-engorged breast, sore nipple, flat nipple, crack nipple and breast abscess.[56] Dakn et al[61] found that, women with pain, cracked nipples, milk stasis of mastitis reported a higher stress level than women without breast problems. Additionally, the majority of women with breast problems and increased psychological stress gave up breastfeeding sooner.[61] Most of the respondents did not have adequate `knowledge' (9.0%) and `skill' (11.0%) about breast feeding, but their attitude towards breast feeding was good (93.0%). In Pakistan Majority of the females were aware of the advantages (92%) and the disadvantages (85%) of breastfeeding.[55] In Latvia, four attribute categories were scored and examined as related to the pain levels of the mother: the baby`s face position (chin and nose and head position, cheek line, lip flange and angle of mouth opening); the baby`s body position (height at the breast, body rotation and body in relation to mother`s body); the breastfeeding dynamic (change in nursing pattern (suck vs swallow) and movement of mothers breast) and the latching process of the baby (root, gape, seal and suck). More optimal latching process behaviors of the baby (rooting, gaping, sealing, and sucking behaviors) are slightly related to lower levels of reported pain. [70]

100% All the respondents received advice regarding knowledge and skill of breast feeding. Only the patients (20) with infection received antibiotics for their treatment, for the remaining respondents [80] the treatment was symptomatic.

Conclusion

Attitude of mother is good in compare to knowledge and skill. All the mothers (75), who were not exclusively breastfeeding, gave extra food to their babies. About one-fifth of the respondents were suffering from various complications (PET 5, Eclampsia 5, GDM 8, and other diseases 5) during the last pregnancy. 63% of the respondents learned their knowledge of breastfeeding from their mothers. All the women (63%),

who took medications during the last pregnancy, used to take both Iron and Calcium. Most cases correctly kept the baby`s `body close to mother' (86.0%) and `facing breast, nose opposite the nipple` (84.0%). But negative remarks were for `straight head and body (84.0%) and `the whole body fully supported' (85.0%). In most cases the attachment with the baby was not correct, as-`Chin touching breast' (17.0%); Mouth wide open' (16.0%); Lower lip turned outward' (14.0%) and `More areola above than below the mouth' (15.0%). 88.0% of the respondents did not know how to effectively express the breast with `c position' . 'Emotional satisfaction' was the most (26.0%) expressed attitude. Only 20.0% of respondents had some sort of infection involved in the breast. Most of the respondents did not have adequate `knowledge' (9.0%) and `skill' (11.0%), but their attitude towards breastfeeding was good (93.0%).

All the respondents received advice on breastfeeding. Only the patients (20) with infection received antibiotics for their treatment, the remaining was treated symptomatically.

Recommendation

Education of pregnant women during anti-natal care about breastfeeding will improve their knowledge and skill.

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Electrolyte Abnormalities in Neonates with Septicaemia

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ABSTRACT

Background: Sepsis continues to be the one of the major cause of mortality and morbidity in the newborn. A good number of neonatal deaths occur from neonatal sepsis despite the fact that infection has been addressed adequately with broad spectrum antibiotics and advances in neonatal life support measures. For this reason, attention was drawn to the fact that issue of fluid and electrolyte balance had been largely ignored. So, this study was carried out to see the frequency and pattern of electrolyte imbalance in neonates with septicaemia and their impact on morbidity and mortality.

Objectives: To determine the frequency and pattern of electrolyte imbalance in neonates with septicaemia and their impact on mortality and morbidity.

Method: This cross sectional study was performed in the department of paediatrics , Dhaka CMH from 1st June 2015 to 30th October 2015. All neonates who were suffering from septicaemia and admitted in Dhaka CMH and fulfilled the inclusion criteria were included in the study. It was purposive sampling with 50 patients. For each baby, a detailed history was obtained from mother or other caregiver and recorded in a questionnaire form (enclosed herewith). It was filled up by the researcher herself containing history (including antenatal history), physical examinations and laboratory findings. Collected data were analyzed by SPSS program, version- 12.

Results: During the study period total 50 neonates were admitted with the diagnosis of septicaemia in the Department of Paediatrics, CMH, Dhaka. Among the neonates, mean age was 9.26 +/- 4.58 days, mean weight 2282.68 +/- 58O.4 gm, mean gestational age 35.68 +/- 2.4O weeks, males were 30 (60%) and females were 20 (40%). Electrolyte abnormalities were found in 28 (56%) neonates having septicaemia. Among the electrolyte abnormalities hyponatremia was found in 3 (6%) neonates, hypernatremia in 6(12%), hypokalemia in 3 (6%), hyperkalemia in 10 (20%) and mixed abnormalities in 6 (12%) cases. Neonates with dyselectrolytemia were found associated with prolonged hospital stay in comparison to those with normal electrolyte level. Hypernatremia had maximum association with higher mortality. But other electrolyte abnormalities were not found associated with mortality.

Conclusion: Electrolyte abnormalities are common in neonates with septicaemia. They contribute significantly to the higher mortality and prolonged hospital stay of neonates irrespective of primary disease. Timely recognition and appropriate correction of electrolyte abnormalities are important to reduce the morbidity and mortality.

Keywords: Electrolyte abnormalities, Neonates, Septicaemia

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Introduction

In spite of continuing struggle, the under-five mortality rate is still high in Bangladesh. Though Bangladesh has achieved a significant reduction in childhood mortality from 133 per thousand in 1993 to 46 per thousand in 2014.[1] The infant mortality rate is 38 deaths per 1000 live births and the child mortality rate is 14 per 1000 children. During infancy, the risk of dying in the first month of life 28 per 1000. The high level of neonatal deaths in Bangladesh is a matter of great concern among all health professionals. Although the rate has fallen from 52 to 28 per thousand live births during last 15 years, it still remains unacceptably and alarmingly high. Deaths in the neonatal period account for 60 percent of all under five deaths.[2] The majorities of all neonatal deaths occurs during first week of life and between 25% to 45% occur within first 24 hour of life.[3]

Mortality of neonatal unit of Bangabandhu Sheikh Mujib Medical University (BSMMU) is 12.9% observing in a study done from January 2008 to December 2009 and in Dhaka Medical College Hospital (DMCH) it is 20.92%. One of the major causes of the neonatal deaths in these tertiary care hospitals is neonatal sepsis. Death from neonatal sepsis is 28.5% in BSMMU and 11.7% in DMCH.[4,5]

So, a good number of neonatal deaths occur from neonatal sepsis despite the fact that infection has been addressed adequately with broad spectrum antibiotics. Then it was found that the issue of fluid and electrolyte imbalance has been largely ignored there. Electrolytes imbalance is one of the commonest derangements encountered in critically ill neonates. They occur in a variety of conditions and may remain unrecognized leading to morbidity and mortality irrespective of the primary disease.[6]

So, timely recognition, a high index of suspicion and a thorough understanding of common electrolyte abnormalities are necessary to ensure their correction.[7]

The neonatal kidney has a limited capacity both to excrete and to conserve sodium.[8]

Hyponatremia is common in newborns in neonatal intensive care unit. Surveys from around the world suggest that up to one third of very low birth weight infants are hyponatremic in the first week after birth.[9] In neonatal sepsis, Syndrome of Inappropriate Secretion of Antidiuretic Hormone (SIADH) is a common problem where severe hyponatremia can occur.[10] ADH is also released in response to several drugs (such as Barbiturates) and various stressful stimuli such as pain, anxiety, nausea, vomiting.[11] Gastrointestinal losses due to vomiting, diarrhoea, nasogastric suction, necrotizing enterocolitis etc. also cause hyponatremia. Sepsis also causes acute tubular necrosis, renal failure which predisposes to hyponatremia.[12]

Excessive use of sodium bicarbonate, improper preparation of formula feeds, inappropriate IV fluid, increased insensible water loss especially in premature neonates kept under radiant warmers can cause hypernatremia in newborn.[13] Neonatal sepsis is a stressful condition in which aldosterone and cortisol secretion are increased which cause sodium retention.[11] ADH deficiency secondary to sepsis can occasionally exacerbate renal water loss which causes hypernatremia.[14]

Potassium homeostasis is a crucial aspect of the fluid balance in extremely low birth weight (ELBW) infants.[15] Hypokalemia and hyperkalemia occur frequently in acutely ill children and is associated with a poor outcome. Hypokalemia is associated with increased risk of mortality which correlated with the severity of disturbance.[16] In neonatal sepsis, SIADH is a common problem where hypokalemia can occur.[10] Gastrointestinal losses due to vomiting, diarrhoea, nasogastric suction, necrotizing enterocolitis (NEC) etc cause hypokalemia. Neonatal sepsis is a stressful condition in which aldosterone, catecholamines secretion are increased which cause hypokalemia.[17]

There may also be chance of intravascular or extravascular haemolysis, bleeding, tissue destruction or necrosis (such as NEC), renal failure, metabolic acidosis, respiratory acidosis. All of these may cause severe hyperkalemia.[18]

An assessment of body water metabolism and electrolyte balance play an important role in early medical management of preterm infants and sick term infants coming to neonatal intensive care unit.[12]

If inappropriate fluid and electrolyte are given to newborns, serious morbidity and mortality can result from fluid and electrolyte imbalance.[19]

So, routine measurement of serum electrolyte is the best way to monitor the baby's electrolyte status and adequacy or excess of electrolyte intake. So that early management may reduce mortality and morbidity. This is why this study is carried out to see the frequency and pattern of electrolyte abnormalities in neonates with septicaemia and their impact on mortality and morbidity.

Electrolyte abnormalities are frequently encountered in sick neonates. They occur in a variety of conditions including neonatal sepsis and may remain unrecognized leading to morbidity and mortality irrespective of the primary disease. So, timely recognition and proper management of common electrolyte abnormalities are necessary to ensure their correction. Therefore this study has been undertaken to determine the frequency and pattern of electrolyte imbalance in neonates with septicaemia and their impact on morbidity and mortality in neonates which can help in the management issue.

Method

It was a cross sectional study. Place of study was department of Paediatrics, CMH Dhaka. Period of study was 1st june 2015 to 30th October 2015. Sample size was 50 patients. As the study was conducted over a limited period of time for dissertation purpose and also there was budget constrain, the sample size was adjusted to 50.

Sampling technique was purposive sampling. Inclusion criteria was all neonates who were suffering from septicaemia and admitted in the NICU, CMH Dhaka during the study period. Definite septicaemia of the newborn was diagnosed by positive blood culture and probable septicaemia was diagnosed by a scoring system developed by Tollner U and positive CRP27. Exclusion criteria was neonates with gross congenital anomalies, any neonate sufferings from disease other than septicaemia such as perinatal asphyxia, meconium aspiration syndrome, transient tachypnea of the newborn, respiratory distress syndrome etc. Neonatal sepsis: Neonatal sepsis (also called septicaemia) is defined as a clinical syndrome characterized by signs of systemic infection and documented by a positive blood culture in the first four weeks of life. [28]

Early onset neonatal sepsis (EONS): It occurs from birth to 7 days of ages. Some authors describe early onset sepsis presents in the first 5-7 days of life and is usually a multisystem fulminant illness with prominent respiratory

symptoms.[12] In the present study, EONS is defined as sepsis which occurs from birth to 7 days of age.

Late onset neonatal sepsis (LONS): Late onset sepsis occurs after 7 days of age. Some authors describe, it may occur as early as 5 days of agel2. In the present study, LONS is defined as sepsis which occurs from 8 days of age to 28 days of age.

Hyponatremia:
Hyponatremia is defined as serum sodium level below 135 mEq / L.[12]

Hypernatremia:
Hypernatremia is defined as serum sodium level above 145 mEq/L.[12]

Hypokalemia:
Hypokalemia is defined as serum potassium level below 3.5 mEq/L.[12]

Hyperkalemia:
Hyperkalemia is defined as serum potassium level above 5.5 mEq/L.[12]

Mixed dyselectrolytaemia

It means concomitant presence of two electrolyte abnormalities such as hyponatremia and hypokalemia, hyperkalemia and hypernatremia.

For each baby, a detailed history was obtained from the mother or other caregiver and recorded in a questionnaire form. Maternal history included antenatal care, duration of labour, prolonged rupture of the membrane, mode of delivery, place of delivery, maternal illness during pregnancy. Admission weight of the baby was recorded. Gestational age was determined from maternal records and by using Modified Ballard Scoring System. Time of first cry or breathing after birth, apnoea, cyanosis, convulsion, respiratory distress, prelacteal feeding, breast feeding, reluctant to feed and bleeding manifestations were also recorded.

Each case was thoroughly examined and followed up. Heart rate, respiratory rate, temperature, colour, activity, abnormalities in head, fontanelles, any congenital anomalies, primitive reflexes, level of consciousness, muscle tone were recorded.

Venous blood sample was sent from neonates with septicaemia for estimation of serum electrolytes (Sodium and Potassium). Blood was drawn by researcher herself (sometimes by duty doctors) on admission of patients with septicaemia or during hospital stay in case of nosocomial infection.

Other relevant investigations for the diagnosis and follow up of the patients included - complete blood count, peripheral blood film, blood culture, CRP, blood urea, serum creatinine, random blood sugar, blood grouping, chest x-ray, serum bilirubin, arterial blood gas analysis.

At first, the collected data were checked manually. Then data entry was given in personal computer. Data were analyzed thoroughly by SPSS program, version- 12. Informed written consent was taken from the legal guardian of the patient.

Results

During the study period total 50 neonates were admitted with the diagnosis of septicaemia in the Department of Paediatrics, CMH, Dhaka. Among the neonates mean age were 9.26+/-4.58 days, mean weight 2282.68+/-58O.4O gm, mean gestational age was 35.68+/-2.40 weeks (Table- I).

Table- I: Distribution of baseline characteristics among the neonates with septicaemia (n= 50).

Baseline characteristics	Mean	SD(+/-)
Age (days)	9.26	+/- 4.58
Weight (gm)	2282.68	+/-580.40
Gestation (weeks)	35.68	+/-2.40

Among the neonates with septicamia males were 30 (60%) and females were 20 (40%) and male to female ratio was 1.5: 1.

Among 50 cases of septicaemia 20 (40%) were early onset and 30 (60%) were diagnosed as late onset neonatal sepsis (Tab|e- II).

Table- II: Pattern of septicaemia (n= 50)

Type of septicaemia	Frequency	Percentage
Early onset sepsis	20	40%
Late onset sepsis	30	60%

Among 50 neonates with septicaemia , electrolyte abnormality was present in 28 (56%) cases and absent in 22 (44%) cases.

Among the electrolyte abnormalities hyponatremia was present in 3 (6%) neonates, hypernatremia in 6 (12%) hypokalemia in 3 (6%) hyperkalemia in 10 (20%) and mixed abnormality in 6 (12%) case.

Neonates with dyselectrolytemia were found significantly associated with prolonged hospital stay in comparison to those with normal electrolytes level. Hyponatremia, Hypokalemia, Hypernatremia and mixed electrolyte abnormalities were significantly associated with prolonged hospital stay. But hyperkalemia was not found significantly associated with prolonged hospital stay (Table- III).

Table-III: Relation between electrolyte abnormality and hospital stay (Days)

Type of dyslectrolytemia		Mean+/-SD (Days)
Dyselectrolytemia	Present	10.86 days
	Absent	5.37 days
Hyponatremia	Present	12.38 days
	Absent	5.46 days
Hypernatremia	Present	11.92 days
	Absent	5.94 days
Hypokalemia	Present	12.71 days
	Absent	5.68 days
Hyperkalemia	Present	9.00 days
	Absent	5.29 days
Mixed	Present	21.56 days
	Absent	5.93 days

Among the neonates with septicemia having electrolyte abnormality 3 (10.71%) died and those who had no electrolyte abnormality no (0%) death.

Table- IV: Outcome of neonates with septicemia having electrolyte abnormality.

		Survived	Died
Dyselectrolytemia	Present (n= 28)	25 (89.28%)	3 (10.71%)
	Absent (n= 22)	22 (100%)	0(0%)

Hypernatremia was associated with mortality. Hyponatremia, Hyperkalemia and Hypokalemia were not found associatied with mortality (Table-V).

Table- V: Outcome of neonates with septicaemia with different types of electrolyte abnormality.

Type of dyselectrolytemia		Survived	Died
Hyponatremia	Present (n=3)	3 (100%)	0 (0%)
	Absent (n= 47)	14 (100%)	0 (0%)
Hypernatremia	Present (n= 6)	3 (50%)	3 (50%)
	Absent (n= 44)	44 (100%)	0 (0%)
Hypokalemia	Present (n= 3)	3 (100%)	0 (0%)
	Absent (n= 47)	47 (100%)	0 (0%)
Hyperkalemia	Present (n= 10)	10 (100%)	0 (0%)
	Absent (n= 40)	40(100%)	0 (0%)
Mixed	Present (n= 6)	6 (100%)	0 (0%)
	Absent (n= 44)	44 (100%)	0 (0%)

Discussion

ln this study an attempt was made to find out the frequency and pattern of electrolyte abnormalities in neonates with septicaemia and their impact on morbidity and mortality of neonates.

Electrolyte abnormality is a common complication in critically ill neonates. In the present study among the 50 neonates with septicaemia electrolyte abnormalities were observed in 28 (56%) of neonates which close to the findings of Hossain MM (65.6%)[6]. But Rao SDS observed electrolyte abnormalities in 32.45% of neonates.[7] This difference was probably due to inclusion of asphyxiated neonates in that study.

Hyponatremia in present study, is found in 3 (6%) patients. These findings are in contrast to those by Hossain MM and Rao SDS who found hyponatremia in 16.6% and 9.5% cases respectively.[6,7] They found that hyponatremia was the second most common electrolyte abnormality.

ln the present study, hyponatremia was found associated with prolonged hospital stay when compared to those with normal sodium level. A significantly prolonged hospital stay was also observed by Hossain MM in neonates with hyponatremia when compared to those with normal sodium level[6]. Prasad SVSS and Rao SDS also observed the same result.[7,20]

ln the present study, hyponatremia was not found associated with mortality when compared to those with normal sodium level. Among the 3 patients with hyponatremia, all survived. These findings does not correlate with findings of other study. Rao SDS found that the risk of mortality was increased by 3-3.5 times in patient with hyponatremia when compared to those with normal serum sodium level[7]. Hossain MM found that the case fatality in hyponatremia was 59.6%.[6] Prasad SVSS also observed the same result.[20]

Hyperkalemia was the most common electrolyte abnormality observed in the present study. It was found in 10 (20%) patients. Hossain MM and Rao SDS also observed that hyperkalemia was the commonest electrolyte abnormality in their study. They observed hyperkalemia in 34.4% and 14.4% cases respectively.[6,7]

Singhi S observed hyperkalemia in 5.4% cases.[16] This difference may be attributed to faulty technique during blood collection. Some tissue fluid could have been mixed with the collected blood or blood drawn through a tiny needle or sometimes with difficulty by squeezing the tissue may cause haemolysis leading to falsely elevated potassium level. Besides these some study defined hyperkalemia as serum potassium level > 5.5 mEq/L7, some study defined it as serum potassium level > 6 mEq/L.[3,6] In this study hyperkalemia is defined as serum potassium level more than 5.5 mEq/L.[7,12,21]

In the present study hyperkalemia was not found associated with prolonged hospital stay and mortality when compared to those with normal potassium level . Hossain MM also found that case fatality (33.9%) in patients with hyperkalemia was lower than that in patients with normal electrolytes level.[6] This is in contrast to Rao SDS where it had been shown that hyperkalemia is associated with higher mortality.[7] This finding may be attributed to spurious hyperkalemia in patient having normal potassium level as their samples were drawn from peripheral veins and sometimes with difficulty by squeezing the tissue in the present study.

Hypokalemia was also common in sick neonates with septicaemia. It was found in 3(6%) cases in the present study. In contrast Singhi S observed 13.9%, Marudkar A observed 14.8% and Hossain MM observed 9.3% cases are hypokalemic in their studies.[6,16,25] But Rao SDS observed lower frequencies in their study. They found 3.6% cases are hypokalemic.[7]

In the present study, hypokalemia was not found association with mortality in comparison to those with normal electrolytes level with the similar underlying disease conditions. Among the 3 patients with hypokalemia , all survived. Death rate was 0%.

