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Editor's choice

This is a pleasure for us that we are going to publish "The Beacon Medical Journal" volume-03, number-02 in July 2020. Next issue will be published in January 2020. The journal has been published 2 issues/year as regular basis. Ten thousands copies have been distributed to graduate doctors throughout the country by our field colleagues. Already we had build a strong advisory review board to draw the attention of it's authors & readers nationally & internationally. Editorial of this issue is coronavirus (COVID-19) infection and pregnancy (p-01). Now COVID-19 is a pandemic disease and affects all humans including pregnant women. It may cause severe adverse pregnancy outcomes such as miscarriage, premature delivery, IUGR and maternal death. In this issue, transmission of COVID-19 in fetus, diagnostic procedure of both mother and fetus & risk factors are nicely described. Apart from that this issue also contains seven original articles & two case reports.

Your opinion and suggestions will highly encourage us for the development of the journal. The journal is freely available at www.beaconpharma.com.bd for contributing the advancement of public health and medical research.

I do believe this journal will scientifically help doctors in their daily practice.

Dr. G.M. Raihanul Islam
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The Beacon Medical Journal

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    a. Title page
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11. The Abstract should be structured as-introduction with objectives, materials & methods, result, discussion with conclusion including key words number of figures, tables, reference & correspondence

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    e. Tables: Number and titles of tables to be clearly written.
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Editorial

Coronavirus (COVID-19) Infection and Pregnancy

Coronaviruses responsible for severe acute respiratory syndrome (SARS) can cause severe adverse pregnancy outcomes, such as miscarriage, premature delivery, intrauterine growth restriction, and maternal death. [1, 2] Vertical transmission of the virus responsible for 2019 novel coronavirus disease (COVID-19), severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has not yet been detected, whereas perinatal transmission has been suspected in one case. [3] Consequences of infection with SARS-CoV-2 for pregnancies are uncertain, with no evidence so far of severe outcomes for mothers and infants; however, the possibility should be considered. [4]

Most global cases of COVID-19 have evidence of human-to-human transmission. This virus can be readily isolated from respiratory secretions, faeces and fomites (objects). Transmission of the virus is known to occur through close contact with an infected person (within 2 metres) or from contaminated surfaces. Pregnant women do not appear more likely to contract the infection than the general population. [5, 6] Pregnancy itself alters the body's immune system and response to viral infections in general, which can occasionally cause more severe symptoms. This may be the same for COVID-19 but there is currently no evidence that pregnant women are more likely to be severely unwell needing admission to intensive care or die from the illness than non-pregnant adults. [7]

With regard to vertical transmission (transmission from woman to her baby antenatally or intrapartum), emerging evidence now suggests that vertical transmission is possible.[8] There are, however, serious limitations to the available evidence. [9]

Two reports have published evidence of IgM for SARS-CoV-2 in neonatal serum at birth.[10, 11] Assuming that IgM does not cross the placenta, this would suggest a neonatal immune response to in utero infection. It is uncertain in these cases whether the IgM levels resulted from cross reactivity as there was no evidence of SARS-CoV-2 in the infant's nasopharyngeal swabs or in the mother's vaginal secretions or breastmilk on PCR testing. [9 12]

Moreover, the proportion of pregnancies affected and the significance to a neonate has yet to be determined. In the interim report from the UK Obstetric Surveillance System (UKOSS), 2.5% of babies (n=6) had a positive nasopharyngeal swab within 12 hours of birth. [13] In a systematic review of 24 pregnant women with COVID-19, there was no evidence of SARS-CoV-2 on PCR testing of placenta, amniotic fluid, cord blood or breastmilk samples. [14] Further investigation around vertical transmission is required and is underway. [9]

It is known that, whilst pregnant women are not necessarily more susceptible to viral illness, physiological pregnancy related changes to their immune system in pregnancy can be associated with more severe symptoms. [15] This is particularly true in the third trimester.

There is evolving evidence within the general population that there could be a cohort of asymptomatic individuals or those with very minor symptoms who are carrying the virus, although the prevalence is unknown. Most pregnant women will experience only mild or moderate cold/flu-like symptoms. Cough, fever, shortness of breath, headache, anosmia and loss of taste are other relevant symptoms. [16] More severe symptoms which suggest pneumonia and marked hypoxia are widely described with COVID-19 in older people, the immunosuppressed and those with chronic conditions such as diabetes, cancer or chronic lung disease. [17] The symptoms of severe infection are no different in pregnant women and early identification and assessment for prompt supportive treatment is key. Two case series have been published by clinicians in New York which suggest possible patterns of disease in pregnant women. The first describes 43 pregnant women who tested positive for SARS-CoV-2 and reported a similar pattern of disease severity to non-pregnant adults: 86% mild, 9% severe and 5% critical, although the sample size was too small to draw a definitive conclusion and no comparison was made for age, sex or comorbidity-matched indivduals. [18] The second describes the results of screening all 215 women who attended two paired maternity units for labour and birth over a 2-week period. [19] Of these women, 13% (n=33) tested positive for SARS-CoV-2 from nasopharyngeal swabs on attendance to the hospital, although only four (1.9% of all women) had symptoms of COVID-19 on attendance. 88% of those testing positive were asymptomatic.

Risk factors that appear to be associated with hospital admission with COVID-19 illness include:
1. Black, Asian or minority ethnicity (BAME)
2. Overweight or obesity
3. Pre-existing comorbidity
4. Maternal age >35 years

The characteristics of women admitted to hospital with COVID-19 in the data from the UKOSS study were compared with controls derived from a historical cohort of women giving birth between 1 November 2017 and 30 October 2018 (n=694). Pregnant women admitted to hospital with COVID-19 during the 2020 pandemic were more likely to be of black or other minority ethnicity (adjusted odds ratio [aOR] 4.49, 95% CI 3.37–6.00), have pre-existing comorbidity (aOR 1.52, 95% CI 1.12–2.06), be aged over 35 years (aOR 1.35, 95% CI 1.01–1.81) or be overweight (BMI of 25–29 kg/m2) or obese (BMI 30–39 kg/m2; aORs 1.91, 95% CI 1.37–2.68 and 2.20, 95% CI 1.56–3.10, respectively). This suggests that women with these risk factors were disproportionately represented in hospital admissions with or for COVID-19. [13]

The association with BAME is particularly apparent and echoes previous findings that UK BAME pregnant women have worse outcomes in maternity. [20] Furthermore, 13% of the UK's total population identifies as being from a BAME background, but 55% of all individuals admitted to UK critical

care for COVID-19 illness are from BAME backgrounds and individuals from BAME backgrounds are more likely to die from COVID-19. [7, 20]

In the case of COVID-19, it has been postulated that this association may be related to socioeconomic or genetic factors, or differences in response to infection; however, further research is needed. [13 28] It is estimated that vitamin D deficiency affects over 1 billion people worldwide. Vitamin D deficiency is associated with Acute Respiratory Distress Syndrome (ARDS) which is seen in COVID-19 infection. [29 30] Women of BAME background with melanin pigmented skin often develop vitamin D deficiency; it is estimated that as many as 94% of the South Asian population in the UK are affected by vitamin D deficiency in the winter. [31] Recently, vitamin D supplementation has been suggested to be beneficial in reducing the risk of respiratory tract infections, although data are limited.32 The current UK advice recommends vitamin D supplementation to all individuals of BAME background, regardless of the COVID-19 pandemic. [33] In addition to the UKOSS study, which showed that pregnant women with a BMI ≥25 kg/m2 were more likely to be admitted to hospital with COVID-19 than the historical controls, other studies in non-pregnant populations have shown a similar trend in terms of worse outcomes for individuals with BMI >25kg/m2. [13] The UK ICNARC weekly report also found that 74% of those patients admitted were overweight or obese; 35% of admitted individuals had a BMI of 25–29 kg/m2 (overweight), 31% a BMI of 30–39 kg/m2 (obese) and 7.7% a BMI ≥40 kg/m2. [27] Pre-existing diabetes mellitus or gestational diabetes affects 5% of pregnant women in the UK, although 88% of women with diabetes in pregnancy are affected by gestational diabetes. [34] In the UKOSS study, comorbidities such as diabetes were associated with pregnant women being admitted to hospital with COVID-19. [13] In non-pregnant individuals, a UK study of 20,133 patients admitted to high dependency and intensive care with COVID-19 found uncomplicated diabetes was one of the most common comorbidities (21%, 3650/17, 599); a further 7% (n=1299) of individuals had complicated diabetes.[35] Lifestyle measures such as regular exercise, a healthy diet and vitamin D supplementation are recommended in pregnancy and throughout life to prevent obesity, type 2 diabetes mellitus and vitamin D deficiency. [1]