Hossain MM also found that the risk of mortality is significantly higher in patients with hypokalemia in comparison to those with normal electrolyte level6. The case fatality was 75%. Singhi S and Marudkar A also observed the similar results. The mortality rate was 15% and 25.6% respectively.[16,25] Hypokalemia was also associated with prolonged hospital stay when compared to those with normal electrolytes level. Hossain MM , Rao SDS, Singhi S and Marudkar A also observed the similar results.[6,7,16,25]

Hypernatremia was the second most common electrolyte abnormality observed in the present study. It is found in 6 (12%) patients. Hossain MM observed in their study that 15.2% cases were hypernatremic which was the 3rd most common electrolyte abnormality.[6] Rao et al observed hypernatremia in 4.9% of patient which was 3rd most common electrolyte abnormality.[7]

Hypernatremia was found associated with mortality in the present study. Rao SDS observed that hypernatremia was significantly associated with higher mortality and mortality rate was 33.33%.[7] Mandal AK also observed the similar results23. Hypernatremia was found associated with prolonged hospital stay in the present study. Hossain MM , Rao SDS and Mandal AK also observed the similar results.[6,7,23]

Mixed electrolytes abnormalities were also commonly found in the present study. It is found in 6(12%) patients. Rao SDS observed 7.9% and Hossain MM observed 9.9% cases were mixed electrolyte abnormalities.[7,6] The present study observed that there was no mortality in patients with mixed electrolyte abnormalities when compared to those with single electrolyte abnormality or normal electrolyte values. Among the 6 patients with mixed electrolyte abnormality, all survived. Death rate was 0%. Hossain MM observed that case fatality was 50% in mixed dyselectrolytemia.[6]

The present study also observed that the mean duration of hospital stay was also prolong in patient with mixed dyselectrolytemia when compared to those with normal electrolytes value. Similar observations were also made by Hossain MM , Rao SDS and Prasad SVSS.[6,7,20]

In the present study, among the 50 neonates with septicaemia, electrolytes abnormalities were observed in 28 (56%) cases. Among the electrolytes abnormalities hyponatremia was seen in 3 (6%) cases, hypernatremia in 6 (12%), hypokalemia in 3 (6%), hyperkalemia in 10 (20%) and mixed abnormality in 6 (12%) cases. Of these 28 patients with electrolyte imbalance 3 (10.71%) expired. Hossain MM observed in their study that among the 225 patients with electrolyte imbalance 105 (46.7%) died.[6]

Considering all other studies done in other hospitals in Dhaka the mortality and morbidity of neonates with septicaemia are much lower in this study performed in Dhaka CMH NICU. This is because early detection of patients, good lab support, well arranged barrier nursing and easy availability of all sorts of antibiotics which are the positive side of Dhaka CMH. Whereas in the other centers all the above facillities cannot be found all together.

Conclusion

Electrolyte abnormalities are common in neonates with septicaemia. We found electrolyte abnormalities in 56% cases. Hyperkalemia (20%) was the commonest abnormality followed by hypernatremia (12%) and mixed abnormalities(12%). Hypernatremia was found associated with mortality in this study. Hyponatremia, hyperkalemia, hypokalemia and mixed electrolyte abnormalities were not found associated with mortality.

Recommendation

Most often the clinical manifestations of electrolytes abnormalities merge with the underlying disease and are very difficult to diagnose clinically in neonates. So, close monitoring, a high index of suspicion and measurement of serum electrolytes is the best way to monitor body's electrolytes status. Timely recognition and appropriate correction of electrolytes abnormalities are important to reduce the morbidity and mortality.

Limitations of the study

Limitations of the study included small sample size and duration of the study was short. It is a single centre study.

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Original Article

Outcome of Laparoscopic Cholecystectomy in Patients with Acute Cholecystitis: A Prospective Study on 50 Cases

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ABSTRACT

Background: Gallbladder disease is one of the common surgical problems. Before the advent of the laparoscopic cholecystectomy, open cholecystectomy was the most common elective operation for gallstone disease.

Objective: To evaluate the overall outcome of laparoscopic cholecystectomy in acute cholecystitis.

Method: It is a prospective study. From July 2007 to June 2008 i.e., for a period of one year, a total number of 50 patients admitted in Dhaka medical college hospital and Mitford hospital in whom acute cholecystitis had been diagnosed on the basis of clinical history, examination, laboratory data, ultrasonographic findings. Patients were selected irrespective of their age and sex.

Results: Patients were selected irrespective of their age and sex. Patients with obstructive jaundice,cholangitis and chronic cholecystitis were excluded from this study. All patients had acute cholecystitis diagnosed clinically and by ultrasonogram were operated by standard laparoscopic procedure. In two patients procedure could not be continued, one due to dense adhesion and another due to large stone in CBD not detected by ultrasonogram.Rest of 48 patients were operated laparoscopically. Fourteen patients came after 7 days from the onset of acute attack and 2 of them underwent conversion to open procedure. More or less peroperative problems were faced in almost all patients which were managed efficiently, which resulted in less postoperative complication in 9 patients. Average operation time were 47.4 min., hospital stay were 3.4 days and average time to resume normal activity was 7 days,There was no mortality.Careful approach with patience is required for early laparoscopic method of treatment in patients with acute cholecystitis.

Conclusion: Laparoscopic cholecystectomy for acute cholecystitis during the index admission is safe, preferably within 7 days. This avoids the problems of failed conservative treatment,delayed surgery and premature readmission while waiting for elective surgery.This policy can also result in an overall shorter hospitalization and economic benefit.

Keywords: Laparoscopic Cholecystectomy, Acute Cholecystitis

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Introduction

Gallbladder disease is one of the common surgical problems. Before the advent of the laparoscopic cholecystectomy, open cholecystectomy was the most common elective operation for gallstone disease.

Carl Langenbuch performed the first open cholecystectomy in 1882, since then this technique had remained the 'gold standard' for the treatment of symptomatic cholelithiasis and acute cholecystitis for more than 100 years. Laparoscopic cholecystectomy was first accomplished in July 1987 by a French Gynaecologist named Philipe Mouret in Lyons. Since then, laparoscopic cholecystectomy has been established as the treatment of choice for patients with symptomatic gallbladder diseases.[1] In our country, laparoscopic cholecystectomy was first introduced in 1991 at BIRDEM and former IPGMR by a group of surgeons led by Professor

Hashimoto of Japan. Since then it has gained its wide acceptance in our country and is practiced in almost all medical college hospital of Bangladesh and many private clinics in Dhaka city as well as other parts of the country.[2]

The introduction of laparoscopic cholecystectomy in 1988 was followed by a dramatic shift from open cholecystectomy to the laparoscopic approach. The benefits of laparoscopic surgery include reduced postoperative morbidity and pain, shortened hospitalization, quicker return to a normal lifestyle and lower overall health care expenses.[3]

Acute cholecystitis was initially considered a contraindication for laparoscopic cholecystectomy, but today the laparoscopic route is generally used even for severe acute cholecystitis.[4]

Laparoscopic cholecystectomy has been established as the treatment of choice for the management of acute cholecystitis, despite initial reservations, regarding the impact of this policy on the conversion rate and morbidity.[5]

Conversion from laparoscopic cholecystectomy to open cholecystectomy leads to the loss of the advantages of this minimally invasive procedure and significantly increases length of stay and hospital expenses. The conversion from laparoscopic to open cholecystectomy is more frequent among patients with acute cholecystitis, male patients and in elderly patients.[1,3] But there is no significant difference in the complication rate or the conversion rate in regard to the time when the laparoscopic cholecystectomy is performed during acute cholecystitis versus performed 6 to 12 weeks after the symptoms settle.[6] The appropriate timing for laparoscopic cholecystectomy in the treatment of acute cholecystitis is a matter of debate.[4,7] Common reason for conversion to open operation are severe inflammation that obscured the anatomy around the calot's triangle and inability to identify cystic duct, uncontrolled bleeding, dense adhesion,common bile duct injury, bile duct stone, perforated and gangrenous gallbladder.[1,8,9,10,11,12,13]

Currently, the conversion rates among those with acute cholecystitis is 18-50%, but the conversion rates may be as low as 4.3%.[3,10] In conclusion, with improvement in instruments, technique and efficiency of the surgeon, acute cholecystitis is no longer considered a contraindication for the laparoscopic approach. So, early laparoscopic cholecystectomy is safe and feasible for acute cholecystitis with the additional benefits of faster recovery, shorter total hospital stay and health care expenses.[14,15,16]

Acute cholecystitis is a common surgical problem. The traditional approach of management of acute cholecystitis in initial conservative treatment followed by delayed or interval laparoscopic cholecystectomy after 6-12 weeks. This policy sometimes lead to failure of conservative treatment, premature re-admission with a further attack while waiting for elective cholecystectomy, patient defaulting after discharge, increase total hospital stay and cost.[5,8] Presently, in the united States, the professional consensus is that, early operation is the treatment of choice for the same reason.[7] Several international studies have proved the benefits of early surgery, including faster recovery, shorter total hospital stay and reduce heath care expenses.[14-16] But there are very

few studies regarding this topic in our country. So it is utmost necessary to determine the overall outcome of laparoscopic cholecystectomy in acute cholecystitis specially complication and conversion rate and also the optimum time of operation after acute attack to reduce the complication and conversion rate among Bangladeshi people to adopt this policy routinely in our country. For this reason, this topic demand further study.

Aims And Objectives

Acute cholecystitis was previously considered to be a contraindication to laparoscopic cholecystectomy. This initial reluctance has slowly evaporated as the level of experience within the surgical community has increased.

In our country, laparoscopic management of gallbladder diseases are still mainly confined to the cases of chronic cholecystitis and the gallstone diseases, where interval laparoscopic cholecystectomy is done. Only a few centers practice "early laparoscopic cholecystectomy" in acute cholecystitis with fairly good result in comparison to open cholecystectomy.
So the objectives of this study were-

A.General objective:

To evaluate the overall outcome of laparoscopic cholecystectomy in acute cholecystitis.

B. Specific objectives:

1. To study the proportion of conversion into an open cholecystectomy in patients with acute cholecystitis.

2. To identify the cause of conversion into an open cholecystectomy in patients with acute cholecystitis.

3. To find out the optimum time for laparoscopic cholecystectomy in acute cholecystitis from the onset of acute attack.

4. To categorise the difficulties encountered during operation and their technical solution.

Method

Acute cholecystitis is inflammation of the gallbladder characterized by pain and tenderness in the upper quadrant of abdomen, fever, nausea, vomiting, leukocytosis and positive sonographic findings like thickened gallbladder wall and pericholecystic fluid collection.
It was a prospective study. From July 2007 to June 2008 i.e., for a period of one year, a total number of 50 patients admitted in Dhaka medical college hospital and Mitford hospital in whom acute cholecystitis had been diagnosed on the basis of clinical history, examination, laboratory data, ultrasonographic findings. Patients were selected irrespective of their age and sex.

Patients with severe concomitant disease,suspected CBD stone with history suggestive of obstructive jaundice of any

cause, cholangitis and chronic cholecystitis were excluded from this study. Detailed clinical history regarding their present and past attack (if any) including routine and special investigations as a preoperative requirement were recorded. All operations were done under general anaesthesia by laparoscopic procedure and total operation time on each case noted.Various peroperative difficulties were encountered that were overcomed by adopting suitable technique and conversion to open procedure with their reason were also noted. Post-operative course and complications, if any, and overall outcome of the study were recorded.

After collection of data, a detailed analysis of the various aspects of laparoscopic cholecystectomy in acute cholecystitis were made.

Results

This study represents the experiences with 50 patients suffered from acute cholecystitis who were admitted in Dhaka medical college hospital and Mitford hospital from July 2007 to June 2008. All the patients underwent standerd 4 ports laparoscopic cholecystectomy by experienced surgical teams. Most of the patients were operated within 3-7 days of acute attack with a few cases after 7 days. Among these 2 patients were converted to open cholecystectomy. Reason for conversion were stone in the common bile duct and marked dense adhesions in the area of calot's triangle that obscure the biliary anatomy as a results of delayed admission (more than 7 days) after the onset of acute attack.

After admission all the patients had initial management for acute attack, followed by "Early Laparoscopic Cholecystectomy". All the specimens of removed gallbladder were sent for histopathological examination and patients with histopathological features of acute cholecystitis were taken for this study.

Operation time was from 30-90 min with an average of 45 min. Difficulties were encountered during these laparoscopic procedures. Most of these difficulties were managed successfully by adopting suitable techniques mentioned below.

Difficulties and their solution are given below-

Difficulties	Solution
Gallbladder is distended.	Aspiration of gallbladder.
Difficulty in grasping	Use of a long jaw grasper.
If dissection is difficult at the calot's triangle	Use of gauze piece and use of sucker tube
If difficulty in exposure	Adhesiolysis Use of a additional port for a fan retracter
If cystic duct is wide and oedematous.	Use of intracorporeal tie.
Difficulty in identifying cystic duct.	Posteriorquadrangular and anteromedial dissection. Gallbladder to cystic duct dissection.
Stone impacted in the cystic duct.	Stone may be pushed in the gall bladder.
Extremely adherent posterior wall	Leaving behind posterior wall after cauterizing the mucosa.
Difficulty in identification of CBD or cystic duct.	If it looks wide and continuous from behind the duodenum, then probably it is CBD
Dense adhesion of the infundibulum with CBD.	Partial amputation of gallbladder to save CBD.
Oozing from the liver bed.	Diathermy coagulation Application of absorbable gelatin sponge in the liver bed & keeping a drain in situ.

Table-1. Distribution of patients by sex (n=50)

Sex	Number of Patients	Percentage (%)
Female	34	68
Male	16	32
Total	50	100

Table-1 shows of the total 50 cases, 34 were female and 16 were male patients. Hence Female: Male ratio was 2.12:1 Females were two times more likely to suffer from cholecystitis than the males.
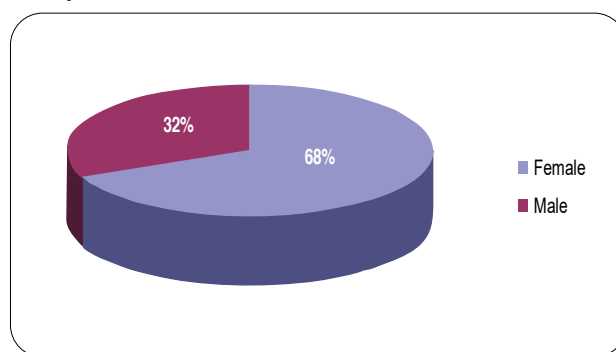
Fig.1-Pie chart: Showing distribution of patients by sex

Table-2. Distribution of patients by age (n=50)

Age (Years)	Number of Patients	Percentage
21-30	09 (M-2,F-7)	18
31-40	19 (M-4,F-15)	38
41-50	12(M-5, F-7)	24
51-60	07(M-3,F-4)	14
61-70	01(M-1,F-0)	02
> 70	02 (M-1,F-1)	04
Total	50(M-16, F-34)	100

Table-2 shows that age of cholecystitis patients varied from 24-75 years. The youngest patient was a 24 year old unmarried girl and the oldest were 75 years a old man and a woman. Highest incidence was in the 3rd decade (38 percent).
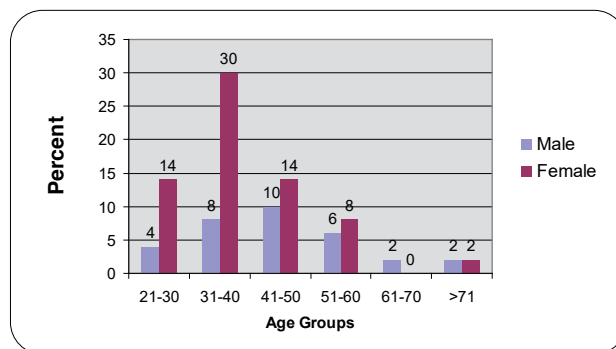

Fig.2-Bar diagram: Showing distribution of patients by age

Table-3. Clinical presentation of patients (n=50)

Symptoms / Signs	Number of Patients	Percentage
Pain in the right hypochondrium	50	100
Nausea / vomiting	30	60
Radiation of pain	26	52
History of flatulence dyspepsia	42	84
Past history of acute attack	32	64
History of jaundice	0	0
Palpable gallbladder	12	24
Murphy's sign positive	50	100
Fever	46	92

Table-3 shows that all the patients presented with pain in the right hypochondrium. Most of them had nausea/ vomiting (30 patients), with history of flatulence dyspepsia (42 Patients) and positive Murphy's sign (50 patients). Twenty-six patients showed radiation of pain to right infrascapular or interscapular region. Allmost all (46) patients had raised temperature without any rigor. Gallbladder could be palpated in 12 cases. Past history of acute attack was found in 32 patients. No patients gave any past history of jaundice.

Table-4.Time elapsed between the onset of acute attack and operation (n=50)

Time in days	Number of patients	Percentage (%)
Within 3 days	08	16
4days - 7days	28	56
>7 days	14	28

Table-4 shows in most of the patients (36 patients) operation was done within 2-7 days. In 14 patients operation was done after 7 days with not so poor result. Two of them needed conversion to open cholecystectomy.

Table-5. Associated medical diseases (n=50)

Diseases	Number of patients	Percentage (%)
Diabetes mellitus	16	32
Hypertension	13	26
COPD	02	04
IHD	03	06

Table-5 shows that 16 patients had associated diabetes mellitus, 13 had hypertension among which 5 patients had also diabetes and 03 patients had ischemic heart disease among which one patient had also diabetes. Only 2 Patients had chronic obstructive pulmonary diseases with no diabetes and hypertension. So 10 patients had only diabetes, 5 patients had both diabetes and hypertension, one patient had both hypertension and IHD.

Table-6. Past History of abdominal surgery (n=50)

Location	Number of patients	Percentage (%)
Upper abdomen	0	0
Lower abdonen	08	16

Table-6 shows among 50 patients 8 had past history of lower abdominal surgery. All are female and surgery were caesarean section and abdominal hysterectomy.

Table-7. Leukocytes count in patients with acute cholecystitis(n=50)

Leukocytes count	No.of patients	Percentage
7000-11000/cmm	08	16
11000-15000/cmm	37	74
>15000/cmm	05	10

Table-7 shows most of the patients(37) had leukocytes count between 11000-15000/cmm.Five patients showed leukocytes count more than 15000/cmm.Eight patients had leukocytes count less than 11000/cmm.

Table-8. Ultrasonographic (USG) findings of the patients (n=50)

USG findings	Number of patients	Percentage
Stone in the gallbladder	50	100
Gallbladder distended	48	96
Gallbladder wall thickened	50	100
Pericholecystic oedema	40	80
Dilated CBD or CBD stone	00	00

Ultrasonographic findings (Table-8) shows that all the 50 patients had features of acute cholecystitis i.e. distended tense gallbladder with oedematous wall.Most of the patients(40) had pericholecystic oedema. In all patients had stones in the gallbladder. Twenty one patients had single stone. None of them had dilated biliary tree or stone in common bile duct.

Table-9. Laparoscopic findings during operation in patients (n=50)

Laparoscopic findings		No. of Patients	Percentage
ADHESIONS	No	21	42
	Mild to moderate	15	30
	Severe	14	28
THICK WALLED GALL BLADDER	Mildly oedematous	18	36
	Severe oedematous gallbladder	32	64
STONE IMPACTED	Infundibulum	35	70
	Cystic duct	10	20
CYSTIC DUCT	Short and wide	04	08
COMMON BILE DUCT	Looked normal calibre	49	98
	Could not be visualised	00	00
	Stone within CBD	01	02

Laparoscopic findings (Table-9) reveal that all the patients had inflammed oedematous gallbladder. Eighteen patients (36%) had mildly oedematous gallbladder but rest 32 patients (64%) had moderate to severe oedematous gallbladder. Twenty one (42%) patients showed no adhesion around gallbladder but 15 (30%) patients had mild to moderate and 14 (28%) had severe adhesions. Thirty five patients (70%)

had impacted stone in the infundibulum and 10 patients had stone in the cystic duct. Four patients showed some variation in width and short of their cystic duct. Forty nine patients (98%) had normal calibre common bile duct and one patient had stone inside.

Table-10. Peroperative problems & complications in patients

Problems encounterd	Number of Patients	Percentage
Large distended gallbladder (Aspirated)	40	80
Difficult to find plane of dissection	08	16
Gallbladder wall gangrenous	02	04
Short and wide cystic duct	04	08
Perforation/rupture of gallbladder-spillage of bile or stone (careful pickup by forceps)	06	12
Too big stone (enlargement of epigastric port	02	04
Difficult to extract the gallbladder through epigastric port	05	10
Excessive oozing from liver bed	11	22
Marked adhesion (conversion)	01	02
Large stone in CBD (conversion)	01	02

Table-10 shows various peroperative problems. Most of the gallbladder (40 patients) were found to be oedematous and distended which were difficult to grasp by the forcep without beforehand aspiration. In 8 patients it was difficult to find plane of dissection. That is the 1 of those 14 patients who were operated 7 days after the acute attack and who also showed severe adhesions. It was tried (for 25-30 minutes) laparoscopically initially but ultimately conversion to open cholecystectomy was needed in that one patient. One patient had large stone in common bile duct that was converted to open operation. After exploration of CBD, stone was removed and irrigation was done. CBD was closed but no T-tube was given. Perforation / rupture of gallbldder (in 6 patient mostly who had large distended gallbladder) during dissection was another problem. Four patients showed short and wide cystic duct. These cystic ducts were ligated by intracorporeal tie. Three patient had fragile gallbladder. Two patients had too big stone that required enlargement of the epigastric port during extraction of gallbladder. Eleven patients with excessive oozing from the gallbladder bed were managed by application of absorbable gelatin sponge and keeping drain in situ. Five patients with difficulty to extract gallbladder needed enlargement of epigastric port. Two patient had gangrenous gallbladder wall.

Table-11. Drain used in patients with successful laparoscopic surgery (n=27)

Drain	Number of patients	Percentage
Used	27	54
Not used	23	46

Table-11 shows not all the patients were given drain. In 27 patients subhepatic drain were placed. Two patients with perforated empyema gallbladder where wash was given and to drain out those washed material, three patients with severe

adhesions who were operated after 7 days of acute attack. Eleven patients with excessive oozings from liver bed that were not completely controlled by diathermy coagulation and application of absorbable gelatin sponge, sub-hepatic drain were given also. These patients showed blood stained serous fluid of about 50-70 ml, which persisted for 24-48 hours.None of them showed bile stained fluid in drain tube.

Table-12. Postoperative problems & complications (n=9)

Problemsand complications	Number of patients	Percentage
Severe vomiting / right hypochondriac pain	05	10
Wound sepsis (Obese patients)	02	04
Decreased pulmonary function and mild chest infection	02	04

Table-12 shows Only 9 patients had some degree of postoperative problems / complications. Vomiting and right hypochondriac pain (in 5 patients) found most commoly. Wound sepsis 2 patients and chest infection developed in 2 patients with COPD and old age.

Table-13. Operative time (in minutes) in laparoscopic cholecystectomy (n=48)

Number of cases	Range (min)	Mean (min)	Median (min)
48	30-90	47.4	50

Table-13 shows that operative time required from 30-90 minutes with a mean of 47.4 and median of 50 minutes with a homogeneous distribution. Patients with severe adhesions required more time to perform the laparoscopic procedure. In two patients the procedure failed and hence open method were adopted after initial trying for 25-30 minutes laparoscopically.

Table-14. Average hospital stay (n=50)

Range (days)	Mean (days)	Median (days)
01-10	3.4	4

Table-14 Most of the patiets were stayed for about 1 day Twelve patients who had subhepatice darin and who developed post operative complication stayed for about 2-4 days. Only 2 patients (who had conversion) were dischaged on 10th postoperative day.

Table-15. Causes of conversion (n=50)

Reasons for Coversion	Number of patients	Percentage
Severe dense adhesions	01	02
Stone in common bile duct	01	02

Table-15 shows fourteen patients had severe adhesions. Among these 14 patients 1 patients required conversion to open cholecystectomy. But they were first tried laparoscopically for initial 25-30 minutes before going for conversion. One patient had a large stone in common bile duct that was converted.

Table-16. Outcome of the patients undergone for laparoscopic cholecystectomy (n=50)

Parameters	Number of Patients	Percentage
Uneventful	50	100
Mortality	Nil	Nil
Re-exploration	Nil	Nil

Table-16 shows fifty patients (100%) recovered uneventfully with few minor complications in some. No patients had to undergo re-exploration and mortality was nil.

Table-17. Ambulatory time after operation (n=50)

Range (hours)	Mean (hours)
10-24	12

Table-17 shows most of the patients were ambulatory after 12 hours. A few patients were ambulatory after 24 hours. They were mostly the aged, obese persons who also complained of severe post -operative pain. In addition two patients of conversion were also ambulatory after 24 hours.

Table-18. Resumption of usual work after operation (in days)

Range (days)	Mean (days)
5-12	7

Table-18 shows that patients returned to their normal activity very fast (range 5- 12 days, mean 7 days).

Discussion

Gallbladder disease in one of the common surgical problems. Before the advent of the laparoscopic cholecystectomy, open cholecystectomy was the most common elective operation for gallstone disease. Carl Langenbuch performed the first open cholecystectomy in 1882, since then it had remained the " gold standard" for treatment of symptomatic gallstone and acute cholecystitis for more than 100 years.

Acute cholecystitis was regarded as a relative contraindication to laparoscopic cholecystectomy in the early years of laparoscopic surgery. Because in the developmental stage of laparoscopic cholecystectomy it was considered ' unsafe' or 'technically difficult' to perform laparoscopic cholecystectomy for acute cholecystitis.[14] This initial reluctance has slowly evaporated as the level of experience within the surgical community has increased.
In this study, our aim was to study the cause and proportion of conversion of laparoscopic cholecystectomy to open operation, to find out the optimum time for laparoscopic cholecystectomy in acute cholecystitis from the onset of acute attack, to assess the difficulties encountered during operation and technical solution to those.

This study was carried out to prepare a dissertation in partial fulfilment of the requirement of FCPS part-11 (Surgery) examination. It includes 50 cases of acute cholecystitis subjected to surgery. The result of this study has statistical value with other results published in various international journals.

In this series, 50 cases admitted in Dhaka medical college hospital and Mitford hospital with symptoms of acute cholecystitis during the period of July' 2007 to June' 2008. Both female and male cases were studied randomly of which 34 were female and 16 male.

Out of 50 case all of them had calculus variety. The incidence of acute cholecystitis (calculus) is higher in female, with female to male ratio of 3:1 upto about 50 years of age, ratio decreases (1.5:1) thereafter.[31] But in this series female to male ratio was 2.12:1 [Table -1]

A fat, fertile, flatulent, female of forty is the classical sufferer from symptomatic gallstone disease. In this series 9 patients were between 21-30 years of age, 19 patients were 31-40 years of age, 12 patients were 41-50 years of age and 7 patients were in between 51-60 years of age, one patients was 61-70 years of age and 2 patients were 75 years. Highest age group was in the 3rd decade (38%) [Table-2]

In this study all patients had right hypochondriac pain with nausea and vomiting about 60%. There was history of flatulent dyspepsia in about 84% of patients and 64% of them had past history of acute attack. Murphy's sign was positive in all patients but none of them had history of jaundice. Fever was present in 92% of patients [Table-3].

All patients were operated with the history of acute attack but the duration of acute attack before operation was varied. It was less than 3days in 8 patents, within 3-7 days in 28 patients and more than 7days in 14 patents [Table-4] Only a small number of patients with acute cholecystitis are managed surgically within the "Gold window" of 72 hours from the onset of symptoms. If the remaining majority of patients with acute cholecystitis are managed conservatively with interval cholecystectomy to follow, then an increased total hospitalization and subsequently increased cost could be expected.[5] So early laparoscopic cholecystectomy was adopted rather than interval with consequent reduction in patient anxiety, total hospital stay and cost.

On the other hand, interval cholecystectomy has several disadvantages, which include:
a) Failure of conservative treatment in 13%
b) Premature re-admission with a further attack while waiting for elective cholecystectomy 13%
c) Patient defaulting after discharge 10% [5,8,32]
Waiting for gallbladder to "cool down" allows maturation of acute inflammation, neovasculaturization, fibrosis and contraction, making the dissection more difficult.[5]

Moreover, now Laparoscopic Cholecystectomy is not a learning phase in our country. So several institutes has now adopted the policy of early laparoscopic cholecystectomy in acute stage, not delayed or interval. Presently, in the United States, the professional consensus is that early operation is the treatment of choice because delayed surgery carries a risk of failure of conservative treatment, recurrent symptoms or acute cholecystitis while waiting for operation and a longer

overall hospital stay and greater overall costs.[7]

In this study, 16 patients had diabetes mellitus, 13 patients had hypertension among which 5 patients had also diabetes and 3 patients had ischaemic heart disease among which one patient had also diabetes. Only 2 patients had chronic obstructive pulmonary disease with no diabetes and hypertension.Patients with IHD were further evaluated by ecocardiography [Table-5].

In this series no patients had previous history of upper abdominal surgery though past history of such operation is a relative contraindication of such surgery but technical skill which has now developed in surgical community, eliminated this contraindication. Eight of them had lower abdominal surgery [Table-6], all were caesarean section and abdominal hysterectomy and no problem was encountered in doing laparoscopic cholecystectomy on those patients.

In this study ultrasonographic findings in all patients had features of acute cholecystitis i.e., distended tense gallbladder with oedematous wall. Maximum patients had multiple stone. No patient was found to have dilated biliary tree or stone in CBD   [Table-8]. All of them had normal liver function test. OCG was not done in any patients.

All patients were operated under general anaesthesia adopting the more popular American approach with a standard 4-port technique. In this study with few exception, ultrasonographic findings were more or less consistent with the laparoscopic findings. Laparoscopic finding revealed [Table-9] that 21 patients (42%) had no adhesion around gallbladder area but 15 patients (30%) had mild to moderate and 14 patients (28%) had severe adhesion which were not mentioned in ultrasonography . All patients had mild to severe form of wall thickening due to oedema. Four patients had short and wide cystic duct. No problem was encountered in clipping the cystic duct but some degree of difficulty arose during closure of short and wide variety of cystic duct and ultimately dealt with intracorporeal catgut tie.Unfortunately some patient had tear of gallbladder because of fragile wall and were treated instantaneously by suction from the gallbladder and nearby area followed by normal saline washout and placement of a drain. Except one all patient had normal CBD but that one had large stone in CBD that was not detected by ultrasonography and it was converted to open cholecystectomy Pre-operatively undiagnosed CBD stone are found in 2.3%-3.5% intraoperatively. Large stones, amenable neither by the trans-cystic approach nor by ERCP, might be treated by open bile duct exploration.[1]

It was mentioned earlier that 2 patients were converted to open cholecystectomy after initial 25-30 min laparoscopic try. These two patients were male and admitted after 7 days of acute attack.One patient due to dense adhesion, which obscured the biliary anatomy and made the calot's triangle dissection more difficult. In this case considering the safety of the CBD and as a whole for the patient conversion was done. In another patient conversion was done due to presence of large stone in CBD that was not detected by ultrasonography. After exploration of CBD, stone was removed and irrigation was done. CBD was closed but no T-tube was given. In study of W.K.Peng et al, out of 78 patients 15 were

converted.Thirteen of the 15 were converted due to severe inflammation that obscured the anatomy around calot's triangle. One patient was converted due to bile duct stones and another due to uncontrolled bleeding.[8] So it is very much important to get a good ultrasonography report regarding the anatomy of CBD. The safety of laparoscopic cholecystectomy for acute cholecystitis is mainly reliant on the surgeon's technical competency and sound clinical judgement to convert to an open procedure should adequatc exposure not be obtained through the laparoscopic technique.[16] Decision to convert should not be considered as a complication, as the overall successful and safe completion of the operation is the ultimate goal.[8]

In addition to the most common problem of (Table- 9) mild to severe adhesions, some other peroperative difficulties were encountered in almost all cases of acute cholecystitis, which are mentioned in page 39 with their solution. In case of fragile gallbladder use of improvised surgical gloves as a retrieval bag facilitated the removal of gallbladder. To prevent accumulation of blood after surgery and to wash out those blood and washed material a subhepatic drain was given in 27 patients [Table-11]. Blunt dissection by gauze piece and also by sucker tube done to facilitate calot's dissection as well as sucking fluid. Adhesiolysis (26 patients) was done by dissector. Grasping the distended gallbladder was facilitated by aspiration (40 patients) of the contents of the gallbladder and use of a long jaw grasper. Removal of very big stone (2 patients) and removal of very thickened oedematous gallbladder (5 patients) required enlargement of epigastric port. Excessive oozing from the liver bed (11 patients) was controlled by diathermy coagulation and by application of absorbable gelatin sponge (Table-10).

Not all patients were given drain. In 27 patients subhepatic drain [Table-11] was placed. Two patients with perforated empyema gallbladder where wash was given and drain out those washed materials, eleven patients with excessive oozing from liver bed that were not completely controlled by diathermy and application of gelatin sponge and three patients with severe adhesion who were operated after 7days of acute attack were given subhepatic drain, These patients showed blood stained serous fluid of about 50-70 ml., which persisted for 24-48 hours. None of them showed bile stained fluid in drain tube.

In all cases after removal of gallbladder the interior of the gallbladder were examined macroscopically. Except one all of the gallbladder showed features of acute cholecystitis i.e mucosal ulceration, pus, thickened oedematous wall but one specimen showed in addition to above feature, a tiny soft tissue mass neat the neck at gallbladder which was an old female of 75 years age. Histopathology of all specimen showed features of acute cholecystitis but that one revealed adenocarcinoma and that patient was referred to oncologist. Postoperative complications were also negligible. Only 9 patients had some degree of postoperative problems or complications in the form of vomiting (5 patients), would sepsis (2 patients), mild chest infection (2 patients).Vomiting was controlled by antiemetics, 2 patients had umbilical port infection which were healed by regular dressing and antibiotics. Mild chest infection developed in only 2 patients who were recovered by chest physiotherapy and other

measures. There was no other major postoperative complication. In study of M.M. Sayed, 2 patients developed biliary peritonitis- one due to duodenal injury and other due to slippage of clip from the cystic duct for which re-exploration was done.[2] In this study there was no such complications. Different studies show that common postoperative complication after laparoscopic cholecystectomy are wound infection, subphrenic collection, bile leakage, chest infection, undetected CBD stone.[5,8,14,16]

In this study no bile duct injury was occured. In Khan's study, out of 100 cases common bile duct injury was occured in one case (1%) that required conversion.[21] In study of Lo et al, CBD injury was 2.4%. The incidence of CBD injuries 1.3%-5.5% had been reported in several series.[1]

Mean time required for laparoscopic cholecystectomy on this series i.e on patients with acute cholecystitis were 47.4 min. which range from 30-90 min. [Table-13] Duration of operation time varied directly with the duration of acute attack. Earlier the operation from the onset of attacks less the time required for it. Because during the early stages of acute inflammation, edematous connective tissues facilitate the dissection of calot's triangle.[7]

In this study 8 patients out of 50 were operated within 3days of their onset of attack and time required for them 30-45 min, 28 patients who came within 4-7 days required 40-60 min, 14 patients came after 7days, 12 of them were treated laparoscopically required 45-90 min. and 2 patients were converted [Table-4].

In study of George Tzavaras et al, the operative time for this 3 groups of patients were 35-90 min, 25-120 min and 35-120 min respectively.[5] So in comparison to their report our result is better regarding operative time.

In this study mean total hospital stay [Table-14] for laparoscopic cholecystectomy on acute cases were 3.4 days, ranges from 1-10 days. Most of the patients were stayed for about 1 day. 12 patients (who had subhepatic drain and who developed postoperative complication) were stayed for about 2-4 days. Two patietns that were converted were stayed for 10 days.In study of Johansson et al,mean total hospital stay were 5 days.[1,7] In study of Maitra, mean total hospital stay were 6.5 days ranges from 3-10 days.[17] So in comparison to his report our result is better regarding total hospital stay.

In this study the conversion rate were 4%. Currently, the conversion rates among those with acute cholecystitis is 18-50%, but the conversion rates may be as low as 4.3% in acute cholecystitis.[3,10] In study of Maitra, the conversion rate were 9%.17 Several recent studies confirm the safety of early laparoscopic approach to acute cholecystitis. They show slightly higher conversion rate to open cholecystectomy but there are no significant difference in morbidity and conversion rate whether the laparoscopic cholecystectomy was performed in early cases or after 6-12 weeks later. [1,7,9,10,15]

This finding raises the following question. Is there a critical time after the onset of acute attack within which early laparoscopic cholecystectomy should be performed?

George Tzovaras et al, showed that the conversion rate slightly increases when operation performed after 7 days of acute attack. Their conversion rate were 2.8%, 3.4% and 8.5% when operation was done within 3 days, within 4-7 days and after 7 days respectively.[5] On the other hand several recent studies showed that conversion rate rather decreases when early laparoscopic cholecystectomy was performed within 48 hours or 72 hours after acute attack than performed electively after 6-12 weeks.[7,8,14,16] In our study, 8 patients were operated within 3 days and 28 patients were operated within 4-7 days of acute attack but none of them required conversion, 14 patients were operated after 7 days of acute attack, two of them required conversion to open procedure. Fifty patients (100%) recovered uneventfully with few minor complications in some. No patients had to undergo re-exploration and mortality was nil. This is the advantages of early laparoscopic cholecystectomy on acute cholecystitis patients that confers much shorter hospital stay (mean 3.4 days), early resumption of usual work (7 days), early resumption to oral feeding (9 hours), much reduced postoperative pain with early mobility, almost invisible scar and reduced health care expenses.

Conclusion

In our study, 8 patients were operated within 3 days and 28 patients were operated within 4-7 days of acute attack but none of them required conversion, 14 patients were operated after 7 days of acute attack, two of them required conversion to open procedure.

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Original Article

Job Satisfaction Among Paramedics Working in Selected NGOs in Bangladesh

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ABSTRACT

Background: For an organization, job satisfaction of its workers are necessary to have a work force that is motivated and committed to high quality performance.

Increased productivity, the quantity and quality of output per hour workload seems to be a byproduct of improved quality of working life.

Objectives: The main objective of the study was to assess various aspects of job satisfaction among the paramedics in NGOs .

Methods: This prospective observational study was done in 3 healthcare providing NGOs in Dhaka City during the period of April 2011 to June 2011.

Results: About 73% of the workers had a good level of satisfaction, 27% remained dissatisfied over their current job. However 44% of them are disappointed for low payment. So, the study shows that increment in salary is the most essential step to increase paramedics job satisfaction.

Conclusion: This study tried to identify the factors in the context of Bangladesh among paramedics. The paramedic in NGOs were very much dissatisfied on salary & fringe benefits, these should be properly addressed and appropriate measures to increase paramedics job satisfaction at NGOs to urban healthcare improvement.

Key words: Job Satisfaction , Paramedics , NGOs

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Introduction

Job satisfaction has been defined as a pleasurable emotional state resulting from the appraisal of ones job[1] and an affective reaction to that.[1] According to Barrons banking dictionary "sense of intense fulfillment & pride achieved when performing a particular job; job satisfaction occurs when an employee feel she/he has accomplished some things having importance & value worthy of recognition".[2] Unhappy workers, who are motivated by fear of job loss, will not give 100 percent work stamina.[3] Many attempts have been made to identify factors, which can influence job satisfaction. Bangladesh is the seventh most populous country in the world with significant poverty rate.[4] Most of its people are a little bit poor to buy medicine. Government run health centers

lacks adequate number of health care

providing staffs. Due to workload they become tired and frustrated as they face other problems especially of lack of training opportunities for career planning. Ultimately, they try to move to the places like in NGOs where additional facilities and opportunities are available. In the light of above situation, it is now essential to evaluate factors affecting job satisfaction of paramedics in NGOs. If the factors affecting paramedics job satisfaction working in Primary health care centre at NGOs can be addressed properly, present health crisis can be dealt in a better way .

Few studies about job satisfaction among paramedics was done around globe. One study in Malaysia assessed the proportion of job satisfaction and determined its associated factors among paramedics of U29 Grade in Hospital Besut. They have found a high job satisfaction among paramedics. However, there are no significant associations between job satisfaction and socio-demographic characteristics and job factor (as age, gender, department where they work, shift work and duration of working).[5] In Israel a cross sectional study showed, dissatisfaction at work is caused by burnout, work overload, and poor health. Job satisfaction differences among gender was also studied, La Barbera et al found male PAS (physician assistants) were statistically more satisfied with their jobs than females.[6]

Kebriaei & Moteghedi showed overall job satisfaction of respondents was moderate in rural health worker at Zahedan

in Iran.[7] They were satisfied with the work itself and co-workers, but very dissatisfied with all payments and benefits.[7] Hamaideh SH et al showed mental health nurses showed high levels of emotional exhaustion in Jordan and significant correlations were found among burnout categories, job satisfaction, social support, and demographic and work-related variables.[8] In context of Bangladesh there is still very limited study of medical paramedics job satisfaction and stability in the fields of health sectors. In our study we tried to sort out the total scenario of job related satisfaction of paramedics in selected centers.

Methods and Materials: This was a descriptive type of cross sectional study conducted in selected NGOs namely Nari Maitree , Association for prevention of septic abortion , Bangladesh (BAPSA) , Dholpur Matri Sadan working in Dhaka city between January 2011 to June 2011. A total of 60 paramedics purposively selected as sample .Interviewer administered structured questionnaire were used for data

collection after taking consent. Data analysis done using Chi-square and student test was done to test the significance .Significance level was 0.05% at 95% confidence interval. Job satisfaction was assessed using Likerts scaling, which was done to assess the level of satisfaction viz. Highly satisfied scored „2 and satisfied scored
„1,no opinion or comment scored „0,dissatisfied scored „-1 and highly satisfied- 2.Based on score in each issue a score was developed ranging from -2 to+2.

Result

Among the respondents 56(93.3%) are female and 4(7%) are male . Rrespondents were very much satisfied on support staff s relation to work, place of posting , freedom associated with workload , (1.2 to 0.73) and were very much dissatisfied on salary & fringe benefits (0.07 to -0.55) - (Table – 1).

Table 1: Distribution of the respondents by level of satisfaction on job related aspects (n=60)

Level of satisfaction on different job related aspects	Highly satisfied	Satisfied	No opinion	Dissatisfied	Highly dissatisfied	Mean score
Satisfaction on support staffs relation with work load	27	67	5	1	0	1.20
Satisfaction over nature of job	13	60	18	5	4	0.73
Satisfaction on place of posting	3.3	88.3	6.6	1.6	0	0.933
Satisfaction level on freedom associated with workload	0	95	2	3	0	0.92
Satisfaction on salary & fringe benefits	3.3	8.3	31.6	43.3	13.3	-0.55
Satisfaction with kids education facilities	3	7	75	10	5	0.07
Satisfaction over accommodation facilities	0	33.5	58.5	8	0	0.255
Satisfaction 0n career development	0	41.6	33.3	25	0	0.166
Satisfaction on recognition of work accomplishm.ent	3	60	5	25	4	0.33
Satisfaction level over job security	3	62	5	23	7	0.310
Satisfaction on dignity in society	6.6	81.6	5	5	2	0.858
Satisfaction on daily workload	6.6	66.6	20	5	1.6	0.734
Satisfaction over scope of training	8.3	40	21.6	20	10	0.166
Satisfaction on opportunity to contribute to the nation	22	58	8	12	0	0.90

Data indicated that the respondents aged 30 years and above showed a little bit dissatisfaction (40.7%) whereas,

younger respondents (<20 years old) remained more satisfied than other age group on their job (75.5%) – Table -2.