There are currently no data suggesting an increased risk of miscarriage in relation to COVID-19. Case reports from early pregnancy studies with SARS-CoV and MERS-CoV have not demonstrated a significant relationship between infection and increased risk of miscarriage or second trimester loss. [36] In the UKOSS cohort, the median gestational age at birth was 38 weeks (IQR 36–39 weeks). Of women who gave birth, 27% had preterm births: 47% of these were iatrogenic for maternal compromise and 15% were iatrogenic for fetal compromise, with 10% of term babies requiring admission to the neonatal unit. Six (2.5%) babies had a positive test for SARS-CoV-2 during the first 12 hours after birth; three of these were in babies born by pre-labour caesarean birth. One of these babies required admission to the neonatal unit. It was unclear from the report whether two perinatal deaths were related to co-existing maternal COVID-19. [13] A review of 71 neonates delivered to women with COVID-19 in the third trimester reported that neonatal infection was diagnosed in 4 cases (5.6%) within 48 hours of delivery by PCR tests of cord and neonatal blood samples. [8]

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Original Article

Role of Probiotics in Reducing Sepsis in Preterm Low Birth Weight Neonates: a Randomized Controlled Trial

Husain K S [1], Chowdhury M.A.K A [2], Begum J A [3]

ABSTRACT

Introduction: FAO and_WHO defines probiotics as live microorganisms that, when administered in adequate amounts, confer a health benefit on the host. Colonization of the GI tract with probiotics competitively inhibits attachment of bacterial pathogens, decreasing their likelihood for colonization and therefore preventing life threatening infections. In this study a randomized controlled trial was done to find the role of probiotics in reducing sepsis in preterm LBW neonates.

Objective: To find out the role of probiotics in reducing sepsis in preterm low birth weight neonates.

Method: One hundred neonates were enrolled by convenient sampling, according to inclusion and exclusion criteria. They were randomly allocated to experimental and control groups by lottery done by drawing an enveloped paper from a total collection of 100 envelops; 50 for each group. Neonates in the intervention arm received probiotics supplementation with feeding, started with introduction of enteral feeding and continued till discharge or death. Neonates with feeding only without probiotics supplementation were in the control arm. Quantitative data were expressed as mean and standard deviation and comparison was done by two sample unpaired t test. Qualitative data was expressed as frequency and percentage and comparison was carried by Chi-square (x2) test.

Results: Development of sepsis was significantly less [3 (6.1%) vs. 10 (20.0%); P = 0.04] in probiotics supplement group than control group.

Conclusion: Oral probiotics supplementation reduces the proportion of sepsis in preterm low birth weight neonates.

Key Words: Probiotics, Sepsis, Preterm, Low birth weight.

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Introduction:

Globally, sepsis is still one of the major causes of morbidity and mortality in neonates, in spite of recent advances in health care units. Preterm LBW neonates have compromised immune function. Preterm birth is truly a great problem in Bangladesh_and_WHO showed Bangladesh_in_the_7th position amongst the countries. The concept of probiotics was_introduced_by_Metchnikoff_(Russian_scientist). FAO/WHO defines probiotics as live microorganisms that, when administered in adequate amounts, confer a health benefit on the host. Colonization of the GI tract with probiotics competitively inhibits attachment of bacterial pathogens, decreasing their likelihood for colonization and therefore preventing life threatening infections. Meta_analyses of probiotics supplementation_in_preterm infants report a reduction of mortality and reduce NEC. Studies with sepsis result a mixed outcome till date. [1] In Bangladesh, there is no enough clinical trials regarding this matter. In this study a randomized controlled trial was done to find the role of probiotics in reducing sepsis in preterm LBW neonates. The present study was done with the objective to find out the role of probiotics in reducing sepsis in preterm low birth weight neonates.

Method:

Study design was a Randomized Controlled Trial (RCT). Period of study was two years (from January 2015 to December 2016). Study done at Dhaka Shishu (Children) Hospital. Ninety nine newborns were included in this study.

Neonates were enrolled from admitted neonates of DSH by convenient sampling, according to inclusion and exclusion criteria. They were randomly allocated to experimental and control groups by lottery done by drawing an enveloped paper from a total collection of 100 envelops; 50 for each group. Neonates in the intervention arm received probiotics supplementation with feeding started with introduction of

enteral feeding and continued till discharge or death. Neonates with feeding only without Probiotics supplementation were in the control arm.

Inclusion criteria were neonate with gestational age between 28- 33 weeks, neonate with weight at admission between 1000-2000 gm. and neonate with age at admission less than 3 completed days (< 72 hours).

Exclusion criteria were neonates with neonatal sepsis, NEC, congenital anomalies, RDS, PNA with HIE stage-II, III and very sick at admission and neonate who needed CPAP, mechanical ventilation.

After admission a detailed history and clinical examination was done in all neonates for enrolment, according to inclusion and exclusion criteria. Gestational age was assessed by new Ballard scoring system. Weight was measured by the same electronic weighing scale, having measuring ability (sensitivity) up to 1 gram. Parents were informed and written consent was taken from them after explaining the purpose of the study. Enrolled neonate was randomly allocated to Group A (Experimental group with probiotics protexin sachet supplementation manufactured by SANDOZ mixed with 3 ml breast milk or boiled safe water consists of 1 billion colony forming units of Bifidobacterium Breve, Bifidobacterium infantis Lactobacillus acidophilus, Lactobacillus bulgaricus, Lactobacillus casei, Lactobacillus rhamnosus, Streptococcus thermophilus) and Group B (Control group with feeding only preferably breast milk). 50 preterm low birth weight_neonates were included in Group A and the equal number of preterm_low birth weight neonates were included in Group B. Supplementation with probiotics was started with introduction of enteral feeding and continued till discharge or death. Discontinuation of the enteral nutrition was equivalent with discontinuation of the administration of the probiotics. Group A received probiotics once daily with or after feeding at 2 P.M. and group B received feeding only. Both groups received other necessary medications since admission. Both groups were received same antibiotics-injection ceftazidime and injection amikacin before development of sepsis at 6 A.M. and 6 P.M. Both groups were followed up daily for clinical features of neonatal sepsis, NEC and feeding tolerance. At lab of DSH 5 ml blood was sent for CBC, CRP and blood culture and x-ray abdomen was done after suspicion of NEC.

Statistical Analysis:

Data were collected using a structured questionnaire containing all the variable of interest. Data and results were presented in the form of tables. Main outcome variable was Proportion of neonatal sepsis. Secondary outcome variables were Proportion of NEC., time for achieving full feeding., proportion of mortality and duration of hospital stay.Permission was taken from the ethical committee of Bangladesh Institute of Child Health (BICH).

Data were analyzed with SPSS version 23.0. Quantitative data were expressed as mean and standard deviation and comparison was done by two sample unpaired test. Qualitative data was expressed as frequency and percentage and comparison was carried by Chi-square (x2) test. A probability value (P) of less than 0.05 was considered statistically significant.

Results:

During the study period 100 neonates were enrolled in this study. Among them 1 neonate did not complete follow up in probiotics supplement group.

Table-1: Baseline characteristics of the studied neonates

Characteristics	Probiotics supplement group (n=49)	Control group (n=50)	P value
Weight (gm) Mean ± SD	1663.26 ± 216.93	1658.0 ± 179.10	0.89
Gestational age (weeks) Mean ± SD	32.08 ± 0.90	32.08 ± 0.86	0.94
Male N (%)	27(55.10%)	31(62.0%)	0.48
Female N (%)	22(44.9%)	19(38.0%)	
NVD N (%)	24(49.0)	20(40.0)	0.389
LUCS N (%)	25(51.0)	30(60.0)	

Table 1 shows baseline characteristics of the study neonates. Baseline characteristics were similar between two groups.

Table-2 Development of sepsis among the study groups

Sepsis	Probiotics supplement group (n=49)	Control group (n=50)	P value
	n (%)	n (%)	
Present	03 (6.1)	10 (20.0)	0.04
Absent	46 (93.9)	40 (80.0)	

Table 2 shows development of sepsis was significantly less (P = 0.04) in probiotics supplement group than control group. In probiotics supplement group sepsis developed among 3 neonates but none was culture positive. In control group sepsis developed among 10 neonates, among them 3 were culture positive. Among culture positive neonates 2 were growth of Klebsiella pneumoniae and 1 was growth of Escherichia coli.

Table-3: Development of NEC among the study groups

NEC	Probiotics supplement group (n=49)	Control group (n=50)	P value
	n (%)	n (%)	
Present	0(0.0)	2(4.0)	0.49
Absent	49(100.0)	48(96.0)	

Table 3. shows development of NEC among the studied babies was less in probiotics supplement group than control group but statistically not significant.