Table 2: Distribution of the respondents by age & level of satisfaction

Age in years	Level of job satisfaction				Total	
	Satisfied		Dissatisfied			
	No.	%	No.	%	No	%
<20	15	60	10	40	25	41.70
20-30	11	64.7	6	35.3	17	28.30
>30	7	38.8	11	61.2	18	30.00
Total					60	100.00%

Female respondents had poor level of satisfaction (62.5%) where as the male respondents had good level of job satisfaction (75%) statistically significant (p<0.05) (Table-3).

Table 3: Distribution of the respondents by sex and level of job satisfaction

Sex	Level of job satisfaction				Total	
	Satisfied		Dissatisfied			
	No.	%	No.	%	No	%
Male	3	75	1	25	4	6.70
Female	21	37.5	35	62.5	56	93.30
Chi - square=3.99; df=1; p<0.05						

No statistically significant association was found between level of job satisfaction and respondent s monthly salary (p>0.05) – Table-4.

Table 4: Distribution of the respondents by salary & level of job satisfaction (n=60)

Salary(Tk.)	Level of job satisfaction				Total	
	Satisfied		Dissatisfied			
	No.	%	No.	%	No.	%
3000-4000	23	71.8	9	28.2	32	53.30
4000- 6000	16	66.6	8	33.4	24	40.00
6000-8000	2	50	2	50	4	6.70
Total					60	100.00

No statistically significant mean difference seen between (p>0.05) poorly satisfied respondents and good level of satisfaction regarding length of service (Table-5).

Table 5: Distribution of the respondents by length of service & level of job satisfaction (n=60)

Length of service years	Level of job satisfaction				Total	
	Satisfied		Dissatisfied			
	No.	%	No.	%	No.	%
0-1	5	71.4	2	28.6	7	11.70
2-3	27	67.5	13	32.5	40	66.60
4-5	11	84.6	2	15.4	13	21.70
Total					60	100.00

Paramedics aged >30 years are more satisfied 5(71.4%) on job security than other age group and the difference is statistically significant (p=0.001) (Table – 6).

Table 6: Distribution of the respondents' satisfaction on age vs job security (n=60)

Age (Years)	Level of satisfaction On job security				Total	
	Satisfied		Dissatisfied			
	No.	%	No.	%	No.	%
< 20	9	34.6	17	65.4	26	43.30
20-30	15	55.5	12	44.5	27	45.00
>30	5	71.4	2	28.6	7	11.70
Total					60	100.00

Graduate paramedics 6 (85.7%) and undergraduate paramedics, 33(62.2%) are satisfied with salary structure and difference is statistically significant (p<0.05) (Table-7).

Table 7: Distribution of the respondent level of satisfaction on salary structure vs. qualification (n=60)

Qualification level	Level of job satisfaction				Total	
	Satisfied		Dissatisfied			
	No.	%	No.	%	No.	%
Diploma	33	62.2	20	37.8	53	88.30
Bachelor degree	6	85.7	1	14.3	7	11.70
Total					60	100.00

Over all 73% had good level of satisfaction, 27% remained dissatisfied over their current job. It indicates that unsatisfactory salary was the main obstacle for the respondents for job dissatisfaction (31.71%) (Figure -1).
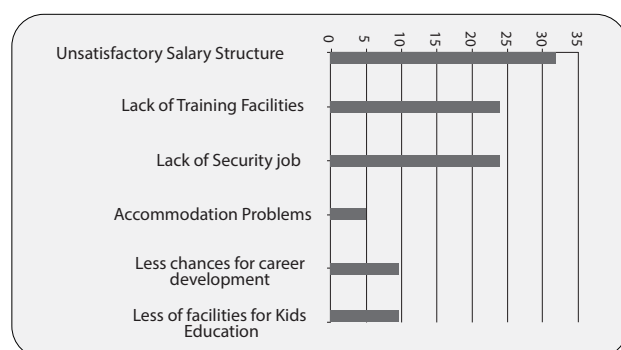
Discussion

Job satisfaction is important in everyday life beyond the research literature and studies. It is considered as a strong predictor of overall individual well- being as well as of intentions or decisions of employees to leave a job. In terms of industry it affects labor market behavior and influence work productivity, work effort, employee absenteeism and staff turnover. Recognition on work accomplishment or proper evaluation is directly related to both job satisfaction and performance. A study from Vietnam showed that motivation is influenced by both financial and non-financial incentives.[10]

In Mali; study on health sector workers showed that among the important factors recognition was next to salary. A study in Benin and Kenya revealed that among the motivating factors after recognition means and materials (job location)

was the most important factor.[11] This is consistent with a study in Vietnam that revealed that among the discouraging factors, difficult transportation stood second and respondents were satisfied with their job location as most of them were posted nearer to their home district .[12] Job security is an important psychological ingredient for job satisfaction. In our study, 62% respondents were satisfied on job security and more aged group (>30 years) were satisfied (71.4%). Similar results were found on Belgian nurses which revealed that aged staffs valued job security and working for a hospital with a good reputation higher than their younger ones.[13]

Regarding job nature of job more than half of them (60%) were satisfied. A total of 66.6% respondents were satisfied in any form on their workload, only 5% were dissatisfied upon their workload. A study was conducted in Kilimanjaro Region, Tanzania showed the primary issue that was responsible for dissatisfaction was heavy workload.[14] Gender difference in job satisfaction is also a questionable variable. A study in USA showed that male physician assistants were more satisfied with their job. Our study showed female paramedics were least satisfied which is compatible to study in the USA where male physician assistants were more satisfied.[15]

Most of the respondents were highly displeased with their salary & benefits only (8% of them were satisfied). A study in Iran revealed that most of Community health workers are very dissatisfied with their payments & benefits.[16] Paramedics are highly disappointed with accommodation facility as well as facilities for their kids education. Where as they are highly pleased over their dignity in society (82%). In the current study it was found that 27% of respondents had poor level of job satisfaction, and 73% had good level of job satisfaction.

The relationship between satisfaction and age was revealed. The mean age of dissatisfied respondents was 25.10 ± 6.3 years and for satisfied the mean age was 23.78 ± 5.1 years. Analysis found no statistically significant mean difference between the dissatisfied and satisfied group (p>0.05). Respondents aged >30 years showed a little bit good level of satisfaction whereas; younger aged respondents were poorly satisfied about the job. In a study from UK employees have demonstrate that overall job satisfaction is U-shaped in relation to age and it is generally believed that job satisfaction increases linearly with age.[17]

The relationship between length of service with level of job satisfaction was also revealed. The mean length of service for dissatisfied respondents was 2.4 ±4.01years and that satisfied was 2.19±3.01 years. But it was not statistically significant (p>0.05). Data analysis found that no statistically significant association between level of job satisfaction and respondents salary (p>0.05) There is no previous study found for such case. Statistically significant difference was observed in salary structure of paramedics by qualification (p<0.05).

Conclusion

The paramedic in NGOs were very much dissatisfied on salary & fringe benefits, job satisfaction more in male and higher age group.

Recommendation

This study it can be said that better financing is needed for employee remuneration, infrastructure, maintenance and other financial benefit of staffs with better provision for career progression.

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Original Article

Presentation, Outcome & Comorbiditis Patient of COVID-19 in Potuakhali Medical College Hospital, Potuakhali

Rahman FMA[1]

ABSTRACT

Background: The COVID-19 virulent disease is an emergency of an absolutely different magnitude and it is dispute of life threading of whole world including Bangladesh. Corona viruses are enveloped positive-sense single-stranded RNA viruses belonging to the family Coronaviridae and are broadly distributed in humans and other vertebrates, eventually causing damage in digestive, respiratory and even multiple systems.

Objective: To observe the clinical presentation and outcome of COVID-19 patients in Potuakhali Medical College Hospital.

Method: It was an observational study including consecutive samples was received the diagnosis of the COVID-19, which was performed in the Department of COVID-19 isolation unit, Potuakhali Medical College Hospital. 280 COVID-19 positive patients with mild to moderate symptoms between 20 and 70 years of age are the case. Data were collected from patients were attended the COVID-19 isolation unit. The severity of the COVID- cases was assessed based on the WHO interim guidance. Demographic and clinical data were collected by structured questionnaire and analysis was done with the help of SPSS (Statistical Package for Social Science) version-23.

Results: The majority 68(24.3%) patients belonged to age group 41-50 years with mean age was 47.6±15.3 years. Male patients were predominant 177(63.2%) whereas female 103(36.8%). Male-female ratio was 1.7:1. Majority 215(76.8%) patients had fever, 201(71.8%) patients had SOB, 80(28.6%) had score throat, 45(16.1%) had sputum, 35(12.5%) had taste loss, 27(9.6%) had smell loss, 26(9.3%) had headache, 21(7.5%) had palpitation, 18(6.4%) had vomiting, 17(6.1%) had rhinorrhoea and 13(4.6%) had diarrhea. Majority 82(29.3%) patients had hypertension, 65(23.2%) had diabetes mellitus, 25(8.9%) had ischemic heart disease, 20(7.1%) had chronic kidney disease, 15(5.4%) had bronchial asthma. Majority 244(87.2%) patients were discharged, 34(12.1%) were referred and 2(0.7%) died.

Conclusion: COVID 19 affects male more than male. Common clinical presentations were fever, SOB, score throat, sputum, taste loss, smell loss, headache, palpitation, vomiting, rhinorrhoea and diarrhea. Common comorbidites were hypertension, diabetes mellitus, ischemic heart disease, chronic kidney disease. Majority patients with mild disease and most of them were discharged, 12.1% were referred and 0.7% was mortality rate.

Key word: Clinical presentations, Outcome, COVID-19.

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Introduction

The COVID-19 pandemic is a crisis of a completely different magnitude and it is challenge of life threading of whole world including Bangladesh. Novel coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus [1] (SARS-CoV-2) began in Wuhan, China, in December 2019, and has since spread worldwide.[2] The coronavirus pandemic has infected 40,251,950 cases of COVID-19, including 1,116,131 deaths, reported to WHO. The outbreak spread from the Chinese city of Wuhan to more than 180 countries and territories affecting every continent except Antarctica.[2] In Bangladesh, from 3 January 2020 to CEST, 9 July 2021, there have been 1,000,543 confirmed cases of COVID-19 with 16,004 deaths, reported to WHO. As of 5 July 2021, a total of 10,215,638 vaccine doses have been administered.[3] Coronaviruses are enveloped positive-sense single-stranded RNA viruses belonging to the family Coronaviridae and are broadly distributed in humans

and other vertebrates, eventually causing damage in digestive, respiratory and even multiple systems.[4] The earlier clinical spectrum of COVID-19 was dominated by fever, cough, and shortness of breath.[5] Dyspnea, headache, myalgia, rhinorrhea, sore throat, nausea, and vomiting were also reported in a number of cases.[6,7] In addition to respiratory symptoms, neurological,[8] gastrointestinal,[9] cardiovascular,[10] musculoskeletal,[11] and other systematic presentations have also been reported.[6] It affects all ages, genders, and occupations, especially healthcare workers and family members, with COVID-19 positive cases.[12,13] Data up to this day have proven that higher chronological age and presence of comorbidities are the two most common underlying factors responsible for worse outcome.[14,15] Diagnosis mostly depends on clinical symptoms and signs and subsequent investigations.[16] However, there is increasing evidence that many patients with COVID-19 are asymptomatic or have fewer symptoms to be recognized. The reported prevalence of asymptomatic patients ranged from 1% to 19.2%.[17,18] Unfortunately, asymptomatic cases can transmit the virus to others, consequently acting as a silent harbor of the infection.[17] The previous reports have

shown that this virus was isolated from asymptomatic individuals, and the infections had been transmitted from asymptomatic patients.[19] Considerate features associated with COVID-19 vulnerability and adverse prognostic factors is therefore critical to guide local health authorities in their quest to assign their resources more competently and avoid over-stressing the already constrained healthcare system.

Method

It was an observational study counting consecutive samples was received the diagnosed case of the COVID-19, which was performed in the Department of COVID-19 isolation unit, Potuakhali Medical College Hospital. COVID-19 positive patients with mild to moderate symptoms between 20 and 70 years of age are the case. Data were collected from patients were attended the COVID-19 isolation unit. The severity of the COVID- cases was assessed based on the WHO interim guidance. Data were collected only from non-critical COVID-19 patients as critical patients required immediate intensive care admission making them unable to respond to the questions. Socio-demographic and clinical data were evaluated and collected by experienced clinicians using a pretested case record form. Verbal consent was taken from all participants. Demographic and clinical data were collected by structured questionnaire and analysis was done with the help of SPSS (Statistical Package for Social Science) version-23. Continuous scale data were presented as mean standard deviation and Categorical data were presented as number percentage. The summarize data were presented in the table and chart.

Results

Table 1 shows that majority 68(24.3%) patients belonged to age group 41-50 years with mean age was 47.6±15.3 years. Male patients were predominant 177(63.2%) whereas female 103(36.8%). Male-female ratio was 1.7:1. Table 2 shows that majority 215(76.8%) patients had fever, 201(71.8%) patients had SOB, 80(28.6%) had score throat, 45(16.1%) had sputum, 35(12.5%) had taste loss, 27(9.6%) had smell loss, 26(9.3%) had headache, 21(7.5%) had palpitation, 18(6.4%) had vomiting, 17(6.1%) had rhinorrhoea and 13(4.6%) had diarrhea. Table 3 shows that majority 82(29.3%) patients had hypertension, 65(23.2%) had diabetes mellitus, 25(8.9%) had ischemic heart disease, 20(7.1%) had chronic kidney disease, 15(5.4%) had bronchial asthma. Other results are depicted in the table. Table 4 shows that positive RT- PCR was found in all patients (100%), positive x-ray findings was 217(77.5%) and abnormal HR-CT chest was 278(99.3%). Figure 1 shows that majority 167(59.6%) patients with mild disease, 60(21.4%) had severe and 53(18.9%) had moderate disease. Table 5 shows that majority 244(87.2%) patients were discharged, 34(12.1%) were referred and 2(0.7%) were died. Table 6 shows that significant association was found between patients outcome with disease severity (p=0.001).

Table 1: Demographic characteristics of the study patients (n=280)

Variables	Frequency	Percentage
Age (years)		
<30	55	19.6
31-40	60	21.4
41-50	68	24.3
51-60	45	16.1
>60	52	18.6
Mean±SD	47.6±15.3	
Sex		
Male	177	63.2
Female	103	36.8

Table 2: Signs and symptoms of the study patients (n=280)

Signs and symptoms	Frequency	Percentage
Fever	215	76.8
Cough	201	71.8
SOB	190	67.9
Sore throat	80	28.6
Sputum	45	16.1
Rhinorrhoea	17	6.1
Taste loss	35	12.5
Smell loss	27	9.6
Vomiting	18	6.4
Diarrhea	13	4.6
Palpitation	21	7.5
Headache	26	9.3

Table 3: Distributions of the study patients by co- morbidities (n=280)

Co-morbidities	Frequency	Percentage
Hypertension	82	29.3
Diabetes mellitus	65	23.2
Ischemic heart disease	25	8.9
Chronic kidney disease	20	7.1
Bronchial asthma	15	5.4
Chronic obstructive pulmonary disease	7	2.5
Others	40	14.3

Table 4: Investigation of the study patients (n=280)

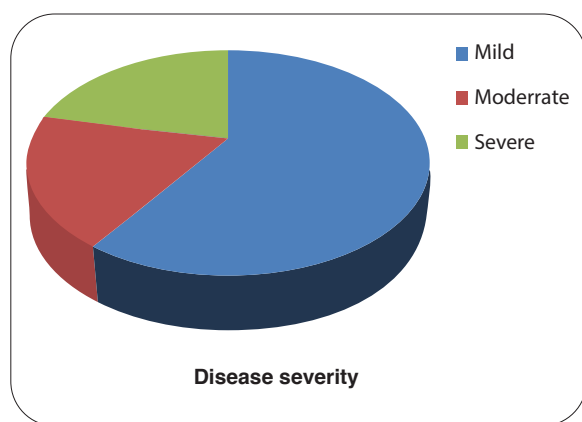| Investigation	Frequency	Percentage
RT-PCR		
Positive	280	100
Negative	0	0.0
X-ray findings		
Positive	217	77.5
Negative	63	22.5
HR-CT Chest		
Normal	2	0.7
Abnormal	278	99.3

Figure 1: Distribution of the study patients by disease severity (n=280)

In this study observed that majority 68(24.3%) patients belonged to age group 41-50 years with mean age was 47.6±15.3 years. Schonfeld et al.20 observed that the mean age of the cohort was 42.9±18.8 years, with 80.7% being younger than 60 years of age. Park et al21 study also reported the mean age of inpatients was 50.3 years. In study of Hasan et al22 reported seventy-four patients with COVID-19 who had an average age of 42.59±14.43 years, the majority of patients were aged <30 years (28.4%) with male predominance (77%) were included. Data from the Institute of Epidemiology, Disease Control, and Research (IEDCR) revealed that 42% of the Bangladeshi COVID-19 cases were aged between 21 and 50 years.[23] Morshed et al.24 reported the median age of the participants was 37 years (IQR: 31-53); more than 80% of these patients were under 60 years. Most of the patients were male (71.8%).

Table 5: Distribution of the study patients by outcome (n=280)

Outcome	Frequency	Percentage
Discharge	244	87.2
Referred	34	12.1
Death	2	0.7

Table 6: Association of outcome with disease severity (n=280)

	Mild (n=167)		Moderate (n=53)		Severe (n=60)		P
	n	%	n	%	n	%	value
Discharge	167	100	42	79.2	35	58.3	
Referred	0	0.0	11	20.8	23	38.3	0.001s
Death	0	0.0	0	0.0	2	3.3	

Discussion

In this study observed male patients were predominant 177(63.2%) whereas female 103(36.8%). Male-female ratio was 1.7:1. Hasan et al.22 consistent with the COVID-19 status of Bangladesh (male 73%), indicating a strong gender discrepancy in COVID-19 case identification of the adult population in Bangladesh. This may be because of the social

context of Bangladesh, where a man is the only wage earner of his family in most cases, and he needs more mobility compared to the female. An analytical report of Ahmed et al COVID-19 cases in Bangladesh stated that the underreporting of female patients even after infection due to shyness or social stigma is a challenge to focus, which might be a potential source of rapid disease transmission.25 However, studies from other countries also found a greater number of male patients with COVID-19 infection than female.26,27 Schonfeld et al.20 reported the sample comprised 50.0% men and 50.0% women.

In current study observed that majority 215(76.8%) patients had fever, 201(71.8%) patients had SOB, 80(28.6%) had score throat, 45(16.1%) had sputum, 35(12.5%) had taste loss, 27(9.6%) had smell loss, 26(9.3%) had headache, 21(7.5%) had palpitation, 18(6.4%) had vomiting, 17(6.1%) had rhinorrhoea and 13(4.6%) had diarrhea. Schonfeld et al.20 observed the most common symptoms were fever (58.5%), cough (58.0%), headache (45.4%), and sore throat (42.1%). General symptoms such as fatigue (32.9%) and myalgia (27.0%), were less common. Anosmia was reported in 25.7% and dysgeusia in 18.9%, and these symptoms were included in the definition of suspected cases as of June 8th, 2020. Gastrointestinal symptoms occurred in 21% (diarrhea 9.9%, abdominal pain 4.5%, vomiting 3.9%, anorexia 2.7%). Neurological complaints including confusion (1.1%), irritability (1.1%), seizures (0.2%) and coma (0.2%) were rare. Park et al.21 observed about 73.0% of hospitalized patients had at least one of the 12 symptoms; the most common being cough (42. 5%), sputum (28.8%), and fever (22.6%). Only 35.2% of confirmed cases admitted to the care facilities complained of symptoms at the time of admis- sion, and the most common symptoms were cough (15%), followed by rhinorrhea (9.9%), sputum (8.9%), and sore throat (6.2%). Fever was observed in only 2.0% of the care facilities patients. Morshed et al.24 the most common symptoms reported were fever (78.6%), weakness (68%) and cough (44.7%) followed by loss of appetite (37.9%), difficulty in breathing (37.9%), altered sensation of taste or smell (35.0%), headache (32%) and body ache (32%). Less common symptoms included sore throat (28.2%), diarrhoea (22.3%) and chest pain (14.6%). Fever was the most prevalent symptom in all groups of patients. Interestingly, 80% of moderate patients experienced difficulty in breathing compared to 62.5% severe patients. Similarly, in a meta-analysis from China, most prevalent symptoms were fever (80.4%), cough (63.1%) and fatigue (46%). However studies from China included both critical and non-critical patients. In contrast, one study from Europe on mild to moderate patients reported that headache (70.3%), loss of smell (70.2%), nasal obstruction (67.8%) were the most common symptoms; fever was reported by only 45.4% of patients. Interestingly, 39% of mild cases, 40% of moderate cases and 12.5% of severe cases reported the altered sensation of taste or smell in this study. While olfactory and gustatory dysfunctions were prevalent symptoms in European patients, they were only rarely reported in Chinese patients.28,29

The present study observed that majority 82(29.3%) patients had hypertension, 65(23.2%) had diabetes mellitus, 25(8.9%) had ischemic heart disease, 20(7.1%) had chronic kidney

disease, 15(5.4%) had bronchial asthma. Schonfeld[20] reported at least one underlying disease was reported in 41.0% (n = 84,916). Hypertension was the most frequent coexisting disorder (19.2%), followed by diabetes (9.7%), asthma (6.1%) and obesity (5.2%). Hypertension, obesity, diabetes, and smoking were present in a lower proportion than findings from local population-based studies. The National Risk Factor Survey found a self-reported prevalence of hypertension of 34.7%, as well as 25.3% for obesity, 12.7% for diabetes and 22.5% for current smokers.[30] It is plausible that the exposed population during a period of national lockdown was composed. Park et al. observed that the most common cases of co- morbidity were hypertension, followed by diabetes, COPD, liver diseases, and chronic cardiac diseases. Percentages of cases with one or more of the co- morbidities investigated were 37.3% for hospitalized patients and 4.2% for patients in temporary care facilities, since it was initially classified as a priority for hospitalization if someone had co-morbidity in triage.[21]

This study showed that majority 167(59.6%) patients with mild disease, 60(21.4%) had severe and 53(18.9%) had moderate disease. Park et al.[21] reported On admission, 7383 (94.5%) patients were asymptomatic or showed mild illness, and 372 (4.8%) patients were severe illness. Schonfeld et al.[20] also observed The CFR of 5.3% reflects the inclusion of cases with complete data, which were also the most severe. According to the Chinese Center for Disease Control and Prevention, more than 80% were mild cases, 14% were severe cases, and about 5% were critical cases.[18]

This study showed that majority 244(87.2%) patients were discharge, 34(12.1%) were referred and 2(0.7%) died. Schonfeld et al.[20] ICU mortality in COVID-
19 patients varies widely among the published case series, ranging from 16% to 78%.[31] Hasan et al. reported among those, 69.2% were discharged without complications, and 30.8% died.[22]

The present study observed that significant association was found between patients outcome with disease severity (p=0.001). In comparison with Park et al.[21] reported On admission, 7383 (94.6%) patients were asymptomatic, or had mild illness. Among them, 95.4% had symptoms that remained mild until discharge, 243 (3.3%) progressed to severe or critically ill status, and 83 (1.1%) died. Among the 372 patients who needed oxygen therapy on admission, 111(29.8%) died. The patients who were critically ill on admission showed high signs of the case fatality (62.5%). The case fatality in this study was 2.9%.

Conclusion

COVID 19 affects male more than male. Common clinical presentations were fever, SOB, score throat, sputum, taste loss, smell loss, headache, palpitation, vomiting, rhinorrhoea and diarrhea. Common comorbidites were hypertension, diabetes mellitus, ischemic heart disease, chronic kidney disease. Majority patients with mild disease and most of them are discharged, 12.1% were referred and 0.7% is mortality rate. Significant association was found between patients outcome with disease severity.

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Original Article

Murphy's sign: Importance in Sonographic Diagnosis of Cholecystitis

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ABSTRACT

Background: The study was conducted in Department of Radiology and Imaging, Rajshahi Medical College, Rajshahi in collaboration with the Departments of General Surgery and Histopathology of the same Medical College to find out the diagnostic accuracy of Ultrasonography on the assessment of cholicystitis.

Objectives: To find out the importance of Murphy's sign for the diagnosis of cholecystitis with acute calculus cholecystitis.

Methodology: A total of 128 patients (ranging from 08 - 80 years) were included on the basis of signs and symptoms of gallbladder diseases. All these patients were subjected to abdominal ultrasound first to achieve an ultrasonic diagnosis of gall bladder disease followed by either histopathological examination of biopsy material taken from the gallbladder or specimen of the operated gall bladder to authenticate ultrasonic findings. A structured questionnaire containing all the variables of interest was also used to interview each individual patient.

Result: The result of the study revealed that the sensitivity of ultrasound in correctly diagnosing cholecystitis was 85.9%, while the specificity of the test in correctly ruling out those who did not have cholecystitis was 60.9%. The positive predictive (PPVs) and negative predictive values (NPVs) of the test were 68.8% and 81.2% respectively. The overall cholecystitis diagnostic accuracy of the ultrasonography was 73.4%. On the other hand, On the other hand, when the murphy's sign was considered with ultrasound then the sensitivity of ultrasound in correctly diagnosing cholecystitis was 89%, while the specificity of the test in correctly ruling out those who did not have cholecystitis was 96.9%. The positive predictive (PPVs) and negative predictive values (NPVs) of the test were 96.6% and 89.9% respectively. The percentage of false positive and false negative yielded by the test were 3.4% and 10% respectively. The overall diagnostic accuracy of the test was 92.7%.

Conclusion: Ultrasound combined with Marphy's sign could be considered the preferred imaging technique for getting higher accuracy for patients who are clinically suspected of having acute calculus cholecystitis.

Key word: Ultrasonography, Histopathology, Calculus cholicystitis.

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Introduction

Hepatobiliary disease is a common problem in patients presenting to emergency departments or primary care settings. Unfortunately, clinical examinations and laboratory evaluations lack the necessary sensitivity and specificity to accurately diagnose many of these entities without further testing.[1] Emergency conditions involving the gallbladder and the bile ducts are common radiological challenging problems.[2] Ultrasound (USG) is the preferred imaging examination for the diagnosis of acute cholecystitis and is the first method used when the clinical presentation is suggestive of biliary pathology because of its high sensitivity at the detection of GB stones, its real-time character, and its speed and portability. The main findings of acute calculous cholecystitis on US include in addition to the presence of stones: distension of the gallbladder lumen, gallbladder wall thickening, a positive US Murphy sign, pericholecystic fluid.[3,4,5]

Ultrasound has the best sensitivity and specificity for evaluating patients with suspected gallstones.[6] As reported in the literature,[7] some ultrasonographic findings are more strongly associated with acute cholecystitis than others: a positive Murphy's sign (pain is provoked by either the transducer or the sonographer's palpation under guidance, in the exact area of the gallbladder) is reported to have sensitivity as high as 88%.[8,9] Ralls et al.[10] report that one of the most important advantages of ultrasound over other imaging techniques in the investigation of acute cholecystitis is the ability to assess for a

sonographic Murphy`s sign, which is a reliable indicator of acute cholecystitis with a sensitivity of 92%. More recently it has been recognized that ultrasonography is very accurate for diagnosing cholelithiasis but less so for diagnosing cholecystitis, with reported positive predictive values (PPV) of 37%–88% and negative predictive values (NPV) of 38%–86%.[11,12,13,14,15]

From the above background information, Ultrasound (USG) appears as the diagnostic method of choice for the diagnosis of acute cholecystitis when the clinical presentation is suggestive of pathology in the biliary tree. Contemporary literatures support that ultrasonographic findings correlate well with acute cholecystitis. The most important merit of ultrasound over other imaging techniques in the investigation of acute cholecystitis is its ability to assess for a sonographic Murphy sign, which is a reliable indicator of acute cholecystitis with a high sensitivity. Considering the above facts, it can be said that, acute cholecystitis is one of the most common diseases requiring emergency surgery. Ultrasonography is an accurate test for cholelithiasis but has a high false-negative rate for acute cholecystitis. The Murphy`s sign and laboratory tests performed independently are also not particularly accurate. But combination of sonographic Murphy's sign with ultrasound may provide good result. Finally, the objective of the study to find out the sensitivity and specificity of combination of ultrasound with positive murphy's sign in the diagnosis of cholecystitis.

Method

The present study was a cross-sectional observational study.The study was conducted from July 2016 to June 2018 in Department of Radiology and Imaging, Rajshahi Medical College, Rajshahi and in Islami Bank Hospital, Laxmipur, Rajshahi in proper collaboration with the Departments of General Surgery and Histopathology of the Rajshahi Medical College. A total of 135 patients (ranging from 40 - 80 years) were initially consecutively included on the basis of signs and symptoms of gallbladder diseases (such as upper abdominal pain, jaundice, low grade fever, weight loss and upper abdominal mass) and underwent USG for preoperative radiological diagnosis, its extension and operability. Of them 7 were minors (< 18 years old) and were excluded from the study leaving 128 for final evaluation. Prior to the experimentation, the patients were informed about the study design following Helsinki Declaration for Medical Research Involving Human Subjects 1964. The patients who were agreed to participate in the study were included as study sample. All these patients were subjected to abdominal ultrasound first to achieve an ultrasonic diagnosis of gall bladder disease followed by histopathological examination of biopsy material taken from the gallbladder or specimen of the operated gall bladder to authenticate ultrasonic findings. Data were collected using a structured questionnaire (research instrument) containing all the variables of interest by interview of the individual patient and also collected data from their ultrasonography and histopathological findings.

Data were processed and analyzed using computer software SPSS (Statistical Package for Social Sciences). The test statistics used to analyze the data were descriptive statistics and accuracy (sensitivity, specificity, positive and negative predictive values of USG) of USG. The accuracy of

ultrasound in the diagnosis of gall bladder diseases was determined by comparing the ultrasound diagnosis with that of histopathological diagnosis. The accuracy, sensitivity, specificity, positive and negative predictive values of USG was calculated using the following mathematical formula.

1. Accuracy (%) = × 100
2. Sensitivity (%) = × 100
3. Specificity(%)
4. Percent Positive Predictive Values (% PPV)
5. Percent Negative Predictive Values (% NPV)

Where, TP= True Positive (The number of cases correctly identified as patient), TN = True Negative (The number of cases correctly identified as healthy), FP = False Positive (The number of cases incorrectly identified as patient) and FN = False Negative (The number of cases incorrectly identified as healthy).

Result

The ultrasound diagnosis revealed 80 with acute cholecystitis among them 55 were confirm cholecystitis by histopathologywhile 59 were cholecystitis with Murphy's sign and histopathology diagnosed 57 as cholecystitis.Age distribution of the patients shows that over one-third (35.9%) was 50 or > 50 years old followed by 24.9% 40 − 50 years, 21.9% 30- 40 years and 16.4% 20 − 30 years old. The mean age of the patients was 43.8 years and youngest and oldest patients were 18 and 80 years old respectively. Females outnumbered males by roughly 11:9 (Table 1). The predominant complaints reported by the patients were pain in the right upper abdomen (95.3%), epigastric pain (94.7%), abdominal discomfort (96.9%) followed by nausea (75%), low-grade fever (37.5%), jaundice (26.6%) and vomiting (26.6%), yellow colouration of conjunctiva (25.8%), dark urine (18%), weight loss (17.2%). Approximately 44% of the patients exhibited anaemia (Table 2). Nearly half (46.1%) of the patients exhibited sonographic murphy's sign and in 10.9% cases presence of a mass was detected. Hyperechoic echo character was invariably obtained with 12.5% cases having hypoechoeic character as well (Table 3).

The accuracy of different diagnostic variables in diagnosing cholecystitis was shown in Table 4. The sensitivity of ultrasound in correctly diagnosing cholecystitis was 85.9%, while the specificity of the test in correctly ruling out those who did not have cholecystitis was 60.9%. The positive predictive (PPVs) and negative predictive values (NPVs) of the test were 68.8% and 81.2% respectively. The percentage of false positive and false negative yielded by the test were 31.2% and 18.8% respectively. The overall diagnostic accuracy of the test was 73.4%. On the other hand, when the murphy's sign was considered with ultrasound then the sensitivity of ultrasound in correctly diagnosing cholecystitis was 89%, while the specificity of the test in correctly ruling out those who did not have cholecystitis was 96.9%. The positive predictive (PPVs) and negative predictive values (NPVs) of the test were 96.6% and 89.9% respectively. The percentage of false positive and false negative yielded by the test were 3.4% and 10% respectively. The overall diagnostic accuracy of the test was 92.7%.

Table 1: Distribution of patients by their demographic variables

Demographic variables	Frequency	Percentage	Mean ± SD (Range)
Age (yrs)			
< 20	2	1.6	
20 – 30	21	16.4	
30 – 40	28	21.9	43.8 ± 14.4 (18-80)
40 – 50	31	24.2	
≥ 50	46	35.9	
Sex			
Male	59	43.7	---
Female	76	56.3	---

Table 2 : Distribution of the patient by their clinical characteristics

Clinical characteristics	Frequency	Percentage
Pain in the right upper abdomen	122	95.3
Epigastric pain	121	94.7
Abdominal discomfort	124	96.9
Low grade fever	48	37.5
Jaundice	34	26.6
Nausea	96	75.0
Vomiting	34	26.6
Diarrhoea	7	5.5
Yellow coloration of conjunctiva	33	25.8
Dark urine	23	18.0
Anaemia	56	43.8
Weight loss	22	17.2
Presence of a mass in the righthypochondrium	13	10.2

Table 3: Distribution of the patients by their USG findings

USG findings	Frequency	Percentage
Presence of a mass	14	10.9
Sonographic Murphy's sign	59	46.1
Echo characteristics		
Hypooechoeic	16	12.5
Hyperechoeic	128	100.0

Table 4: Diagnostic sensitivity, Specificity, PPVs, NPVs and accuracy for diagnostic variable

Diagnostic variables	No.	Sensitivity %	Specificity %	PPV %	NPV %	FP %	FN %	Accuracy %
Cholicystitis on USG	80	85.9	60.9	68.8	81.2	31.2	18.8	73.4
Marph's sign+ Cholicystitis on USG	59	89	96.9	96.6	89.9	3.4	10	92.7

PPV=Positive predictive value, NPV= Negative predictive value, FP= False positive, FN= False Negative

Discussion

The sensitivity of ultrasound in diagnosing cholecystitis was 85.9%, while the specificity of the test was 60.9%. The positive and negative predictive values (PPVs) of the test were 68.8% and 81.2% respectively. The overall diagnostic accuracy of the test was 73.4%. Although cholescintigraphy still has the highest sensitivity and specificity (96% and 90%) in patients who are suspected of having acute cholecystitis, sonography is still used as the initial imaging technique for evaluating patients with suspected gallbladder (GB) disease because of its high sensitivity, its real-time character, and its speed and portability.[16] A combination of reasons including logistic drawbacks, broad imaging capability and clinician referral pattern (especially in the emergency setting) the use of cholescintigraphy is limited in clinical practice. Thus, US have emerged as the first-line imaging modality for the diagnosis of acute calculous cholecystitis. In cholescintigraphic procedure takes several hour and provides information confined to the hepatobilliary tract, whereas a full abdominal US examination can be performed in 10–15 minutes and allows for assessment of pain localized to the gallbladder region (sonographic Murphy sign).[17] Cholescintigraphy also carries the burden of ionizing radiation whereas US imaging do not.[18] However, the sensitivity (89%), specificity (96.9%), positive predictive values (96.6%), negative predictive values (89.9%) and the overall diagnostic accuracy (92.7%) of the ultrasound in diagnosing cholecystitis was increased when the ultrasound combined with sonographic Murphy's sign. Ralls et al19 reported that only Murphy's sign is useful but imperfect in the assessment of patients with suspected acute cholecystitis.In a recent study, Hwang et al 20 reported that ultrasonography alone has a high rate of false-negative studies for acute cholecystitis and a higher rate of accurate diagnosis can be achieved using a triad of positive Murphy sign, elevated neutrophil count and an ultrasound showing cholecystitis .In this study, high rate of accurate diagnosis also achieved when ultrasound combined with Marphy's sign than only ultraound. Thus, US combined with Marphy's sign could be considered the preferred imaging technique for getting higher accuracy for patients who are clinically suspected of having acute calculous cholecystitis

Conclusion

From the findings of the study it can be concluded that ultrasonography is an accurate test for cholelithiasis but has a high false-negative rate for acute cholecystitis. The Murphy`s sign and laboratory tests performed independently are also not particularly accurate. With Marphy's sign sensitivity 89% and specificity 96.9%.

Recommendation

US consideration with Marphy's sign is the preferred imaging technique for getting higher diagnostic accuracy for patients who are clinically suspected of having acute calculous cholecystitis

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Original Article

Association of Thyroid Profile with Severity of Psoriasis

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ABSTRACT

Background: Psoriasis is a chronic immune-mediated inflammatory condition, is associated with an increased risk of autoimmune disease and inflammatory comorbidities. Few studies showed an association between psoriasis and thyroid disease, but in Bangladesh context, such research is scarce. So this study aimed to investigate the association of psoriasis with thyroid disorders.

Methods: This observational cross-sectional study was conducted at the Department of Dermatology and Venereology in Dhaka Medical College Hospital, for one year of period from August 2019 to July 2020. A total of 50 patients were enrolled in this study according to selection criteria. Written informed consent was ensured from each of the participants.A detailed history, thorough clinical examination and relevant investigations were carried out in each patient. PASI score was used to asses the severity of psoriasis in each patients. Serum thyroid profiles(FT3,FT4,TSH,TPO-Ab,TG-Ab) were measured by automated hormone anlyzers. After collection of all the data, the analysis was done by SPSS 25.0.p-value < 0.05 was taken as significant.

Results: Mean age of the respondents was 37.48 (±11.82) years . 30(60%) of the respondents were female and 20(40%) were male. According to thyroid function status, 35(70%) of patients were euthyroid, 7(14%) were hyperthyroidism, and 8(16%) had hypothyroidism. Positive TPO-Ab was found 11(22%) of patients . Of all positive TPO-Ab, autoimmune thyroid disorder was 7(14%) in which 3(6%) had Grave's disease, 4(8%) had Hashimoto thyroiditis. BMI >30kg/m2 was significantly associated with TPO-Ab positive patients. The study found a strong positive correlation(r=0.404, p=0.002) between PASI score and TSH level. There was also a positive correlation between(r=0.543, p<0.01) PASI score with TPO-Ab label.

Conclusion: This study revealed the proportion of thyroid disorders including autoimmune thyroid disorders in psoriatic patients was common finding. TSH and TPO-Ab was significantly higher in moderate to severe psoriasis.

Key word: Psoriasis, Thyroid, TSH, TPO-Ab

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Introduction

Psoriasis is a chronic inflammatory disease(Al-Mokhtar et al., 2018),which is a non-communicable, painful, disfiguring and disabling disease which impacts adversely on patients' quality of life (QoL)(World Health Organization, 2016). Though psoriasis commonly affects skin, joints, nails, and scalp, but no system of the human body is immune from direct or indirect effects of psoriasis (Mallick, 2019).

The worldwide prevalence of psoriasis is between 1.5% to 5%, especially in Europe and North America (World Health Organization, 2016). The prevalence shows a linear increase over time, affects both males and females of all ages (Vani et al.,2017) In Bangladesh, 68% of children with psoriasis were mostly plaque psoriasis (Bhuiyan et al., 2017).
Psoriasis presents with itchy red, scaly patches, papules, and plaques, with variable severity, from localized patches to widespread body area. Psoriasis is classified in five types:

plaque, guttate, inverse, pustular, and erythrodermic (Ruffilli et al., 2017).

The psoriasis area severity index (PASI) is a prototype to measure psoriasis severity . It is the most widely used tool to assess the severity of disease in clinical trials and clinical practice. The changes in PASI score reflect improvement and worsening of the disease. PASI score can vary from 0-72. PASI score less than 10 or equal is classed as mild disease, whilst a score of greater than 10 is considered to be moderate to severe. (Mrowietz et al.,2011)

Psoriasis has been associated with insulin resistance, cardiovascular disease, atherosclerosis, crohn's disease, depression, skin cancer, non-alcoholic fatty liver disease(NAFLD) as well as thyroid function disorders (Baeta et al., 2014; Gyldenlove et al., 2015).
Common thyroid disorders in Bangladesh are hypothyroidism, graves' disease, thyroiditis and totaling 20% of the population suffering from any type of thyroid disorders (Ansari, 2014). Thyroid-stimulating hormone (TSH) that released from the pituitary gland, which acts on the thyroid gland to elicit thyroid hormones, thyroxine (T4), and tri-iodothyronine (T3) (Al-Mokhtar et al., 2018).Thyroid gland hormones contribute in the increase of epidermal cell proliferation which represents one of the factors that causes hyper-proliferation of keratinocytes, which may play a role in pathogenesis of psoriasis (Zoabi et al., 2012).

Psoriasis is a T-cell mediated autoimmune disease. It is a multifactorial disease in which genetic, environmental, immune defect and hormonal factors take part in the autoimmune pathogenesis of psoriasis .The role of different hormones like a thyroid-stimulating hormone, cortisol, prolactin, and thyroid hormones in the pathogenesis of psoriasis has been studied previously (Robati et al., 2013; Vani et al., 2017).The severity of the disease has been correlated with levels of thyroid hormones.

 Thyroid hormone receptors are expressed in the skin, and their levels change during the active phase of psoriasis and improvement of the disease by anti-thyroid therapy (Vani et-al., 2017). Cortisol has a role in the mediation of psycho-emotional stress, and it is shown that cortisol response to stress is diminished in psoriasis (Evers et al., 2010).Therefore, it can be assumed that changes in the activity of hypothalamus-pituitary-adrenal (HPA) axis can have a role in the pathogenesis of psoriasis via changes in cortisol levels (Zangeneh and Fazeli, 2008).

Thyroid hormones play an important roles in many body functions (Al-Mokhtar et al., 2018).However, there are only a few studies between psoriasis and thyroid disease (Wang et al., 2019). A Taiwanese study reported the prevalence of both hyperthyroidism and hypothyroidism in psoriasis patients(Tsai et al., 2011). Again another study from Turkey found no association between them (Yang et al., 2011).
 A European case-control study also showed no significant association between psoriasis and autoimmune thyroiditis (Babar et al., 2013).However, in a US study, increased levels of TSH were observed in psoriasis patients. Because a causal relationship cannot be concluded from these case-control studies with inconsistent results, the association

of psoriasis with thyroid diseases remains mostly unclear.

Thus, the relation of psoriasis with thyroid disorders remains a topic of controversy; some studies reported a significant association between the two while others showed no relevance (Tsai et al., 2011; Yang et al., 2011; Babar et al., 2013).