Table-4: Time for achieving full feeding among the study groups

	Probiotics supplement group (n=49)	Control group (n=50)	P value
	Mean ± SD	Mean ± SD	
Time for achieving full feeding (days)	3.73 ± 1.72	5.36 ± 1.86	< 0.001

Table 4 shows duration of achieving full oral feeding after admission was significantly less in probiotics supplement group than control group.

Table-5: Death among the study groups

Outcome	Probiotics supplement group (n=49)	Control group (n=50)	P value
	n (%)	n (%)	
Death	0(0.0)	1(2.0)	1.0

Table 5 shows no death among the studied babies in probiotics supplement group and 1 death among control group but statistically not significant The baby was died due to preterm VLBW with sepsis with NEC.

Discussion:

In this study, a randomized controlled trial was done to find the role of probiotics in reducing sepsis in preterm LBW neonates. Besides this, role of probiotics in reducing NEC and death as well as role of probiotics in faster achievement of full oral feeding and duration of hospital stay was also assessed.

This study showed development of sepsis was significantly less [3 (6.1%) vs. 10 (20.0%); P=0.04] in probiotics supplement group than control group. In probiotics supplement group sepsis developed among 3 neonates but none was culture positive. In control group sepsis developed among 10 neonates, among them 3 were culture positive. Among culture positive neonates 2 were growth of Klebsiella pneumoniae and 1 was growth of Escherichia coli.

Lin HC et al. conducted a study (2005) in China, showed that in the probiotics group the frequency of culture proven sepsis was significantly lower (P = 0.03).[2] Samanta M et al. showed in a study (2009) in India, there was a significant reduction in culture positive sepsis, 29.5% to 14.3%, P = 0.02.[3] Mannan MA et al. showed in a study (2010) in Bangladesh at BSMMU among_120_neonates, development of sepsis was significantly lower in the study group than that of control group (P = 0.03).[4] Bernado WM et al. conducted a systematic review of RCTs, (2013) showed that, there was a significant reduction in the incidence of neonatal sepsis in the probiotics group compared to the control group. (6.5% vs 12.5%; P = 0.041).[5] Oncel MY et al. showed in a study (2014)_in Turkey_frequency_of proven sepsis was significantly lower in the probiotic group compared to the control group (6.5% vs 12.5%; P = 0.041).[6] Dilli D et al. conclude in a study (2015) in Turkey, the administration of the probiotic Bifidobacterium lactis. reduced clinical sepsis significantly (P = 0.02).[7] Sinha A et al. showed in a study (2015) in India, daily supplementation of LBW infants with probiotics led to a significant reduction of neonatal sepsis among infants weighing 1.5-1.99 kg (P = 0.007).[8] Roy A et al. showed in another study (2015) in India, fungal infection is less in the study group (P = 0.001).[9] Zhang GQ et al showed in a systematic review and meta-analysis of RCTs, (2016)_enteral probiotic supplementation significantly reduced the risk of any sepsis (25 RCTs; RR 0.83, 95% CI 0.73–0.94), bacterial sepsis (11 RCTs; RR 0.82, 95% CI 0.71-0.95), and fungal sepsis (6 RCTs; RR 0.57, 95% CI 0.41–0.78).[10]

On the other hand, Bin-Nun A et al. conducted a study (2005) that there was no difference in episodes of blood culture positive infection.[11] Hartel C et al. conducted a study (2014) in Germany, there was no reduction of sepsis in very low birth weight infants.[12] Rojas MA et al. conducted a study (2012) in which L. Reuteri did not appear to decrease the rate of nosocomial infection but the trends suggest a protective role consistent with the literature.[13] Dilli D et al. done a study (2015)_in Turkey with the administration of the probiotic Bifidobacterium Lactis. The probiotic did not reduce culture positive sepsis (P = 0.24) significantly[7]

Conclusion:

Oral probiotics supplementation reduces the proportion of sepsis in preterm low birth weight neonates. It is associated with faster achievement of full oral feeding. As regards to hospital stay probiotics supplementation associated with shorter duration of hospital stay. Large scale multicenter RCT should be done for further evaluation of these findings.

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Original Article

Free Hand Technique of Lateral Mass Screw Fixation in The Sub axial Cervical Spine: Our Experience in a Tertiary Level Hospital

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ABSTRACT

Background: Lateral mass screw fixation in the sub axial cervical spine has become the standard method for posterior sub axial cervical spine stabilization for a variety of surgical conditions.

Objective: To evaluate the efficacy of free hand technique in subaxial cervical fixation by lateral mass screws and rod system.

Method: It is a prospective study of 52 patients (40 males, 12 females). The study was done in neurosurgery department, Dhaka Medical College Hospital, from January 2014 to July 2019. Age ranging from 20 to 65 years with a follow up period up to six months.

Result: Among the total 350 screws, 290 were placed completely in the lateral mass. The screw length was from 12 to 16 mm and diameter 3.5 mm. Five patients had postoperative transient C5 palsy, 17 out of 350 lateral masses were fractured, pulling out of rod was in one case. One screw required revision surgery. There was no major neurovascular injury and no wound infection.

Conclusion: Lateral mass screw fixation without per-operative fluoroscopy could be performed without serious complications. The free hand technique made the procedure easy, rapid and safe. However investigation in a large scale is required to further evaluate the safety and efficacy of the procedure.

Key Words: Free hand technique, Screw fixation, Fluoroscopy

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Introduction:

Lateral mass screw fixation in the sub axial cervical spine is a common procedure that has been widely used in the last decade. This procedure is also optimal for the use in spondylosis with abnormal curvatures because the rods could be contoured and the polyaxial screws solves the alignment problems. It prevents kyphotic deformity and probably prevents further development of spondylosis at fused levels. [1, 2]

Lateral mass (LM) is the bony junction between the superior and inferior articular processes, separated medially from the lamina by the medial facet line (a sulcus at the junction of the lamina and facet) (Figure1).The pedicle connects the lateral mass with the vertebral body and lies between the vertebral canal and the transverse foramen.

Lateral mass at C6–C7 is smaller than above [3].

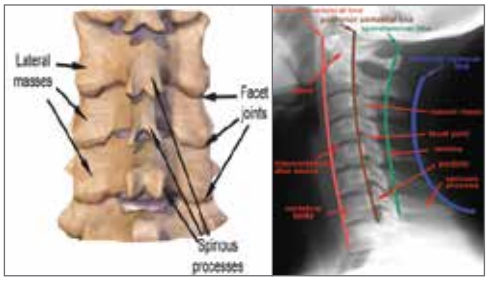

Figure 1: Anatomy of the cervical lateral mass

Some anatomical considerations regarding the cervical lateral mass (Figure 2)

- Vertebral artery (VA) lies in front of the midpoint of LM, just anterior to nerve root
- Spinal nerve lies posterior to the artery.
- Lateral mass has four quadrants, superolateral is the safest.
- VA is not at risk of injury as long as screw is directed lateral to the sagittal plane [4-6].

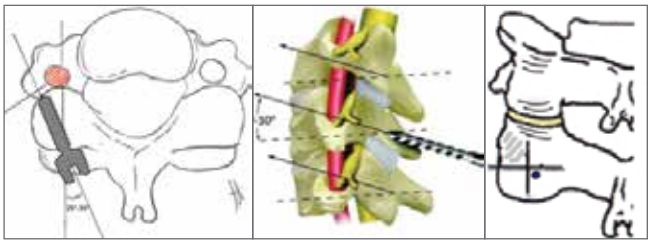

Figure 2: Relationship of vertebral artery and nerve root with lateral mass

Lateral mass screw fixation was first introduced by Roy-Camille in 1964. The procedure was further developed by Louis and Magerl then by Anderson, An, and Ebraheim et al. [23-25]. The screw trajectories in most techniques are directed superiorly and laterally; except for the Roy-Camille and Louis techniques [3-8]. Injury or violation of adjacent structures such as vertebral artery, facet joint, nerve root and lateral mass fractures are reported complications regarding this technique[9-14].

All the described techniques use the screw direction and trajectory by angles, degrees and directions which are practically nearly impossible to be perfect. In this study, we describe a simple free hand technique with easy application, without angles, without measuring of degrees and without any fluoroscopic guidance. We present our preliminary experience using this technique. The primary aim of the study was to evaluate the adequate screw trajectory by free hand technique which was assessed by early postoperative computed tomography (CT) images.