There is no study has been published yet in Bangladesh on the same topic. Therefore, this study aimed to investigate the association of psoriasis with thyroid disorders in the context of the Bangladeshi population.

Psoriasis is an autoimmune T-cell mediated inflammatory disease which is characterized by activation of Antigen Presenting Cells (APCs) and activation and expansion of Th-1 and Th-17 cells. Psoriasis has been associated with insulin resistance, thyroid dysfunction, cardiovascular disease, atherosclerosis, Crohn's disease, depression, and non-alcoholic fatty liver disease (NAFLD). Thyroid disorders have a high prevalence in medical practice and they are associated with a wide range of skin disorders with which they may or may not share etiological factors. . Skin is the site of synthesis and metabolism of several neuropeptides, including components of the Hypothalamic-Pituitary-Adrenal (HPA) and Hypothalamic-Pituitary-Thyroid (HPT) axis and also a source of vitamin. Any derangement of this axis may lead to various skin diseases. Evaluation of thyroid hormone levels and initiation of pharmacological intervention at the earliest when required may prevent worsening of the disease and associated comorbidity. The purpose of this study was to determine the proportion of thyroid disorder in patients with psoriasis. Several studies had been conducted about psoriasis and thyroid profile in different countries. But there was scarce study in this topic in Bangladesh. For this purpose, this study was conducted in the department of Dermatology and Venereology, Dhaka Medical College Hospital, Dhaka.

Objectives

To determine the association of thyroid disorders with the severity of psoriasis.
The study was conducted over a period of one year from August2019 to July 2020.
Psoriasis patients attending at outpatient dermatologic clinic of Dhaka Medical College and Hospital were included in this study.
Sample size was calculated according to Daniel formula equation. The targeted sample was 45. The current study duration is 12 months; therefore 50 cases were taken purposively as sample.

Inclusion criteria was psoriasis patient confirmed by clinically and/or by histopathology and patients aged ≥18 years to 65 years of both gender with psoriasis.
Exclusion criteria was systemic diseases such as diabetes, malignancy, and patients with other known systemic (Liver, renal and endocrine Diseases), pregnant and lactating women and usage of drugs (Lithium, amiodarone, dopamine, levodopa, bromocriptine) that interfere with thyroid functions for the last 6months.

Sociodemographic Variables:
- Age
- Gender

Dependent Variables :
- Age of onset of disease
- Duration of disease
- BMI
- PASI score

Independent Variables :
Laboratory Variables:

- Serum-free triiodothyronine (FT3)
- Free thyroxine (FT4)
- Thyroid stimulating hormone (TSH)
- Antithyroid peroxidase (anti-TPO) antibody
- Anti-thyroglobulin (anti-TG) antibody.

Data collection Procedure

This cross-sectional study was conducted in the Department of Dermatology & Venereology, Dhaka Medical College, and Hospital, Dhaka. Patients attending with a confirmed diagnosis of psoriasis were approached for this study. Total of 50 patients was selected according to inclusion and exclusion criteria. Informed written consent was obtained from each patient. Each patient underwent detailed history taking and thorough physical examination. Thyroid function tests and other relevant investigations were done for each patient. Data were collected using a semi-structured questionnaire that was prepared. Collected data were analyzed using SPSS 25.

All relevant informations for each study subject was recorded after getting informed written consent in a pre-prepared case record form. Collected data were checked again. Data were collected by the researcher himself. The used tools were-
- Questionnaire in Bangla
- Questionnaire in English
- Tools for examination like weight and height measuring scale .

Data processing and analysis

Collected data was analyzed using SPSS [Statistical Package for Social Sciences] for Windows, version 25 (SPSS, Inc, Chicago, IL). Continuous data were expressed as mean and standard deviation and categorical variables were expressed as frequency and percentages. Differences in categorical variables between groups were tested using the chi-square test. Unpaired student t-test was done to corelate between continuous variables of thyroid functions and severity of psoriasis. Pearson correlation coefficient test was done to analyze the correlation between PASI score and thyroid autoantibody. Logistic regression analysis was done to analyze the association between PASI score and TSH/TPO-Ab. For all statistical test p value < 0.05 was considered statistically significant.

Ethical consideration

Approval for the study was obtained from the Institutional Review Board (IRB) of Dhaka Medical College, Dhaka before

the commencement of the study. The purpose of the study and its procedure, potential risks, and benefits were explained to the patients in an easily understandable local language. All participating subjects were assured that they would have the full right to withdraw themselves from the study at any time for any reason what-so-ever, and their refusal to participate or withdrawal from the study would not hamper their treatment anyway. They were also be assured that all records provided by them would be kept confidential and would not be disclosed nevertheless except for study. Then informed consent was sought from them, and the patients who gave voluntary consent to participate in the study were only be included.

Results

This observational cross-sectional study was conducted at the Department of Dermatology and Venereology in Dhaka Medical College Hospital, for one year of the period following approval of this protocol following ethical approval. A total of 50 patients were enrolled in this study according to selection criteria. Written informed consent was ensured from each of the participants. A detailed history, thorough clinical examination and relevant Thyroid profiles were measured in each patient. PASI score were used to analyze the assessment of disease severity. the proportion of thyroid disorders in patients with psoriasis was carried out.

Table I: Distribution of the respondents by Age group (N=50)

Age group (Year)	Frequency (n)	Percentage (%)
< 30	16	32
31 to 40	10	20
41 to 50	18	36
>50	6	12
Total	50	100
mean±SD	37.48±11.82 years	
Range	(18-65) years	

*Result was expressed by frequency (percentage) and mean±SD

Table I: shows that majority of respondents were aged between 41-50 years, the mean age of the respondents was 37.98±12.12 years of SD with a range from 18 to 65 years.
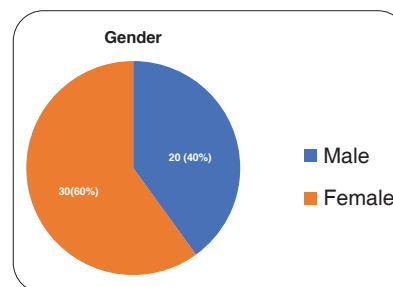

Figure 1: Distribution of the respondents by Gender (N=50)

*Result was expressed by Frequency(Percentage)
Pie chart shows that 30(60%) of the respondents were female and 20(40%) were male.

Table II: Distribution of the respondents by Age of onset (N=50)

Age group (Year)	Frequency (n)	Percentage (%)
≤ 40	35	70%
>40	15	30%
mean±SD	32.12±12.76 years	
Range	8 – 54 years	

*Result was expressed by frequency(percentage) and mean±SD
Table II shows that 35(70%) of respondents were affected before 40 years and 15(30%) of the respondents were affected after 40 years of age. The mean age of the respondents was 32.12±12.76 years of SD with a range of 8-54 years.

Table III: Distribution of the respondents by Duration of psoriasis and BMI (N=50)

Clinical findings	mean±SD	(Range)
Duration of psoriasis (years)	6.16±3.22	(1-13)
BMI (kg/m²)	28.46±3.69	(23-35)

*Result was expressed mean±SD
Table III shows that mean duration of psoriasis was 6.16±3.22 (1-13) years, BMI was 28.46±3.69 (23-35) Kg/m2

Table IV: Distribution of the respondents by Laboratory variables (N=50)

Clinical findings	mean±SD	(Range)
FT3 (pmol/l)	5.36±2.08	(1.80-10.50)
FT4 (pmol/l)	14.77±7.95	(3.60-35.50)
TSH (mIU/L)	3.31±3.07	(0.01-15.37)
TPO-Ab (IU/ml)	34.92±29.75	(10-180)
Tg-Ab (IU/ml)	51.02±33.14	(13.40-130)

*Result was expressed by frequency (percentage)and mean±SD
Table IV shows that mean FT3 was 5.36±2.08, FT4 was 14.77±7.95, TSH was 3.31±3.07, TPO-Ab was 34.92±29.75 and Tg-Ab was 51.02±33.[14]

Table V: Distribution of the respondents by Thyroid profile (N=50)

| Thyroid disorder	Frequency (n)	Percentage (%)
Euthyroid	35	70
Hyperthyroidism	7	14
Hypothyroidism	8	16

*Result was expressed by frequency(percentage.)
Table V shows that 35(70%) had Euthyroid, 7(14%) had Hyperthyroidism and 8(16%) had Hypothyroidism.

Table VI: Distribution of the respondents by Autoimmune thyroid disease (N=50)

Thyroid disorder	Frequency (n)	Percentage (%)
Grave's disease	3	6
Hashimoto thyroiditis	4	8

*Result was expressed by frequency(percentage).
Table VI shows that 3(6%) had Grave's disease and 4(8%) had Hashimoto thyroiditis.
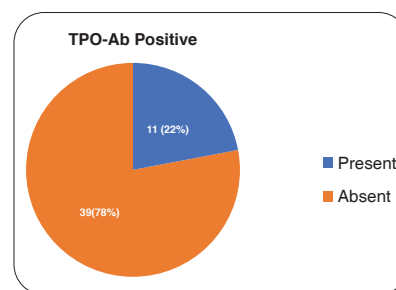
Figure 2: Distribution of the respondents by TPO-Ab positive (N=50)

*Result was expressed by frequency(percentage).
Pie chart shows that 22% (11) respondents had Positive TPO-Ab.

Table VII: Correlation of TPO Ab(+ve) prevalence with confounders within patients with psoriasis(N=50)

Variables	TPO Ab +ve
Age	n (%)
≤45 years	
>45 years	7 (26.9)
p value	4 (16.7)
Age of onset	0.29
≤40 years	
>40 years	10 (28.6)
p value	1 (6.7)
Sex	0.10
Male	
Female	5 (25)
p value	6 (20)
BMI (kg/m2)	0.48
≤ 30	
>30	5 (13.2)
P value	6 (50)
Duration of disease	0.01
≤5 years	
>5 years	4 (17.4)
p value	7 (25.9)
	0.35

p value was determined by Chi-square test
*Result was expressed by percentage.

Table VII shows BMI > 30 was significantly associated with TPO Ab (+ve). Other confounders did not correlate significantly with TPO Ab.

Table VIII: Distribution of the study population PASI score (N=50)

PASI score	Frequency	Percentage (%)	PASI Mean±SD	PASI (Range)
≤10 (mild disease)	29	58	7.20±1.78	(4-10)
>10 (moderate to severe disease)	21	42	13.28±3.16	(11-21)
Total	50	100	9.76±3.88	(4-21)

*Result was expressed by frequency(percentage) and mean±SD

Table VIII shows that majority 29 (58%) of the patients were belonged to PASI score ≤10 (mild disease) and 21 (42%) of patients were belonged to PASI score >10 (moderate to severe disease). Mean PASI score was 9.76±3.88.

Table IX: Association of thyroid profile with severtiy of psoriasis) N=50)

Thyroid profile	Mild	Moderate to severe	p value
FT3	5.16±1.68	5.63±2.56	0.439
	(2.20-9.62)	(1.80-10.50)	0.822
FT4	14.55±6.79	15.07±9.50	0.02
	(3.60-35.50)	(3.80-30.60)	<0.01
TSH	2.51±.1.60	4.49±4.22	0.747
	(0.01-5.89)	(0.10-15.37)	
TPO-Ab	22.51±8.71	52.06±39.11	
	(10-55)	(19-180)	
Tg-Ab	49.71±33.16	52.82±33.85	
	(15-130)	(13.40-130)	

* p value was determined by independent sample t test.
*Result was expressed by mean±SD

Table IX shows that TSH and TPO-Ab was significantly higher those who had moderate to Severe Psoriasis. But no significant difference has been found with FT3, FT4 and Tg-Ab level with severity of psoriasis.
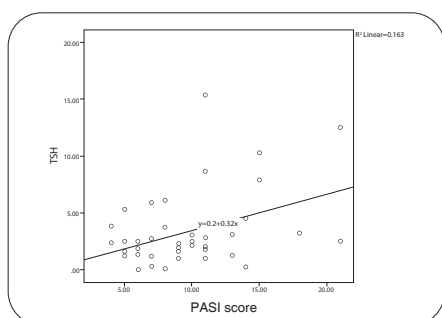

Figure 3: Correlation of PASI score with TSH level of psoriasis patients (N=50)

PASI score and TSH level of psoriasis patients were significantly associated (r=0.404, p=0.002) that means TSH increases while severity of Psoriasis increases.
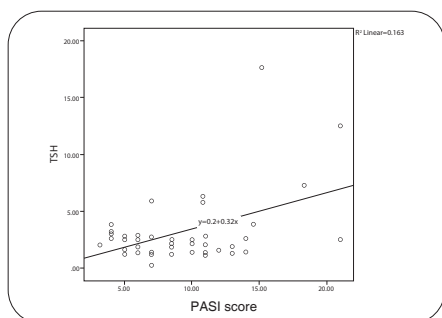

Figure 4: Correlation of PASI score with TPO-Ab level of psoriasis patients (N=50)

PASI score and TPO-Ab level of psoriasis patients were significantly associated (r=0.543, p<0.01) that means TPO-Ab increases while severity of Psoriasis increases.

Table X: Risk factor analysis of severity of psoriasis by Univariate logistic regression (N=50)

Risk factors	Odds Ratio	95% CI	p value
Age (>45 years)	1.027	0.334-3.160	0.963
BMI (>30kg/m2)	2.700	0.631-11.551	0.180
PASI	2.708	0.001-4.281	0.989
FT3	1.048	0.802-1.369	0.731
FT4	0.961	0.891-1.037	0.306
TSH level	1.546	1.098-2.176	0.013
TPO-Ab	1.105	1.033-1.181	0.003
Tg-Ab	1.011	0.993-1.029	0.229

Univariate logistic regression analysis shows that TSH and TPO-Ab were significantly associated risk factor for severity of psoriasis.

Table XI: Risk factor analysis of severity of psoriasis by Multivariate logistic regression (N=50)

Risk factors	Odds Ratio	95% CI	P value
TSH level	1.401	0.899-2.182	0.14
TPO-Ab	1.095	1.023-1.173	0.01

Multivariate logistic regression analysis shows that TPO-Ab was significantly associated risk factor for severity of psoriasis.

Discussion

This observational cross-sectional study was conducted at the Department of Dermatology and Venereology in Dhaka Medical College Hospital, for one year of the period following approval of this protocol following ethical approval. A total of 50 patients were enrolled in this study according to selection criteria. Written informed consent was ensured from each of the participants. A detailed history, thorough clinical examination and relevant Thyroid profiles were carried out in each patient. After collection of all the required data, the analysis was done by SPSS 25.0. PASI score were used to analyze the assessment of disease severity. The purpose of this study was to determine the prevalence of thyroid disorder in patients with psoriasis.

In this study majority of the patients were in age group 41 to 50 years (36%) and age ranges from 18 -65 years. Study by Siddique et al was done in department of dermatology and venereology, BSMMU, Dhaka where mean age of the patients was ranged 24-70years and with a majority in age group 30-40 years.(Siddique et al., 2013)). Another study in University Hospital Tehran, Iran where mean age of the patients was ranged from 21 to 66 years (Robati et al., 2013) . Age group varies in several studies because psoriasis can appear at any age and no age is immune from psoriasis .

In this study 60% of the respondents were female and 40% were male. Female were predominant in the study. In a study by Alidrisi et al in Basrah, Iraq also revealed patients with

psoriasis 58.9% were females and a female to male ratio was 1.43:1 (Alidrisi et al., 2019). In the study of Vani et al Dharwad India, also observed similar findings where 73 were female and 62 were male (Vani et al., 2017). But Hagg et al. found 59.8% female and 40.2% male in their study which was done in Umea University, Sweden.(Hägg et al., 2017).Most of the study shows female predominant sample¸as females are more concern about skin problem. So they seek early treatment for both cure and cosmetic issue.

In this study most of the respondents were affected before 40 years . Study by Siddique et al was done in department of dermatology and venereology, BSMMU, Dhaka where mean age of onset of disease was also before 40years as usual age of onset of psoriasis is before 46 years and 75% of case occurred before 46 years of age (WHO, 2016).In a study by Alidrisi, a significantly higher prevalence of Hashimoto's thyroiditis in the form of positive TPO Ab was found in late-onset psoriasis (onset ≥ 40 years old) in comparison with early-onset psoriasis. This finding is difficult to be explained by the cross-sectional design of this study due to the lack of data about the exact onset of the development of thyroid autoimmunity. While Hashimoto's thyroiditis is associated with HLA class II alleles, class I HLA, specifically HLA-C allele, which is strongly associated with early-onset psoriasis, is not implicated in Hashimoto's susceptibility. On the other hand, late-onset psoriasis has no clear HLA association.

In this study duration of disease was 1-13years. In a previous study by Alidrisi et al. was done in Basrah College of Medicine where mean duration of psoriasis was 11.88±10.66 years (Alidrisi et al., 2019). Robati et al. observed median duration of disease was 9 years with a range of 1 month to 42 years (Robati et al., 2013).Duration of disease varies as psoriasis is a chronic disabling disease with recurrence and remission.As it as autoimmune disease with genetic and predisposition.So its persist through out the life .Proper treatment and avoidance of immunological triggers may control flare of the disease.

In this study mean BMI was rages from 23-35kg/m2 and BMI > 30 kg/m2was significantly associated with TPO Ab positive. A study by Alidrisi mean BMI was 29.8+_6.6 and also significantly associated with TPO Ab positive, which matches with this study(Alidrisi et ai,.2019).Psoriasis is aggravated by obesity as both cellular and genetic load increases . In patients with psoriasis, a higher prevalence of TPO Ab in obese as compared to non-obese. It has been found that obesity increases the risk of having autoimmune thyroid diseases with an emerging role for leptin in thyroid autoimmunity . At the same time, previous reports showed that the adipokines-derived cytokines including leptin are present in high concentrations in patients with psoriasis . These findings may explain the higher prevalence of TPO Ab in obese patients with psoriasis.

In this study 70% were euthyroid, 14% were hyperthyroid and 16% were hypothyroidism. Another study by Vani et al. also observed majority of the psoriatic patients had Euthyroid followed by small amount of hypothyroidism and hyperthyroidism (Vani et al., 2017).. Alidrisi et al. also observed 85.7% euthyroid and 5.4% hypothyroidism and

8.9% subclinical hypothyroidism (Alidrisi et al., 2019). Most of the study shows hypothyroidism is more than because hypothyroidism is common thyroid disorder .Hypothyroidism also cause obesity and obesity aggravates severity of psoriasis.

In this study almost one fourth of respondents were TPO-Ab positive. Increased TPO-Ab indicates autoimmune thyroid disorder.As psoriasis is also an autoimmune disease which may be associated with other autoimmune diseases like AITD.

Three patients were Grave's disease and four patients were Hashimoto thyroiditis Alidrisi et al. observed 14 positive TPO-Ab and 3.6% Hashimoto thyroiditis and 1.8% Grave's disease in their study (Alidrisi et al., 2019). Most of the study found Hashimoto thyroiditis is more because it is clinically presented as hypothyroidism which is common thyroid disorder.

In this study twenty nine patients had mild Psoriasis and twenty one patients had had moderate to severe Psoriasis. Robati et al. observed in their study mean PASI score was 12.83 ± 10.25 (Robati et al., 2013). Siddique et al. observed 71.2% mild Psoriasis and 28.8% moderate to severe cases. TSH and TPO-Ab was significantly higher those who had moderate to Severe Psoriasis and TSH level and TPO-Ab of psoriasis patients were significantly associated with PASI score. That means TSH and TPO-Ab increases while severity of psoriasis increases. Previous study Alidrisi et al. also observed TSH and TPO Ab was significantly higher in psoriasis (Alidrisi et al., 2019). Al-Mokhtar et al. also revealed that the levels of TSH were elevated in psoriatic patients (Al-Mokhtar et al., 2018).

Conclusion

This study revealed the prevalence of thyroid disorders as well as autoimmune thyroid disorders in psoriatic patients was common. TSH and TPO-Ab was significantly higher those who had moderate to severe psoriasis. The study found a strong positive correlation between PASI score and TSH level. There was also a positive correlation between PASI score with TPO-Ab level.

Limitations

1. As this was a tertiary level hospital based study, so the subjects who did not visit hospital in dermatology and venereology department were not included in the study.
2. Present study was conducted at a short period of time.
3. Sampling technique was purposive in this study. So there were chances of bias in the results.
4. Childhood psoriasis was not included in my study.

Recommendation

1. Thyroid dysfunction and thyroid autoimmunity in Bangladeshi psoriatic patients are very common. A large-scale study may answer the actual scenario in this aspect.
2. Following investigations are recommended for further

large scale study:
- A. Ultra-sonography of thyroid gland
- B. Thyroid scan.
3. All patients with psoriasis should be screened and followed up regularly for thyroid disorder.
4. All patients with psoriasis should be treated for thyroid disorder if present in addition to psoriasis treatment.

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Role of Dietary Habit and Nutritional Status on The Severity of Covid-19 Treatment: A Hospital Based Cross-sectional Study.

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ABSTRACT

Introduction: The severe acute respiratory syndrome coronavirus (SARS-CoV)-2 disease (COVID)-19 is having unsual outcome on the worldwide economy and nutrition commerce. Narrow data are obtainable on how this pandemic is touching our dietary and nutritional behaviors in Bangladesh.

Objective: Aim of this study is to determine the relationship between history of dietary habits and nutritional status on the severity of covid-19 treatment.

Materials and Methods: This descriptive cross-sectional study was done among the adult resident of Dhaka city during the Covid-19 pandemic. Several sociodemographic, dietary patterns, nutritional status, and behavioral factors have been found in this study. In this study, 16-85 years old people were included, and under 15 years old children were excluded.

Results: In this study, it was found that about 83% of patients were male and 17% patients were female, and the mean and SD of age were 45.24 and ±7.24, respectively. It was found thatBMI(Body Mass Index), skip their meals, how many meals are eaten in a day, how does the food was eaten, take extra salt (pickles, chips, sauce, Chana Chur, salted biscuits etc.), eat protein everyday, eat carbohydrate everyday and eat carbohydrate everyday and eat vitamin D containing food (liver, Orange juice, butter, cheese, milk, egg etc.)were significantly associated with severity of the treatment.

Conclusion: This study has a limitation of time and funds to conduct more extensively. However, this study will enhance the knowledge on the role of dietary habits and nutritional status on the severity of covid-19 treatment.

Keywords: Dierary habit,Nurtitional status,severity of COVID-19 treatment.

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Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2),caused by OVID-19, was recognised as a pandemic by the WHO in 2020. Preparation of host to fight against the virus is an important strategy to avoid severity of COVID-19.Severity of COVID-19 has been associated with an underrecognised hyperinflammatory status that is characterised by increased TNF-α, IL-2, IL-7, macrophage inflammatory protein 1-α (CCL3), granulocyte colony-stimulating factor and interferon-γ inducible protein 10 which lead to destructive consequences to lungs, kidneys, heart, liver and other organs. Modern life style, with daily stress,and an unbalanced diet, can contribute to the initiation of a chronic low-inflammation status and ultimately negatively affect the immune system. Malnutrition, specifically undernutrition and overweight/obesity, alters the immune response, increasing the risk of infections from several pathogens such as influenza and coronavirus11-13 Nutritional status is also directly related to inflammation and, consequently, with the immune response11-14. The perception that nutritional status is associated with the response to infections is relatively recent. Several studies have shown that malnutrition causes changes in innate and adaptive immune responses, leading to greater susceptibility to infections.

It has been found that obesity is an independent risk factor for the severity of the disease, the length of hospitalisation and increased mortality. Pinheiro et al. 24 observed that the expression of angiotensinogen, angiotensin-converting enzyme (ACE2), IL-6 and TNF-α were significantly elevated in both malnutrition and obesity compared with the eutrophic group. According to the review by Briguglio et al.19, malnutrition and obesity trigger other diseases that can be

virulence factors increasing the severity of COVID-19.

Malnutrition and obesity are characterised as severe global public health problems and deserve attention, mainly during the COVID-19 pandemic17.Daily stress, sleep deprivation and a nutritionally unbalanced diet create a state of chronic inflammation, negatively affecting the immune system19-21 Diet is part of the modifiable contributors to the development and progression of chronic diseases. In this process, pro- or anti-inflammatory mechanisms are involved. In the context of COVID-19, a disease with intense inflammation, the cytokine storm generates an immune dysregulation that can lead to multiple organ failure and death14-17.In this process, pro- or anti-inflammatory mechanisms are involved.

A pro-inflammatory diet influences innate and adaptive immune responses and can promote allergic airway inflammation.Several diets with anti-inflammatory characteristics have a prominent role when associated with healthy, nutritionally balanced food choices aimed at maintaining weight, reducing cell stress and the full functionality of the body. These diets support the immune system, preventing, protecting and combating opportunistic infections and, consequently, may modulate the severity of these diseases in times of COVID-197-9 .Therefore, it is important to understand the role of diet in inflammation, deficiencies or excesses, and its pro- or anti-inflammatory impact.

During the SARS-CoV-2 pandemic, the world population is experiencing stress characterised by nervousness and, mainly, fear about the future consequences related to the effects of the disease which have changed out dietary pattern which in turn change the nutritional status of individuals and unfortunately in most cases this change is negatively affecting our health outcome.Thus, the relationship between eating habits, nutritional status and their effects on the immune response and seerity of COVID-19 is an important.

Study Objectives

General Objective

To determine the relationship between history of dietary habits and nutritional status on the severity of covid-19 treatment

Specific objectives

To determine the history of dietary factors and severity of the covid-19 after adjust the sociodemographic.
To find out the co-morbidities of Covid-19 patients.
To assess the dietary pattern of Covid-19 patients

Method

Study Design
Study design of this study was online based descriptive Cross-Sectional Study.

Target Population
Target population of this study was the adult residents of Dhaka city.

Study Site & Area
Data was collected by face-to-face interview.

Study Period
The study was conducted from May 17th 2020 to December 31st 2020.

Sample Size
The following formula will be used to calculate the sample size.
$n=(z^2pq)/d^2$
Where,
n = Desired sample size
  = the normal standard deviate (level of statistically significant) which is set at 1.96 that corresponds to 95% of confidence level.
P = anticipated population proportion. (0.50)   [2]
q = 1- 0.50 = 0.50
d = degree of absolute precision, usually at 5%
For 95% level of confidence and 5% errors (to be allowed), the target sample size for p 50% set at:
$n = ((1.96)^2 (0.50)(0.50) / (0.05)^2$
  = 384

Inclusion Criteria
- Data was collected from 16-85 years old people.
- The respondents who were capable of independent communication and capable of giving informed verbal consent to this study.

Exclusion Criteria
- Under 15 years old children was excluded.
- Individuals who had refused to participate in the study.

Sampling technique
Convenient sampling technique was used to include all available respondents.

Data collection tools
Data was collected through a structured questionnaire. We pre-tested the questionnaire among 20 participants and then data was modified accordingly.The purpose of pre-testing was to determine if the questions were well understood and if the necessary data to address the objectives of the study were generated. No changes was made to the questionnaire after the pretest.

Data Management & Analysis Plan
After assortment of knowledge, this were checked and verified for consistency and reduction of errors. Thenceforth these information were transferred to an acceptable master sheet for process and sequent analysis. Information was entered to the pc and saved in applied mathematics Package for Social Sciences (SPSS) software package version 20.00. Quality and responsibility of collected information were re-checked. Acceptable applied mathematics analysis, calculation and take a look at was allotted to relate variable in line with the objectives of the study.

Result

Socio demographic information of Covid-19 patients
The Socio demographic information of the respondents has revealed that 13.3% of the patients were aged more than 40 years and the rest are belonging to less thanor equal to 40 yearswhere the mean of the age of the respondents were 42.85 (Table 1) . About 82.8% patients were male and 17.2% patients were female (Table 1). Among the respondents highest percentage of the patients were graduated (33.1%) (Table 1). Most of the patients were Muslim (85.7%) (Table 1). About 39.6% patient's income was 35000 BDT or above and most of the patients lived in the city area (75%) (Table 1). Our study has found that B+ (37.5%) was the highest prevalent blood group of the patients, 23.7% of the patients had A+ blood group and 20.8% of the patients had O+ blood group.(Table 1)

Table 1: Socio demographic information of Covid-19 patients

Variable	Level	Frequency (N)	Percentage (%)
*Age Group	≤40 years	333	86.7
	>40 years	51	13.3
Gender	Male	318	82.8
	Female	66	17.2
Education level	Illiterate	1	0.3
	Primary	9	2.3
	SSC	54	14.1
	HSC	95	24.7
	Graduated	127	33.1
	Graduated and Above	98	25.5
Religion	Muslim	329	85.7
	Hindu	55	14.3
Monthly Family Income	5000-15000	25	6.5
	16000-25000	85	22.1
	26000-35000	122	31.8
	35000 and above	152	39.6
Residence	City	288	75.0
	Rural	96	25.0
Family stays with the respondents	Yes	273	71.1
	No	111	28.9
Blood Group	A+	91	23.7
	A-	6	1.6
	B+	144	37.5
	B-	12	3.1
	AB+	33	8.6
	AB-	7	1.8
	O+	80	20.8
	O-	11	2.9
Marital status	Married	313	81.5
	Unmarried	56	14.6
	Divorced	15	3.9

*The Mean ±SD of the variable Age is 42.85±13.82. Based on the mean value the variable age has been categorized in two category (≤40 years, >40 years).

The working duration among the respondents shows that a majority (38. 3 percent) of the respondents were working for about 10 hours, while the second majority of the respondents are working for 8 hours (22.1 percent). About 18 percent of the respondents were working for 12 hours while 8.1 percent respondents are working for more than 12 hours (Figure 1) .
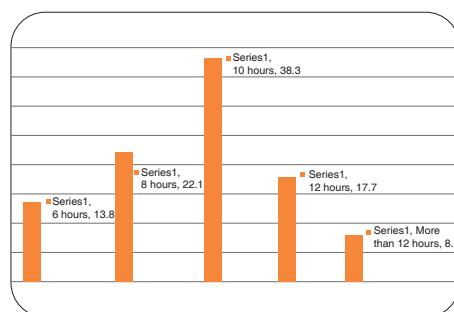

Figure 1: Working duration of the respondents

Perofessional profile shows that majority were belongs to government service holder (43%). The second majority are private service holder (17.7 percent). About 10.2 percent of the respondents were housewife while 3.4 percent of the patients were student (Figure 2).
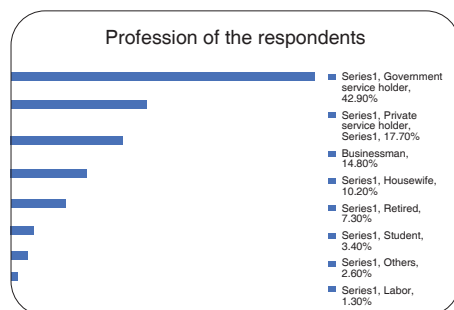

Figure 2: Distribution of the Profession of the respondents

Figure 3 shows that the majority of the patients were contaminated by the virus due to abroad travelling while the second majority were contaminated due to shopping. Very few were did not know the causes of their contamination while 12.8 percent of the respondents thought that they were affected by Covid-19 due to mass gathering.
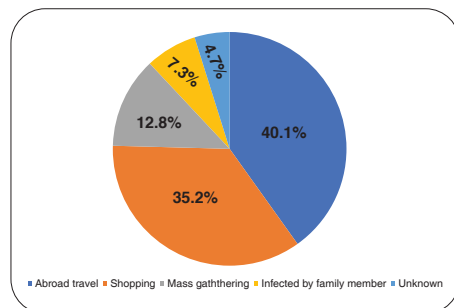

Figure 3: Causes of contamination among the respondents

Relationship between Dietary pattern and severity of the treatment

The relationship between Dietary pattern and severity of the treatment had been showed in table 2. The variable BMI(Body Mass Index), skip their meals, how many meals are eaten in a day, how does the food was eaten, take extra salt (pickles, chips, sauce, Chana Chur, salted biscuits etc.) were found significantly associated with severity of the treatment.

Table 2: Relationship between Dietary pattern and severity of the treatment

Variable		Severity of the treatment			P-value
		Mild	Moderate	Severe	
		%	%	%	
BMI	<18.5 (Underweight)	10.2	82.2	7.6	P<.01
	18.5-24.9 (Normal)	37.5	41.7	20.8	
	25.0-29.9 (Overweight)	20.6	46.7	32.7	
	30.0-34.9 (Obese-1)	19.8	48.1	32.1	
	35.0-40.0 (Obese-2)	9.1	84.1	6.8	
Skip their meals	Yes	22	48.1	29.9	P<.01
	No	17.5	52.5	30	
How many meals are eaten in a day	2 Meals	22.1	49.3	28.6	P<0.1
	3 Meals	14.3	53.6	32.1	
	4 Meals	19.5	51.6	28.9	
	5 Meals	20.0	26.7	53.3	
How does the food waseaten	Fried	37.5	41.7	20.8	P<0.01
	Boiled	26.7	50	23.3	
	Extra spicy	19.7	49.2	31.1	
	Mild spicy	21.3	50	28.7	
Eat outside food more often than homemade food	Yes	19.6	50	30.4	P>0.1
	No	22.1	48.7	29.2	
Eat processed food (junk food, tin food, frozen & preserved food)	Yes	20.6	49.1	30.3	P>0.1
	No	20.5	50.0	29.5	
Take soft drinks constantly	Yes	21.7	46.7	31.6	P>0.1
	No	18.6	54.3	27.1	
Take extra salt (pickles, chips, sauce, Chana Chur, salted biscuits etc.)	Yes	17.5	47.1	35.4	P<.01
	No	24.2	52.2	23.6	
Like sweets and sweetened foods	Yes	19	52.8	28.2	P>0.1
	No	22.6	45.2	32.2	

Figure 4 showed the relationship between the severity of the treatment and take meals according to body need or daily requirement which revealed that the relationship is significant at p< 0.1 level. It was revealed that among the respondents about 46.9 percent were taken their daily requirement but also had to take moderate level of treatment while 29.2 percent were taken their daily requirement but also had to take severe level of treatment.
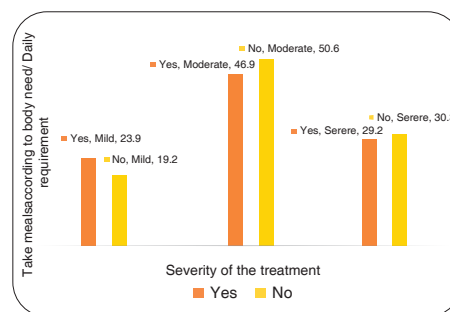

Figure 4: Relationship between the severity of the treatment and Take meals according to body need/ Daily requirement

Relationship between nutritional status and severity of the treatment
The relationship between nutritional status and severity of the treatment had been showed in table 3 which revealed that the variable eat protein everydaywas significantly associated with severity of the treatment with a level of p<0.1. eat carbohydrate everyday and eat vitamin D containing food (liver, Orange juice, butter, cheese, milk, egg etc.)

Table 3:Relationship between nutritional status and severity of the treatment

Variable		Severity of the treatment			P-value
		Mild	Moderate	Severe	
		%	%	%	
Eat vegetables everyday	Yes	20.7	50.9	28.4	P>0.1
	No	20.5	48.9	30.6	
Eat colorful fruits everyday	Yes	19.5	51.8	28.7	P>0.1
	No	21.1	47.4	31.5	
Eat protein everyday	Yes	26.4	54	19.6	P<0.1
	No	18.9	48.1	33	
Eat fatty food (oil, butter, cheese, ghee) everyday	Yes	21.4	47	31.6	P>0.1
	No	18.6	55.1	26.3	
Eat cholesterol (saturated food) everyday	Yes	19.5	47.3	33.2	P>0.1
	No	21.8	52.0	26.2	
Eat in the restaurant every day	Yes	21.3	50.2	28.5	P>0.1
	No	19.6	48.5	31.9	
Sour curd and Vinegar are included in the everyday meal	Yes	17.2	47.4	35.4	P>0.1
	No	35.2	47.1	27.3	
Green chili and lemon are included in the everyday meal	Yes	18.7	47	34.3	P>0.1
	No	21.6	50.8	27.6	
Sun exposure	Yes	26.4	54.1	19.5	P>0.1
	No	18.9	48.1	33	

The following figure (Figure 5) showed that , eat carbohydrate everyday was significantly associated with severity of the treatment with a level of p<0.1. It was found that 19.6 percent of the respondents were wat carbohydrate everyday but had to take mild level of treatment while 32.1 of total carbohaydrateintaker had to take severe level of treatment.
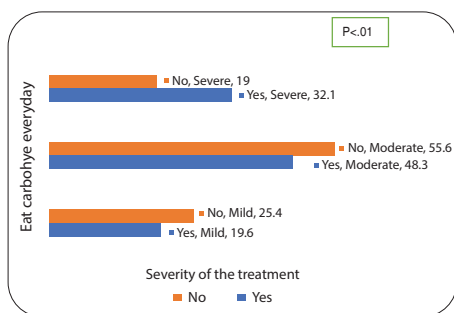
Figure 5: Relationship between carbohydrate intake and severity of treatment

With similar to the previous one, the following figure (Figure 6) reflected that , eat vitamin D containing food (liver, Orange juice, butter, cheese, milk, egg etc.)was significantly associated with severity of the treatment with a level of p<0.1
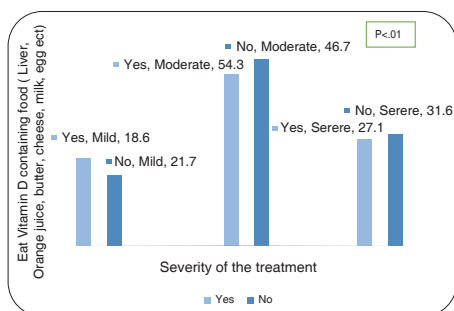

Figure 6: Relationship between the severity of the treatment and Eat Vitamin D containing food (Liver, Orange juice, butter, cheese, milk, egg etc.)

Discussion

This study aimed to determine the role of dietary patten and nutritional status on Covid 19 patients. For identifying the role of dietary patten and nutritional status on Covid 19 patients, 384 patients with COVID-19 attending corona unit of a private hospital in Dhaka city had been surveyed. Findings showed that 13.3% of the patients were aged more than 40 years and the rest are belonging to less thanor equal to 40 years. About 82.8% patients were male and 17.2% patients were female. Prevalence of this higher percentage of male than the female is due to the fact that more male are affecting in Covid than the female in the context of Bangladesh.

Among the respondents highest percentage of the patients were graduated (33.1%). Most of the patients were Muslim (85.7%) which is a common phenomena as majority of the people of Bangladesh is Muslim. About 39.6% patient's income was 35000 BDT or above and most of the patients lived in the city area (75%). Our study has found that B+ (37.5%) was the highest prevalent blood group of the patients, 23.7% of the patients had A+ blood group and 20.8% of the patients had O+ blood group.

This study also found that the relationship between dietary

pattern and severity of the treatment had been significant for the most of the variables of dietary pattern. The variable BMI(Body Mass Index), skip their meals, how many meals are eaten in a day, how does the food was eaten, take extra salt (pickles, chips, sauce, Chana Chur, salted biscuits etc.) were found significantly associated with severity of the treatment. In this study it was found that who consumed mild spicy food, 28% of them needed severe treatment procedure and this finding is also similar to a study in which they have found that mild spicy foods are very vulnerable for covid-19 patient 20. The participants who ate outside food, they needed more treatment rather than the participants who ate homemade food; another study has also found that outside foods are very vulnerable for covid-19 patients 21. The participants who ate processed food like junk food, tin food, frozen & preserved food, took soft drinks constantly, took extra salt like pickles, chips, sauce, Chana Chur, salted biscuits, they are most needed of severe type of treatment. Participants who ate vegetables, colorful fruits and proteins every day, they were cured fast rather than the other people and this findingsis also similar to another study22.On the other hand, the participants who ate fatty food and cholesterol food every day, they needed more treatment rather than the other people and another study has also found that this sort of food are also very threatening for the covid-19 patient23. A study in Italy has found thet modified diet plan can significantly reduce the covid-19 treatment exposure 24.

Furthermore, the relationship between nutritional status and severity of the treatment had been assessed in this study which revealed that the variable eat protein everyday, eat carbohydrate everydayand eat carbohydrate everyday and eat vitamin D containing food (liver, Orange juice, butter, cheese, milk, egg etc.) were significantly associated with severity of the treatment. In line with this it should be mentioned that another study regarding the nutrition in Covid-19 situation portrayed that optimal nutrition and dietary intake is necessary to resilience against destabilization of physical and mental health due to Covid-1925. That is nutritional status and dietary intake play a vital role for theCovid-19 patients and so the severity of treatment largely depends on both of these-nutritional status and dietary intake.

Conclusion

This study aimed to explore the role of dietary pattern and nutritional status on Covid 19 patients. By assing the relationship of dietary intake and nutritional status with the severity of treatment among the Covid-19 patients, it had found that BMI(Body Mass Index), skip their meals, how many meals are eaten in a day, how does the food was eaten, take extra salt (pickles, chips, sauce, Chana Chur, salted biscuits etc.), eat protein everyday, eat carbohydrate everyday and eat carbohydrate everyday and eat vitamin D containing food (liver, Orange juice, butter, cheese, milk, egg etc.) were found significantly associated with severity of the treatment. That is, nutritional status of individuals and dietary intake play a vital role in the treatment of the Covid-19 patients and so this study recommends that individuals should take balanced diet in their dialy intake specially there should have intake practice of protein, carbohydrate and

vitamin D enriched food. Moreover, the implementation of a systematic management of the dietary and nutritional intake of COVID-19 patients is essential toguarantee an optimal dietary pattern and nutritional status and to improveclinical outcomes

However, some short comings had been arise at the time of conducting this study. Due to this pandemic situation, different types of information's could not be collected. Inavaialability of sufficient number of journal article related to this work make the conduction of this study tough. Moreover, as COVID-19 is a viral disease, it was not possible to talk with patient with longer time and there was a chance of contamination. Furthermore, we have provided the data on the Bangladeshi population dietary habit, nutritional status during the COVID-19 lockdown. The sample size of this study was so small. It was not included critical patients due to the requirement of emergency management. Therefore, our findings could not be generalized in the context of Bangladesh.It would be better is the data was collected from several hospital of several district of Bangladesh. Further clinical studies are needed todraw up adequate dietary pattern and nutritional protocols. But definitely, this study will enhance our knowledge regarding the role of nutritional status and dietary intake on the treatment of Covid-19 patients.

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Case Report

Recurrent Vaginal Breech Delivery

Barkat S [1] , Hasan KMM [2]

ABSTRACT

Background: Breech is the commonest malpresentation. Several predisposing factors are responsible for breech presentation. Vaginal Breech delivery is usually associated with increased fetal injury. So C-section is often preferable. However both has its own demerits and merits.