Materials and Method:

This is a prospective study of 52 patients. Among them 40 were males and 12 were females. The study was done in Neurosurgery Department of Dhaka Medical College Hospital, from January 2014 to July 2019. Age ranges from 20–65 years. Following cases were included in the study (Total 52 patients):

- Trauma 16 cases
- Cervical spondylotic myelopathy in 9 cases
- Cervical canal stenosis with loss of lordosis or focal kyphosis 8 cases
- Cervical chronic degenerative multi-level instability in 6 cases
- Ossified posterior longitudinal ligament 5 cases
- Previous laminectomy 5 cases
- Previous anterior surgeries 3 cases.

Traumatic cases with lateral mass fracture or deficiency were excluded from the study.

Pre-operatively, patients presented with heaviness and spasticity of limbs (75%), weakness of limbs (67%), lower limb weakness (55%), neck pain (52%), brachialgia (52%) and sphincter disturbance (44%).

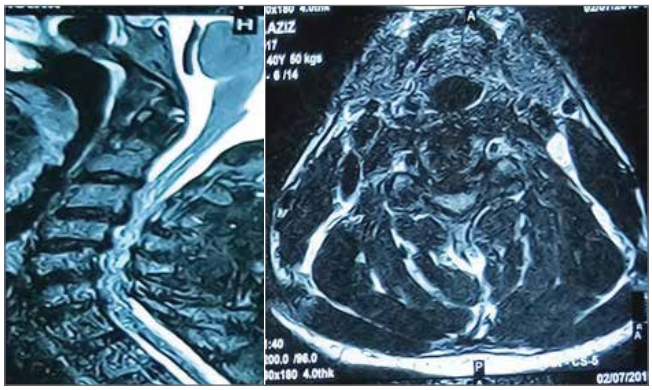

Figure 3: degenerative multilevel cervical canal stenosis

After routine evaluation, X-ray (lateral, anteroposterior) and MRI of cervical spines was done in all cases. CT done in some cases where details of bony anatomy were needed. Loss of normal cervical lordosis was an important finding in many of our nontraumatic patients. Early postoperative CT was done and screw placement with trajectory were assessed. Clinical outcomes were evaluated within 1 month after surgery. Follow up period was up to 06 months.

We did posterior decompression by laminectomy, combined with fusion when normal cervical lordosis was lost and also in patients with severe spondylotic radiculopathy with segmental instability.

Operative procedure:

Under general anesthesia, the patient was placed in the prone position with chest elevated about 15° to reduce venous bleeding. The neck of the patient (cervical spine) was maintained in the neutral position. A standard posterior midline incision given. Subperiosteal muscle dissection done and self-retaining retractors placed. Lateral X-ray done to confirm the level. The exposure was extended for at least one level below the inferior end of the targeted fusion to allow for easy screw placement.The spinous processes, laminae and lateral masses were fully exposed, extending to the lateral edges of the lateral mass and the facet joint. Lateral dissection was stopped at the lateral border of the lateral mass to avoid unnecessary bleeding. Degenerative posterior facet osteophytes (when present) were removed to help understand the boundaries of the facets and to provide a surface for rotation of the polyaxial screw heads. The facet joints in-between fused levels were decorticated and the facet joint above and below the instrumented levels were left intact.

Lateral mass was identified first and was divided into four quadrants by drawing two imaginary cross lines with a monopolar diathermy and center point identified. The

superolateral quadrant was considered the “safe quadrant”. According to our free hand technique, the entry point is 1 mm below and 1 mm medial to the midpoint of the lateral mass.

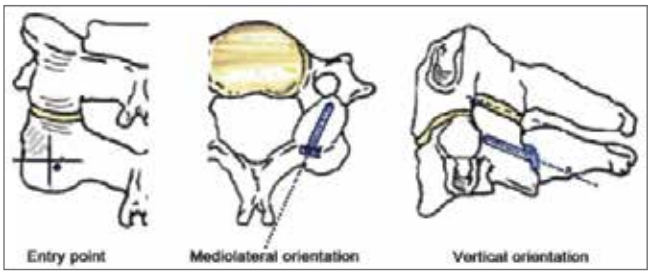

Figure 4: Screw entry point

A drill was used to decorticate the bone at the entry point and create the starting hole. The hole was made perpendicular at first to preserve the posterior cortex of the lateral mass. Due to the relatively small size of the lateral mass and its cortical bone, any attempt to make it in the targeted upward and lateral direction from the start will end in violation of the superior cortex of the lateral mass. As in most cases, the cord is already compromised, no force is given during the creation of entry holes to avoid unnecessary iatrogenic cord trauma. Care to be taken not to push downward to avoid cord injury in an already narrow canal.

After entering into the lateral mass, tapping is directed upward and lateral ventral corner toward the “safe quadrant”, with no fluoroscopic guidance. The direction is not guided by mathematical angles or degrees. It is simply guided by two landmarks:

- Adopting facet joints' space to determine the craniocaudal angulation trajectory: the straight end of the McDonald dissector was inserted into the facet joint space. This dictated the upward and ventral angulation which is parallel to the superior facet joint endplate.
- Adopting the spinous process to determine the lateral angulation trajectory: the screw trial instrument were inclined medially to rest on the tip of the spinous process of the vertebra all through the screw advancement process. This inclination dictated the needed lateral direction.

After tapping, a probe was inserted to feel the lateral mass walls. Then the appropriate sized polyaxial screw was inserted. The diameter of the screw was 3.5 mm. Rods of appropriate length were selected and bent to match the contour of the cervical spine and secured to the screws by screw head nuts. Care is taken not to make the rods too long. Rods should not come into contact of bony structures of adjacent levels, as this may be a source of pain and future erosion of adjacent bony structures. Before final tightening of the screw head nuts, each segment is compressed, distracted or laterally rotated if needed.

Figure 5: Per operative picture of cervical lateral mass screws and rods

In all cases, to preserve the normal anatomical landmarks, screw insertion is performed before laminectomy. The presence of lamina also protects the dural canal during the preparation of entry holes. Foraminotomy was required in cases with brachialgia. Bone grafts from dissected spinous processes and lamina were placed into the facet joints after curettage of its joint surfaces and also laterally on both sides of joints.

In the early postoperative period, X-Ray and CT thin cuts (slice thickness of 3 mm) with bone window and three-dimensional reconstruction were done. The screw trajectory angle was assessed. The location of the screws in relation to the edge of the root, foramen and to the facet joints was assessed

Figure 6: Post operative X-Ray and CT showing screw trajectory

Results:

52 patients (40 males and 12 females) underwent subaxial cervical lateral mass screw fixation (C3–C7). Screws were inserted using the described free hand method. Median surgical time was 120 ± 25 min and blood loss 130 ± 20 ml. Total 350 screws were inserted. 290 screws (82.8%) were placed within the lateral mass. 60 screws (17%) penetrated the border of the lateral mass without neurological consequences. 11 screws (3%) were found to contact with the vertebral artery foramen and 4 screws (1%) breached the foramen (Figure 7). The distribution of the inserted screws (Total 350) are as follows: at C3 level…58, at C4 level…98, at C5 level…98, at C6 level…84, at C7 level… 12. The screw length was from 12 to 16 mm and diameter 3.5 mm. There was no significant difference in screw length and diameter among the levels.

In the postoperative period, five patients had transient C5 palsy that improved with medical treatment. Lateral mass fractures were found in 17 out of 350 lateral masses (4.8%), Asymptomatic pulling out of rod was in one case and screw in another case. One screw was in direct contact with the root causing radicular pain that required revision surgery. There was no wound infection was in our series.

Figure 7: Complication showing violation of the edge of right VA foramen by the screw

Discussion:

Heller et al. [18] assessed the screw trajectory on the lateral radiograph (Magerl technique) in a cadaveric study and showed that 58.5 % of the screws were within the intended zone in their grading system. Eldin et al. [19] showed the placement of lateral mass screws in free hand technique was accurate in 94%. In our study, total 350 screws were inserted. Among them, 290 screws (82.8%) were placed in the lateral mass within acceptable range (within 21–40° on both axial and sagittal planes). 60 screws (17%) penetrated the border of the lateral mass without neurological consequences. The result is comparable with previous studies.

Ebraheim et al. [5, 6] showed that during lateral mass screw fixation, the screw can be in close contact with the vertebral artery (VA) foramen or even the foramen could be violated by the screw without any neurological consequences. In our study, out of 350 screws, 11 (3%) screws were found to be contacted with vertebral artery foramen and 4 (1%) screws breached the foramen with no clinical deterioration. Probably low axial screw trajectory (lack of lateral angulation) was the underlying cause behind this.

Sekhon et al. [26] reported that the risk of Facet Violation (FV) was higher for the screw with a lower trajectory angle in the sagittal plane. The incidence of FV is higher at C6 level. It is thought to be due to morphologic characteristics of this level [28]. Barrey et al. [29] described that the sagittal safety angle became narrowest at C6. In our study, FV was encountered in 13 screws (3.7%) which matches with previous studies.

Although considered as a minor complication, lateral mass fracture is not uncommon during cervical lateral mass screw fixation. Inoue et al. [17] showed that lateral mass fracture was 4.7% in their study. Destructive Spondylo Arthropathy (DSA) was identified as an underlying cause of morbidity. Screw placement in the C6 lateral mass were identified as an independent risk factors. Use of a 4.0-mm screw in patients with DSA may be a principal risk factor for this complication. In our study, lateral mass fractures were found in 17 out of 350 lateral masses (5%) which is compatible with other studies.

In our series, five patients (9.6%) had C5 radicular pain that subsided spontaneously over time, among them most were cases with OPLL. Yang et al. [2] reported that C5 palsy after posterior cervical fixation occurred in 9 of 49 OPLL patients (18 %) and the incidence was further higher in patients with cervical lordosis with severe image changes. Various countermeasures have been proposed, such as the intermittent relaxation of the tension of the hooks to the multifidus muscles during surgery, prophylactic foraminotomy to decompress C5 nerve root, prevention of excessive posterior shift of the spinal cord, which may cause the tethering effect of the C5 nerve root and prevention of excessive postoperative lordotic alignment of the cervical spine and these were found to be effective [22].

In our study, one screw was in direct contact with the C5 nerve root causing radicular pain and required revision surgery. One of our patients had pulling out of screw at C6 level, another patient had pulling out of rod, both were asymptomatic and evident only on radiographs and required no treatment. Iatrogenic dural tear occurred in 3 patients with severe spondylosis, while CSF leak was observed in 1 patient who was improved with continuous lumber drain for five days followed by deep bite in the draining site. Symptomatic adjacent segment disease was noted in 3 patients within the follow-up period and was treated with surveillance. No serious complications such as neurovascular injuries, persistent postoperative palsy or deep infection necessitating screw removal were documented. These results correspond to the majority of previous studies [20-22].

Although the present study showed the safety of our procedure in an acceptable range, there were a number of screws inserted with less optimal placement and trajectory. Whether the use of intraoperative navigation or fluoroscopic control is able to improve the surgical consistency and reduce the incidence of the screw-related complication has yet to be examined. It has been also reported that the majority of intraoperative VA injuries are asymptomatic and clinical manifestation can be delayed by several weeks [22].

Conclusion:

This study shows that lateral mass screw fixation without per-operative fluoroscopy could be performed without serious complications. The free hand technique made the procedure easy, rapid and safe. However investigation in a larger scale is required to further evaluate the safety and efficacy of the procedure.

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Original Article

Outcome of Canal Wall Up Mastoidectomy

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ABSTRACT

Background: Management of the mastoid in cases of chronic otitis media with persistent otorrhoea remains controversial. Whether to leave the canal wall up or perform a cavity technique continues to be debated.

Objective: To find out the outcome of canal wall up mastoidectomy

Method: Study was conducted on 50 patients of either sex in the age group of 15-60 yrs. Pre and post operative hearing assessment was done with pure tone audiometry (PTA). Post operative graft status also noted. All the information's were recorded in the fixed protocol. Collected data were classified, edited, coded and entered into the computer for statistical analysis by using updated computerized program SPSS-17.

Results: Among 50 cases, 34 (68%) of the study population were in the age group of 15-30 years, mean age was 28.79 (±10.33) years and majority of the study population were in the age group 15-30 years. Male female ratio was 1: 1.27.Most of the patients presented with more than one symptom. Commonest presenting complaint was history of ear discharge 100% and hearing impairment 74% cases. Commonest ear discharge was profuse and odourless. Presence of central perforation (72%) was the commonest finding. Granulation tissues was found 10(20%), cholesteatoma was found 36(72%) and Cholesteatoma & Granulation tissues was 04(08%). Mean air bone gap in pre-operative and post operative were 25.43(±6.51) dB and 19.78(±5.8) dB respectively. Seventy one percent (10 out of 14 cases) graft uptake were found in combined approach tympanoplasty and 94.44% (34 out of 36 cases) in cortical mastoidectomy, Hearing gain was found 57.14% cases in combined approach tympanoplasty and 88.89% cases in cortical mastoidectomy. Over all hearing benefit was 5.65 dB.

Conclusion: Canal wall up procedure is a valid treatment modality for patients with persistent ear discharge even after conservative treatment and in some cases of cholesteatoma. Overall satisfactory graft uptake, hearing outcome with adequate A-B gap closure have achieved by canal wall up procedure.

Key word: Mastoidectomy, Chronic otitis media, Persistent otorrhoea

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Introduction:

Chronic otitis media (COM) is the major community ear disorder in our country. It is the chronic inflammation of the middle ear cleft which is composed of Eustachian tube, hypotympanum, mesotympanum, epitympanum, aditus and mastoid air cells which presents with recurrent ear discharge through tympanic perforation. [1] Continuing mucosal infection of the middle ear by resistant organisms, continuing infection of the nasopharynx with secondary infection of the middle ear cleft and changes in the mucosa of the middle ear secondary to eustachian tube dysfunction may all contribute to the development of chronic otitis media. [2] The WHO definition requires only two weeks of otorrhoea, [3] but otolaryngologists tend to adopt a longer duration e.g. more than three months of active disease. [4]

In Bangladesh, several hospital and rural studies revealed prevalence of COM between 7.39 and 39.50% among the study population. [5,6]

In India, prevalence rate is 7.8% which is very high. In Britain,

0.9% of children & 0.5% of adults have COM with no difference between the sexes. [7] Worldwide, there are between 65-330 million sufferers. Chronic otitis media (COM) can be subdivided into active chronic otitis media (active COM) and inactive chronic otitis media (inactive COM). Active COM can be subdivided into active mucosal COM and active squamos COM. Inactive chronic otitis media can further be subdivided into Inactive mucosal chronic otitis media and Active squamous chronic otitis media. Another clinical entity is healed chronic otitis media where the perforated ear drum has managed to heal itself. [8]

Patients with chronic otitis media (COM) present with a draining ear of some duration and a premorbid history of recurrent acute otitis media, traumatic perforation, or the placement of ventilation tubes. Typically, they deny pain or discomfort. A common presenting symptom is hearing loss in the affected ear. Reports of fever, vertigo, and pain should raise concern about intratemporal or intracranial complications. A history of persistent COM after appropriate medical treatment should alert the physician to consider cholesteatoma. The external auditory canal may or may not be edematous and is not typically tender. The discharge varies from fetid, purulent, and cheeselike to clear and serous. Granulation tissue is often seen in the middle ear space. The middle ear mucosa visualized through the perforation may be edematous or even polypoid, pale, or erythematous. [9]

Otoscopy with the aid of a microscope is the 'gold standard' for the diagnosis of COM. History taking and investigations are an aid to management rather than to diagnosis. [10]

Standard treatment of COM is conservative management with aural toilet, topical antibiotics, systemic antibiotics and dry ear precautions. [11] In those that do not resolve or do not result in spontaneous healing of tympanic membrane with conservative measures, surgical intervention is done.10 The goals of surgery to treat chronic otitis media are complete eradication of disease, achievement of a dry and self-cleansing ear, creation of anatomical conditions to prevent recurrence, and preservation or improvement of hearing function. Preservation or improvement of hearing function is the most difficult to achieve, especially when the ossicular chain is involved. [12]

Main surgical techniques are used in the surgical treatment of COM may be stated as tympanoplasty, open (canal wall down mastoidectomy) and closed (canal wall up mastoidectomy) procedure. Canal wall down mastoidectomy broadly means a procedure requiring removal of posterior wall of external auditory canal. It includes both radical and modified radical mastoidectomy. The major drawback with this procedure is the cavity problems like discharging ear, granulations,wax and keratin accumulation,difficulty in prescribing hearing aids, dizziness and small meatus post operatively. Canal wall up technique includes cortical mastoidectomy and combined approach tympanoplasty. Mastoid air cells system plays an important role in middle ear aeration and pressure regulation. In chronic otitis media infection can spread into the air cell system leading to persistent otorrhoea. Granulations are also found in mastoid air cell system. There has been a clinical impression that lack of an aerating mastoidectomy at the time of the initial tympanoplasty may be a significant source of failure in patients with chronic non-cholesteatomatous otitis media. [14]

Chronic otitis media with cholesteatoma is a potentially dangerous disease because it can lead to life threatening intracranial complications. [15,16]