Case presentation: Here we present a case of 30 years old 3rd gravida admitted with labor pain and delivered a 3300 gram male baby.This is her 3rd vaginal breech delivery.

Conclusion: Breech presentation is a dilemma to obstetrician. Some prefer C-section, while expert obstetrician allow vaginal delivery. In this case report we tried to discuss the possible reasons of repetitive breech delivery.

Keywords: Recurrent Breech, Vaginal Delivery

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Introduction

When the buttocks of the fetus occupies the lower pole of the uterus, in longitudinal lie, it is called breech presentation. It is the commonest malpresentation.[1]

The incidence is 5% at 34th week dropping to 3-4% at term. [1] Depending on the fetal attitude, breech is either flexed variety with thighs flexed at hips and legs flexed at knees, extended variety with legs extended and rarely footling presentation where the flexed legs are present at the brim.[2]

Predisposing factors for Breech are Uterine Malformations, Short Cord, Pelvic Tumors, Oligohydromnios, Placenta Praevia, LBW, Contracted Pelvis and Prematurity.[2] These factors contribute to 15% of the variance of Breech Presentation [3-5] other etiology such as failure of spontaneous version to cephalic is not clear. [3,4,5]
Vaginal Breech Deliveries are associated with increased incidence of intracranial hemorrhage, Birth Asphyxia and Birth Injuries.[1] So some prefer C-section in such cases. On the other hand skilled and experienced obstetricians allow VD under strict surveillance.

Case report

A 30 years old 3rd gravida, singleton pregnancy at term was admitted to the delivery unit with regular uterine contractions; 3 in every 10 minutes, each lasting for about 20-30 seconds. Obstetrical examinations revealed frank breech presentation,

cervical OS 6 cm, station (-2), meconium stained. FHR was between 130-150 beats/minute, throughout labour. The labour was monitored using partograph. After 2 ½ hours, a healthy male baby weighing 3300 grams was delivered. APGAR was 8 in 1st minute and 10 on 5th minute.
Following delivery uterus was explored for anomalies, myoma or septum but found none. A PPIUCD was introduced. The length of the umblical cord measured and found 40 cm.

Her past obstetrical history was uneventful except history of repetitive breech presentation of all previous deliveries. The mother and neonate was discharged on the 3rd post-natal day and the puerperium was uneventful.

Gest week at delivery	1st preg	2nd preg	3rd preg
	39	40	39
Mode of delivery	Vaginal	Vaginal	Vaginal
Birth Wt(gm)	2700	2680	3300
Birth Length(cm)	51	50	52
Gender	Female	Female	Male
APGAR score	8/10	9/10	8/10
Congenital Disorders	None	None	None
Length of Umblical Cord	Not known	Not Known	40 cm
Maternal weight gain	13 kg	12 kg	13 kg
PROM	Yes	Yes	Yes
Placental weight(gms) Placental localization	Not known Fundal	Not Known Fundal	430gm Anterior
Smoking	None	None	None
H/O previous C-delivery	None	None	None

Table 1: The clinical data of all deliveries.

Discussion

There are a lot of complications associated with vaginal breech deliveries. Some obstetricians prefer C-section while there exist obstetricians who can deliver breeches without fetal injury. In our case the patient underwent uncomplicated vaginal breech deliveries thrice. In this section we will try to explain some possible reasons of this rare obstetric situation. Several fetal and maternal factors predisposes to breech presentation but most studies found a relationship between placenta praevia and fundal localization of placenta.[6,7] The important cause of repetitive breech was uterine anomalies and cornu fundal attachment of the cord.[1] Adinma Studied 1000 cases of breech fetuses and found shorter umbilical cords than those of cephalic fetuses. The average length of umblical cord is 51 cm.[8] In our case the length was 40 cm. Umbilical Cord measurement of the 1st and 2nd pregnancies was not available. But we presume it was short like the 3rd pregnancy.

A study revealed higher incidence of breech in fetuses with increased placental weight, but the reason was not clear.[9] In our study the weight of the placenta was normal i.e. 430 gram. Placental weight of the 1st and 2nd pregnancies was not documented and it is presumed to be normal.

Rayl et al[10] highlightened smoking as a risk factors for breech presentation. But in our case, the women is a non smoker.

Vendittelli et al[11], found that women with previous C-section presents with breech than women with vaginal delivery. But this information is not in agreement with our data.

Nordtveit et al[12] showed that breech may have an inherited pattern. That means women or men who were born breech at term, may contribute to breech delivery in their children.
Breech deliveries have a racial predominance thus it is seen in white races has 69% higher risk for breech delivery than black women[13]
Usually breech has a 15% risk of recurrence.[14] The risk of recurrence in 2nd pregnancy is 3.2 and in a 3rd pregnancy is 13.9.[15]

Conclusion

Thus in summary we conclude several factors contribute to recurrence of breech but none seems to be conclusive. So further studies regarding the cause of breech must be evaluated.

Conflicts of Interests: The author declare that there is no conflict of interests.

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Case Report

Mucocele of Appendix in Surgical Practice: Case Report of a Rare Surgical Pathology.

Faruquzzaman [1]

ABSTRACT

Statistics of different research suggest that in surgical practice, mucocele of appendix is an exceedingly rate situation. In many circumstances, it may be associated with severe complications and consequences. A female patient was admitted in Khulna Medical College Hospital, Bangladesh on emergency basis. The story of this patient is going to be reported in this case report.

Key Words: Mucocele of appendix, outcome, complication, consequence.

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Introduction

Mucocele of appendix is an obstructive dilatation of the appendiceal lumen, resulting intraluminal accumulation of mucoid material. The overall incidence is in between 0.2% to 0.7% of all appendectomy specimens, reported in different studies.[1,2,3] This rare pathology is usually characterized by one of four patterns of epithelial proliferation: retention cyst, mucosal hyperplasia, mucinous cystadenoma and mucinous cystadenocarcinoma.[4,5] Most often, the diagnosis is confirmed during operation. As mucocle of appendix is rare, it does not follow any typical clinical scenario or consequences. Most often the patient has pain in the lower right quadrant of the abdomen; therefore a surgeon may mistake it for acute appendicitis. Clinical presentation usually varies within a wide range. Sometimes it may be incidentally detected in a patient for another condition.[3,6,7] If treatment is not judicious, epithelial cells may escape into the peritoneal cavity resulting pseudomyxoma peritonei. It is a very troublesome condition with a high morbidity and mortality.[7]

Case Presentation

A 62 years house-wife was referred to Khulna Medical College Hospital, Bangladesh with acute intestinal obstruction and septic shock. Before that, she was admitted in a private clinic for the last 10 days. On examination the patient was haemodynamically unstable. According to her relatives, she was relatively and reasonably alright about 2 weeks back. Then she developed pain in the right lower quadrant with vomiting for the first few days. The pain was colicky and soon the frequency and intensity of the pain becomes so severe. Later on the pain was dull constant through whole abdomen with maximum intensity in lower abdomen. For the last few days, abdomen was distended with history of developing absolute constipation. The patient has history of hypertension for the last 12 years with diabetes mellitus for the last 20 years. However, she had no previous history of acute appendicitis. On examination, the patient was in shock with disorientation.
On investigation, the patient was anaemic with neutrophilic

leukocytosis with hyponatremia. On plain radiograph of abdomen, there were signs of small intestinal obstruction. On ultrasonography of abdomen, there was evidence of intestinal obstruction. CT scan was not done. After immediate resuscitation, laparotomy was done on emergency setup. During operation, jejuno-ileum was hugely distended with gross gangrene of 20 cm of terminal ileum. Necrosed loop formed an inflammatory mass with omentum at caecal region. After resection of the gangrenous loop with necrosed part of omentum, appendix was separated and a mucous distended grossly swollen, inflammed, oedematous appendix was found, which was resected. The lumen was completely obstructed with faecolith. Resected specimen was sent for histopathology.

Figure 1: Resected specimen of mucocle of appendix.

Figure 2: Inflammed, swollen, oedematous distended appendix.

Figure 3: Faecolith obstruction of the lumen of the appendix.

The patient had a stormy postoperative period in ICU for 05 days. Then her condition was settled gradually and initially was transferred to HDU. On 7th postoperative day, she was sent to general ward and eventually she was discharged from hospital on 10 postoperative day.

Discussion

When there is an intra-luminal obstruction of the appendix, in rare situation it may result huge dilation of the appendix, which may be associated variety of clinical feature. Usually appendix is distended with accumulation of mucoid material.[1,2] In many clinical circumstances, the mucocele may progress to pseudomyxoma peritonei and other infective and catastrophic complications.[1,7] Mucocele of the appendix falls under the category of rare case presentation with an incidence of 0.2% to 0.7% of all excised specimen of appendix.[8] Most often, it is associated with high morbidity and mortality rate. The appendix is lined by epithelium containing more goblet cells than the colon.[7] Most often, CT scan of the abdomen plays an important role for the diagnosis of such rare pathology. Operation must be done on time to prevent avoidable and catastrophic complications.[9] All excised appendix should be sent for histopathological examination.

Ethical Implication

Ethical clearance was taken individually from patient and from the ethical review committee of Khulna Medical College Hospital.

Conclusion

Mucocele of appendix is a rare but troublesome surgical condition with catastrophic outcome, if surgery is not done timely and judiciously.

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Case Report

Unusual Imaging Appearance of A Cystic Meningioma- A Case Report

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ABSTRACT

Meningiomas are common tumors of the central nervous system but Cystic meningiomas are uncommon. Computed tomography scan and conventional magnetic resonance imaging of cystic meningioma with a mural nodule occasionally mimic gliomas or other intra-axial lesions. Recognition of this entity and keeping it as a differential diagnosis is important for surgical management. Incomplete removal of cystic components at surgery can lead to recurrence of a potentially curable tumor.

Keyword: Meningioma, Cystic Meningioma.

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Introduction

Meningiomas are usually benign lesions that account for 13-18% of brain tumours.[1,2] They are generally diagnosed preoperatively based on their imaging features. They appear as extra-axial tumours attached to the dura with marked enhancement after intravenous contrast injection.[3,4] Although imaging is typical for these lesions, there are many atypical forms, such as cystic meningioma, lipoblastic meningioma and meningioma in atypical positions.[5] Cystic meningiomas are rare, accounting for 4–7% of all meningiomas.[6,7] Cystic meningioma is rare and more frequently affects men.[8] It can easily be misdiagnosed as glial tumour, metastasis, neuroblastoma or haemangioblastoma.[9]
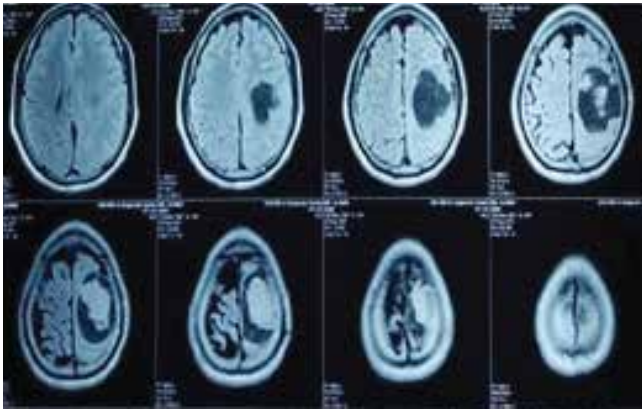
Clinical Case

A 34-year-old man came with history of 3 episodes of partial sensory seizure involving right half of his body in last 1 month. His medical history was unremarkable. Clinical examination and laboratory tests were within normal limits.

Radiological findings

Non-contrast CT scan was performed, showing a hypodense lesion in the left frontoparietal region, with definite margin. A isordense mural nodule was also noted situated at periphery (Figure 1). There was no perilesional edema. Such lesion was interpreted as an arachnoid cyst, due to its imaging features.
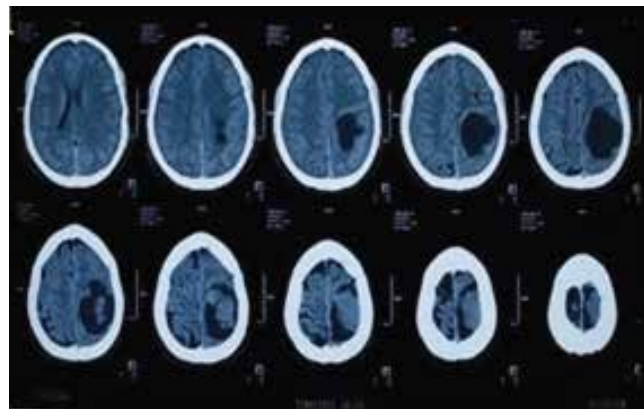

MRI of brain with contrast was done. Conventional sequences showed the lesion to be hypo to isointense on T1-weighted sequences and hyperintense on T2-weighted sequences, with a dominant cystic lesion and a mural nodule located at periphery in left frontoparietal region. After intravenous administration of contrast media, non-enhancement of the mural nodule was observed. There was no perileional edema seen.
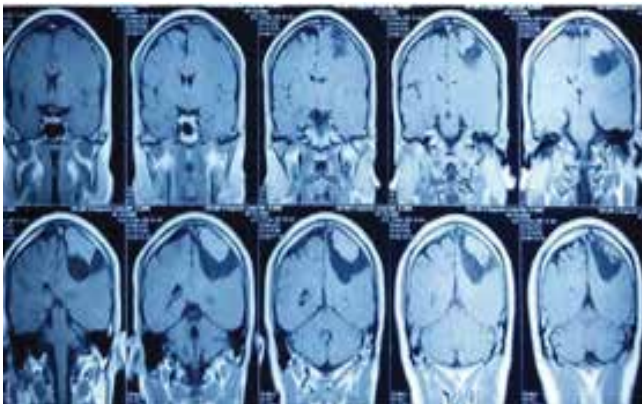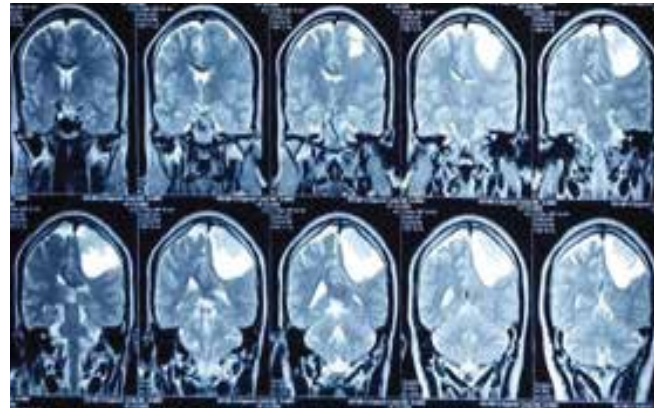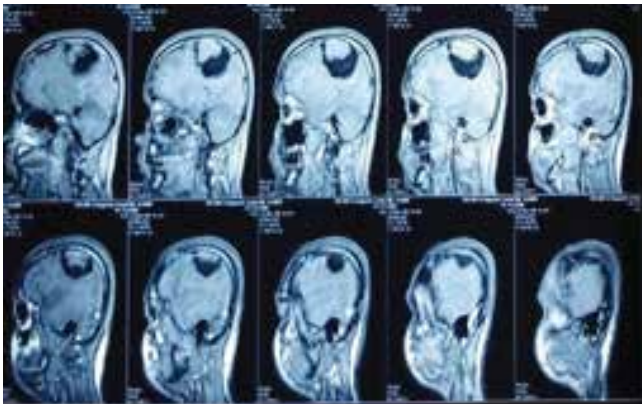
**T1WI axial (non-contrast)**
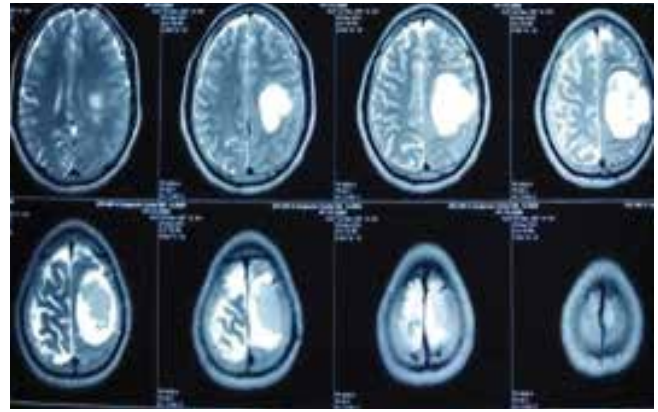
T2WI axial
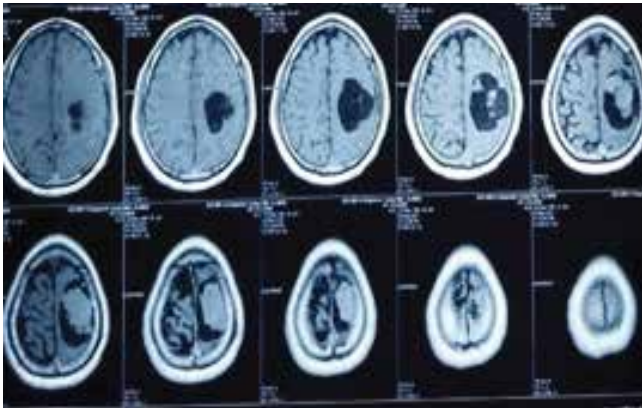
T1WI axial (contrast)

T1WI coronal (non-contrast)

The patient underwent surgery, the lesion was completely excised, and macroscopic features were the presence of a cystic lesion containing yellowish fluid. Mural nodule at periphery was adherent with the dura. So, adherent dura was also excised and repaired with pericranium. The whole lesion was extra-axial, grayish-white in color, moderately vascular and easily suckable. Tissue was sent for histopathology and result revealed Meningothelial Meningioma, WHO grade II.
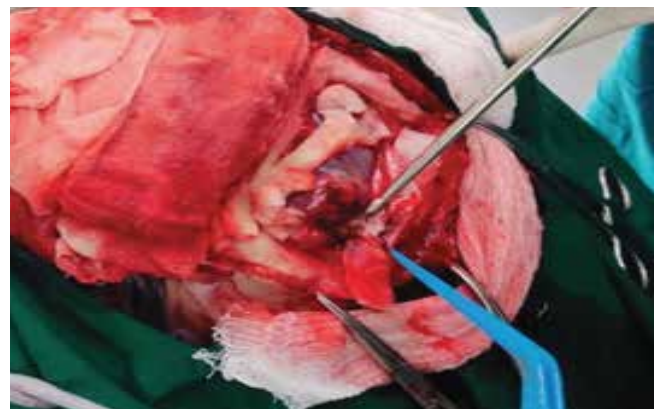
Per-operative image showing lesion adherent with overlying dura

T1WI sagittal (contrast)

Discussion

The most common site for the appearance of cystic meningiomas is the cerebral convexity, particularly the frontal and parietal lobes, while the cerebral falx is the second most frequent location.[10] The first report of cystic meningioma was by Penfield in 1932 .[11] Cushing and Eisenhardt reported 13 patients with cyst formation in a series of 313 intracranial meningiomas accounting for 4.2% of all cases.[12] A similar incidence was also described by other authors.[10,13] There is no consensus regarding the cause of cyst formation in meningioma. Penfield believes that it is due to central degeneration within the tumour.[11] Cushing suggested that the formation of cysts in cases of meningioma is due to xanthochromic fluid forming at the periphery and its coalescence leads to the formation of large cavities.[12]

Nauta et al., first described and classified cystic meningiomas based on their radiologic findings in 1979.[14] Amit Mittal et al., described the unusual imaging of such cystic meningiomas in 2010.[15] Riemenschneider MJ in 2006 described histological classification and molecular genetics of meningiomas in detail.[16] Ruelle A in 1985 has elaborated in detail the definition of a true cystic Meningioma.[17] Rengachary S in 1979 has elaborated the various cystic lesions associated with meningiomas.[18] Amin OSM in 2015 further described in detail various pathogenesis and treatment protocols for these lesions.[19]

Conclusion

Cystic meningioma is an uncommon form of meningioma and the radiological appearance and location of the cystic/solid components of the mass may create a diagnostic dilemma. Preoperative differentiation of cystic meningioma from other lesion in the brain is difficult to ascertain based on imaging studies. The difficulty can be confounded by an "atypical" presentation like the cases we reported here. This differentiation however, is crucial for surgical decision making. Every attempt should be made to excise the tumour including the cyst wall in order to minimize the risks of recurrence.

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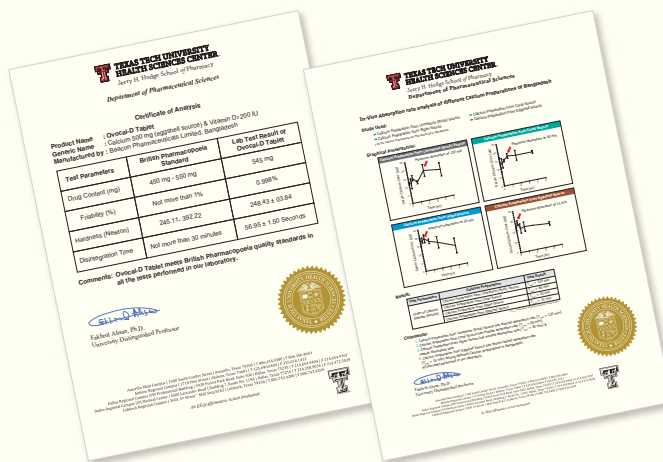
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