Canal wall up mastoidectomy is indicated when the symptoms and signs have not been controlled by an adequate course of an appropriate antibiotic and when acute symptoms and signs of mastoiditis subside but otorrhoea continues 3-4 weeks after the onset. Canal wall up mastoidectomy has the advantage of intact external auditory canal and does not require substantial anatomical modifications and requires less postoperative care. [17]

In study conducted by Brackmann et al. among 108 patients who underwent tympanoplasty with mastoidectomy for cholesteatoma, 32 percent of the cases were children of 15 years of age and below. Over two thirds of the procedures were canal wall up, and the remainder of patients underwent a canal wall down technique with obliteration. There was little difference in the results between children and adults, with the exception of there being a tendency for a greater degree of ossicular destruction in the children and a greater incidence of residual disease at second stage surgery. There was a 3 percent incidence of recurrent cholesteatoma. It appears that the intact canal wall technique is preferable in both children and adults, when circumstances are favorable. [18]

Toner and smyth reported better hearing outcomes one year after surgery for canal wall up compared with canal wall down mastoidectomy. [19] A study by McGrew et al examined the effect of canal wall up mastoidectomy on 484 dry, post infectious, unoperated, noncholesteatomatous TM perforations shows 91% graft uptake rate. [20]

In study conducted by Krishnan et al among 48 patients with COM who underwent canal wall up mastoidectomy, post-operative hearing gain was 75%. [21]

It is widely believed that as long as there are infections present in and around the middle ear cleft, an attempt to perform myringoplasty may not be successful. Success of surgery depends on complete clearance of the disease, procedure that performed by the surgeon,experience and skillness of surgeons and also some biological factor. Eustechian tube dysfunction believed to be the cause of frequent recurrence of the disease. [22]

Modified radical mastoidectomy along with tympanoplasty has been considered the surgical procedure of choice for Squamous type of COM but some surgeons perform canal wall up procedure routinely in particular cases. [23]

In general canal wall up procedure is designed to maintain the normal anatomical contour of the mastoid cavity and preserve the anatomy of the posterior canal wall. The study was design to evaluate the efficacy of the treatment of COM for which canal wall up is the treatment of choice. Patients with active squamous COM with persistent discharge and limited cholesteatoma suffering from conductive hearing loss need canal wall up procedure. The purpose of study was to see the clearance of disease, improvement of hearing as well as patient quality of life following this procedure.

Method:

This Cross-sectional observational study was conducted in department of ENT and Head Neck surgery, Shaheed Suhrawardy Medical College Hospital. Patients undergoing canal wall up tympanomastoidectomy in the Department of Otorhinolaryngology and Head Neck surgery. This study included 50 cases due to time limitation of study period by purposive sampling. Patients with persistent ear discharge even after conservative treatment were included. Patients who had undergone canal wall down mastoidectomy were excluded.

Results:

Table-I: Age group distribution of the patients (n=50)

Age in years	Number	Percentage (%)
15-30	34	68
31-45	14	28
46-65	02	04
Total	50	100
Mean ±SD	28.79(±10.33)	15-53 years

Table I shows 34(68%) of the study population were in the age group of 15-30 years, followed by 28% in 31-45 years and 4% between 31-45 years of age. Majority of the study population were in the age group of 15-30 years. Mean age was 28.79(±10.33) years.

Table-II: Distribution of symptom among study patients (n=50)

Symptom	Number	Percentage (%)
Ear discharge	50	100
Hearing impairment	37	74
Earache	06	12
Tinnitus	02	04
Headache	01	02
Others	01	02

Table II shows that all patients presented with history of otorrhoea, 37 (74%) had hearing impairment, 06 (12%) had earache. Most of the patients presented with more than one symptom. Commonest presenting complaint was history of ear discharge and hearing impairment

Table-III: Character of ear discharge among the study population (n=50)

	Number	Percentage (%)
Profuse	02	04
Odourless	03	06
Scanty	48	96
Foul smelling	47	94
Blood stained	03	06

Table III Shows character of ear discharge. 02 (04%) had profuse, 03 (06%) had odourless, 48 (96%) had scanty, 47 (94%) had foul smelling, and 03 (6%) had Blood stained. Commonest ear discharge was scanty and foul smelling.

Table-IV: Distribution of site of perforation among patients (n=50)

	Number	Percentage
Attic	36	72
Marginal	14	28
Total	50	100.00

Table IV shows presence of Attic perforation in 36 (72%) cases, Marginal was 14 (28%) . Presence of perforation Attic was the commonest finding.

Table-V: Distribution of granulation tissues and cholesteatoma among study population (n=50)

Granulation tissues	Number	Percentage (%)
Granulation tissues	10	20
Cholesteatoma	36	72
Cholesteatoma & Granulation tissues	04	08

Table V shows granulation tissues was found in 10 (20%) cases, cholesteatoma was found in 36 (72%) and Cholesteatoma & Granulation tissues in 04 (08%) cases.

Table-VI : Hearing status before operation (n=50)

A-B gap	Number of patients	Percentage of patients
< 10 dB	Nil	--
11-20 dB	07	14
21-30 dB	25	50
31-40 dB	13	26
>41 dB	05	10
Total	50	100

Table VI Shows preoperative air bone gap 07 (14%) were between 11-20 dB, 25 (50%) were between 31-40 dB, 13 (26%) were 31-40 dB and 05 (10%) were > 41 dB.

Table-VII: Association between extension of cholesteatoma (n=50)

Extension of cholesteatoma	Total	Percentage
Attic	28	56
Attic and antrum	08	16
Attic,antrum and mastoid	14	28

Table VII shows cholesteatoma in Attic were 28 (56%) and Attic & antrum 08 (16%).

Table -VIII: Type of operation (n=50)

	Number	Percentage
Combined approach tympanoplasty	14	28
Atticotomy & cortical mastoidectomy with attic reconstruction	26	52
Modified intact canal wall mastoidectomy	10	20
Total	50	100

Table VIII shows 14 (28%) cases underwent combined approach tympanoplasty and 26 (52%) cases were Atticotomy & cortical mastoidectomy with attic reconstruction, 10 (20%) cases were Modified intact canal wall mastoidectomy.

Table-IX: Overall graft-take of operation (n=50)

Overall results	No. of cases	Percentage(%)
Graft uptake	36	72
Graft failure		
Small dry perforation	04	08
Discharging ear	10	20

Table X shows 36 (72%) graft uptake, 04 (08%) small dry central perforation and 10 (20%) cases with ear discharge after post-operative follow up.

Table-X: Hearing status after operation (n=50)

A-B gap	Number of patients	Percentage of patients
< 10 dB	Nil	--
11-20 dB	15	30
21-30 dB	23	46
31-40 dB	08	16
>41 db	04	08
Total	50	100

Table VI shows post operative air bone gap. In majority 23 (46%) cases A-B gap were between 31-40 dB.

Table-XI: Comparison between preoperative and post operative A-B gap (n=50)

A-B gap	Pre-operative	Post operative	p value
< 10 dB	Nil	Nil	
11-20 dB	07(14)	15(30)	
21-30 dB	25(50)	23(46)	
31-40 dB	13(26)	08(16)	
>41 db	05(10)	04(08)	
Total	50(100)	50(100)	
Mean ±SD	25.43(±6.51)	19.78(±5.8)	<0.004

Percentages are mentioned within parenthesis By 't' test

Table XII shows preoperative and post operative air bone gap. Mean air bone gap in pre-operative and post operative were 25.43 (±6.51) dB and 19.78 (±5.8) dB respectively.

Discussion:

Management of the mastoid in cases of chronic supportive otitis media with persistent otorrhoea remains controversial. Whether to leave the canal wall up or perform a cavity technique continues to be debated. The purpose of the study was to find out the outcome of canal wall up mastoidectomy. This is a cross-sectional observational study was conducted in Department of ENT and Head Neck surgery, Shaheed Suhrawardy Medical College Hospital (ShSMCH) & Bangabandhu Sheikh Mujib Medical University (BSMMU).

In this study, 34 (68%) of the study population were in the age group of 15-30 years, followed by 28% in 31-45 years, only 4% were in 31-45 years of age and mean age was 28.79 (±10.33) years. Majority of the study population were in the age group 15-30 years. 22 (44%) were male and 28(56%) were female. Male female ratio was 1:1. 27 Female were clearly majority in number. Compared with Kakkar V et al. [43] study where 55% of the patients were in the age group of 15-25. Average age was 27.2 years. There were 15 males and 25 females that is 63% of the total in the study. In study of Tawab et al. [47] most of the patients were in the age group of 20–29 years. The youngest patient was found to be 12-years old and the oldest 60 years. In study of Abdullah et al. [48] 63 patients (26 male and 37 female) were included for retrospective analysis. The ages ranged between 5 months-72 years (mean, 31years).

In present study all patients presented with history of otorrhoea (100), 33 (74%) patients had hearing impairment and 06 (12%) had earache. Most of the patients presented with more than one symptom. Commonest presenting complaint was history of ear discharge and hearing impairment. Kakkar V et al. [43] found 33 patients (82%) presented with hearing loss. Abdullah A et al. [48] showed Otorrhoea and reduced hearing common in all age groups, 92% and 70%, respectively.

In the study of Ahmed et al. [42] ear discharge is present in all

the patients (100%), loss of hearing in (80%), pain in 28%, none presented with any intracranial complications. In their retrospective study of Parisier et al [49], the most common presenting symptoms were Otorrhoea (73%), hearing loss (85%), otalgia (32%). Marco–Algarra et al50 study of 52 patients (55 ears), the commonest presenting symptoms were Otorrhoea plus hearing loss (54%), Otorrhoea only (29%), hearing loss only (7.6%), pain (13%).

In this study all were with ear discharge, 02 (04%) had profuse, 03 (06%) had odourless, 48 (96%) had scanty, 47 (94%) had foul smelling, and 03 (6%) had Blood stained. Commonest ear discharge was scanty and foul smelling. Ahmed et al. [42] of the 50 ears all were ear discharge (100%), 20 (40%) ears had a scanty discharge and 7 (14%) ears had a profuse discharge.

In current study attic perforation was found in 36 (72%) cases and marginal in 14 (28%) cases. Presence of attic perforation was the commonest finding.

In present study granulation tissues was found in 10 (20%), cholesteatoma was found in 36 (72%) and Cholesteatoma & Granulation tissues was in 04 (08%) cases. Abdullah et al. [48] showed cholesteatoma alone was common finding in 36 cases (57%). Whereas 13 cases (21%) had both (cholesteatoma and granulation tissue). The remaining (22%) presented with chronic active OM with mastoiditis alone.

In this study showed mean air bone gap in pre-operative and post operative were 25.43 (±6.51) dB and 19.78 (±5.8) dB respectively. Compared with other studies Toros et al [51] found 26.44 (10.03) and 16.77 (11.1), Mcgrew et al. [52] 25.8 (13.6) and 14.4 (11.1), Kaur et al. [44] 36.96 (7.34) and 27.88 (5.78) respectively. In study of Kawatra and Maheshwari 20.80±7.08 dB mean air-bone gap was found in pre-operatively and 19.93±7.27 dB post operatively. [41]

In current study cholesteatoma was found in attic 28 (16%) cases and attic & antrum in 08 (12%) cases and attic,antrum & mastoid in 14 (28%) cases. In Siddiqui R study among 60 cases, attic perforation with cholesteatoma was seen in 10 cases while 30 cases had posterior perforation with cholesteatoma. 40 Ahmed et al. [42] showed cholesteatoma in the postero-superior quadrant of the tympanic membrane in 27 (54%) cases, while attic cholesteatoma was seen in 21 (42%) cases.

Primary surgical treatment in all the patients was “intact canal wall technique”. Combined approach tympanoplasty was done in 14(28%) cases.Atticotomy & cortical mastoidectomy with attic reconstruction was done in 26 (52%) cases, Modified intact canal wall mastoidectomy in rest of the cases, 10 (20%).Suture removal was done after 2nd week. External canal pack removed after 2 weeks. Ear drops are allowed after 2 weeks. Among the patients 82% of them turned up regularly for follow up. 18% of them came irregularly. In the present study 36 (72%) of the patients showed well healed dry ear, 10 (20%) showed discharging ear and 4 (8%) re-perforation. The post-operative follow up included an audiometric examination after a gap of 1 month to 2 months.

In this study 72% (36 out of 50 cases) graft uptake were found. Small dry perforation was found in 04 cases (08%) & ear discharge in 10 (20%) cases during postoperative follow up. Over all hearing benefit was 5.65 dB.

Kakkar et al.43 Initial observation was made at the end of three months post operatively, 10% of cases had complaint of ear discharge which was also managed on further follow up period. 90% of the cases had graft accepted and 4 patients (10%) had residual perforation. Among 40 patients, 33(82.5%) cases had improvement in hearing status of more than 05dB and 10 out of 40 (25%) cases had more than 10dB of hearing improvement postoperatively.

In Kaur study, 44 graft uptake rate was 88%, ear discharge occurred only in 2 (8%) cases. Pre-operative A-B gap mean 36.96 dB, post operative 27.88 dB and hearing benefit 8.84 dB.

In study by Krishnan et al [53] post-operative hearing gain was 75%. Similarly, Balyan et al. [54] study conducted on 48 patients with COM, graft uptake 85.7% graft failure rates 14.3% and hearing benefit 7.7 dB.

In a study done by Toros et al. [51] tympanic membrane perforation closure was successful in 78.3%, graft failure rate 21.7% with pre-operative mean A-B gap 26.44(±10.03) dB and post operative mean A-B gap were 16.77 (±11.1) dB ($p>0.05$).

In a study by Panigrahi et al. [45] myringoplasty was performed with modified radical mastoidectomy on randomly chosen 67 patients, out of which successful graft take-up was observed on 60 patients after 1 year period of observation (94%). Reperforation due to infection noticed only in 2 patients (6%) within 4 months of observation period.

Kiakujori et al. [55] study showed after the operation hearing improvement was seen in 20.5% cases, in canal wall up procedure and 16% cases show hearing unchanged.

Conclusion:

Canal wall up procedure is a valid treatment modality for patients with persistent ear discharge even after conservative treatment and in some cases of cholesteatoma. Surgical outcome depends upon status of middle ear cleft, proper clearance of disease, relieving of etiological factor, health awareness of patients and regular follow up. It is evident that good audiological result in successful cases is associated with a high probable return to normal function and lifestyle at any age. Overall satisfactory graft uptake, hearing outcome with adequate A-B gap closure have achieved by canal wall up procedure.

Recommendation:

In spite of limitations, this study provided information which would help the surgeon to enrich the current knowledge and understanding regarding the outcome of canal wall up procedure. Further large scale studies should be done to explore the better results.

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Original Article

Value of CT Scan in Stroke (CVD) Patients at a District Level Medical College Hospital, Bangladesh- A Retrospective Study.

Bhuiyan M H U [1], Hossain M Z [2], Rahim Y [3]

ABSTRACT

Background: Cerebrovascular disease (CVD) is defined as sudden loss of blood circulation to an area of the brain resulting in a corresponding loss of neurologic function.The cerebrovascular stroke is one of the leading causes of morbidity & mortality in adult life. After coronary heart disease & cancer of all types, stroke is the third commonest cause of death worldwide. The aim of the study was to see the clinical presentation, risk factors, neurological presentation, pattern of brain strokes, areas of brain affected as per CT scan finding inpatient at Peripheral Medical College Hospital, Bangladesh.

Objective: To find out the role of CT scan in stroke (CVD) patients at a district level medical college hospital, bangladesh.

Method: This is a retrospective study of all patients came CT done for stroke in the Monno Medical College & Hospital, Manikganj, from january 2019 to june 2019. The cerebrovascular strokes are more common in males 54.61% than females 45.39%. Most common age group was 61-70 years (32.98%). Most common clinical feature was hemiplegia (49.1%). Most common risk factor was hypertension(39.8%) followed by smoking (21.4%), diabetes mellitus(18.2%) past h/o CVD(15%) as well as dyslipidemia (13.5%). The most common type of stroke was ischemic (81.79%) & hemorrhagic was (18.21%). In ischemic stroke most common involved areas were parietal (33.8%), frontal (16.8%).In hemorrhagic stroke most common site was thalamus (25.3%) followed by ventricular (18.6%).

Results: 412 cases of strokerecords CT brain done from Monno Medical College & Hospital, Manikganj during a period of 1st january 2019 to 30th january 2019 were studied and evaluated for clinical profile & frequency of risk factors.

Conclusion: CT scanning remains the useful technique for diagnosis of cerebrovascular accidents because rational management of stroke depends on accurate diagnosis and it shouldbe ideally done in all cases. The stroke cases were male predominance with hypertension was the most common risk factor and most common type of stroke was ischemic.

Keywords: Cerebrovascular disease (CVD), Computed Tomography (CT).

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Introduction:

Cerebrovascular disease (CVD) are on the leading causes of death in developed countries after heart disease and cancer and also became one of the leading causes of death in bangladesh specially remote places.

The term stroke means an acute neurological deficit resulting from cerebrovascular (CVD) and lasting more than 24 hours (or causing earlier death). Stroke is not a diagnosis but a clinical syndrome with numerous causes, principally cerebral infarction [5, 15].

Cerebrovascular diseases are major cause of mobility and mortality and clinically it is difficult to differentiate the types of stroke i.e, ischemic or haemorrhagic, in majority of cases as there are no specific differentiating feature. [2, 3, 11] Accurate and early diagnosis may improve the mortality and morbidity. Computed tomography is one of the most accurate methods available for identifying and localizing and infarct with brain.[4,12] Ischemic infarction and haemorrhagic infarction are well differentiated by CT.

Haemorrhagic stroke is due to rupture of vessels and is usually associated with hypertension.Whereas in ischemic stroke, thrombotic or embolic occlusion of intra cranial vessels is the major cause.

Hypertension, smoking & dyslipidemia are commonest cause of stroke among the elderly, and smoking, increased BMI, diabetes and hypertension are significantly associated with strokes among young people [3, 9].

Method:

412 patients were taken into the study, CT scans done due to acute stroke or h/o stroke from 1st january, 2019 to 3oth june, 2019 at private Monno Medical College & Hospital, Manikganj which is 500 Bedded hospital. CT scan machine is Siemens Somatom Emotion Sixteen slice with spiral facility. The Medical College is running with all the basic medical departments medicine, nero medicine, surgery, paedi, O&G etc. CT scan was done with axial basal, cerebral sequence on the clinical basis of diagnosis CVD.

Patient history and clinical diagnosis were recorded from registrar book recorded at the time of CT scan. Those patients CT scan brain done sent from Monno Medical College & Hospital, 250 bedded district hospital, manikganj & general practioner mainly.

Inclusion Criteria: All patients above 18 years and having clinical & CT confirmed diagnosis of stroke. Out of 1052 cases CT scans were done in 06 months (1st january 2019 to 30th june 2019), 412 cases were diagnosed CVA, 45 brain tumour, fracture, etc and 595 were normal in CT findings.

Exclusion Criteria: 1. Patients below 18 years.
2. patients not showing CT confirm diagnosis.

Incidence of age: The age range was from 20 to 100 years with mean age of 63 years. In this study youngest patient was 24 year & oldest was 100 year old. The incidence of stroke is maximum in the age group 61-70 (33.98%) of total patient as shown in table-I

Result:

Table-I: Frequency & Percentage of cases according to age groups.

Age group (years)	Frequency	Percentage
20-30	3	0.73%
31-40	11	2.68%
41-50	30	7.28%
51-60	87	21.11%
61-70	140	33.98%
71-80	95	23.06%
81-90	33	8.00%
91-100	13	3.16%
Total	412	100%

Sex Distribution of Stroke patient:

Total out of 412 patient, 225 were male & 187 were female as shown in pie chart. The male to female ratio was 1.2:1

Fig-Pie Chart: Sex wise distribution of stroke patinet.

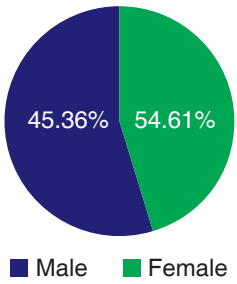

Table-II: Frequency & percentage stroke risk factors.

Risk Factor	Frequency	Percentage
HT	164	39.8%
DM	75	18.2%
Dyslipidemia	56	13.5%
Smoking	88	21.4%
Past H/O CVD	62	15.0%

In our study common risk factor was Hypertension (HT) with 39.8% incidence, followed by diabetes mellitus (DM) 18.2%, smoking 21.4%, past h/o CVD 15.0% dyslipidemia 13.5% as shown in table-II.

Table-III: Frequency & Percentage of clinical feature of stroke patient.

Clinical Feature	Frequency	Percentage
Altered Sensorium	58	14.1%
Convulsion	21	5.1%
Inability of gait	17	4.1%
Hemiplegia/Peresis	202	49.1%
Speech involvement	108	26.1%

In our study as shown in table-III most common clinical Presentation was hemiplegia which was 49.1% followed by speech involvement 26.1% etc.

Table-IV: Gender wise frequency of different type of stroke.

Gender	Type of stroke				Total
	Ischaemic		Haemorrhagic		
Male	Count	193	Count	32	225
	Percentage	46.8%	Percentage	7.77%	
Female	Count	144	Count	43	187
	Percentage	34.95%	Percentage	10.44%	
Total	Count	337	Count	75	412
	Percentage	81.79%	Percentage	18.21%	100%

Table-V: Topographic distribution of Cerebral Haemorrhage & infarction.

Affected area of Brain on CT scan	Cerebral Infarction		Cerebral Haemorrhagic	
	Perc.	Perc.	Perc.	Perc.
Brain Stem	--	--	--	--
Thalamus	25.3%	25.3%	25.3%	25.3%
BasalGanglion	16% (Fig2)	16% (Fig2)	16% (Fig2)	16% (Fig2)
Paraventricular	2.3	2.3	2.3	2.3
Ventricular/SAH/SDH	18.6(Fig 3)	18.6(Fig 3)	18.6(Fig 3)	18.6(Fig 3)
External/Internal Capsule	6.7	6.7	6.7	6.7
Cerebellar	3.8	3.8	3.8	3.8
Frontal	2.6	2.6	2.6	2.6
Parietal	13.3 (Fig 1,5)	13.3 (Fig 1,5)	13.3 (Fig 1,5)	13.3 (Fig 1,5)
Temporal	6.7	6.7	6.7	6.7
Occipital	--	--	--	--

In our study as shown in Table-V, 337 Patient 81.79% suffered ischaemic stroke 75 patient 18.21% suffered haemorrhagic stroke. So most of the common type of stroke was ischaemic. Out of 337 ischaemic stroke 193 (46.8%) were males and 144 (34.95%) were females.

Second most common type of stroke was haemorrhagic (18.32%). Out of 75 haemorrhagic stroke Patient 32 (7.77%) were male & 43 (10.44%) were females.

In this study most commonsite of infarction was parietal (33.8%) followed by frontal (16.9%), basal ganglion (11.2%) as shown in table-V.

The most common site of haemorrhage was thalamus (25.3%) followed by ventricular (18.6%), basal ganglion (15%) as also shown table V.

Discussion:

CT is helpful in differentiating the different types of stroke & also helps in early diagnosis of cerebrovascular accidents (CVA). Studies have proved that CT scan is helpful in differentiating haemorrhage and infarction & other causes of stroke & in accurate treatment.

The mean age observation of 63 in our study which correlates with study done by vaidya CV et al (mean age 61) [3] & Maskey at al (mean age 63) [1]. The common age group presented was between 61-70 year. Which closely correlates with study done by Maskeyet al [1] Vaidya CV et al [3].

The male to female ratio was 1.2:1 which may closely correlates with study of Vaidya CV et al (1.4:1) [3] but a bit less male female ratio study done Aiyar et al (1.9:1) [4].

The young stroke (age<45 year) comprised of about 10% of all patients which is near with study done by Abdul Sallam et al (13.6%) [8] and Vaidya CV et al (15%) [3].

In this study most common clinical presentation was haemiplegia/hamiperesis followed by speech involvement which his closer to study done by Vaidya CV et al [3] and Sanjeev Suman et al [5].

In our study the most common riskfactor was hypertension (39.4%) which correlates with study done by Eapen et al (40%) [6], followed by smoking (21.4%), DM (18.2%) correlate Vaidya et al [3].

The most common types of stroke was ischaemic that is cerebral infarction (81.79%) which correlated with studies done by Aiyer et al (70%) [4], in Eapen et al (68%)[6].Devinchandet al (75%) [7],Vaidya CV et al (75.1%) [3].

The Second most common types of stroke was haemorrhage (18.21%) which correlated with study done by Eapen et al (32) [6],Aiyear et al (26%) [4], Devichand et al (25%)[7], Mark MP et al [14].

In our study, the most common site of infarction was parietal (33.8%) followed by frontal (16.9%), basal ganglion (11.2%), correlated with Eapen et al [6] & Vaidya CV et al [3], Mukerjee& et al [13].

The most common site of haemorrhage was thalamus (25.3%), followed by ventricular (18.6%), basal ganglion (16%) correlated with study done by Eapen et al [6] Vaidya CV et al [3], Gaskill et al [10].

Conclusion:

Stroke in our country like Peripheral district is on rise. The occurrence rises with age with peak between 60 to 70 years. Young patients (age<45 years) 10% of patients which is more dangerous in view of productive year lost. This study showed male predominance in stroke cases were infarction was more than hemorrhage. Males were more affected than females in ischemic stroke but for hemorrhage, incidence was higher in cases of female.

CT scanning is important technique for diagnosis of acute stroke as rational management of stroke depends on accurate diagnosis and it should be done in all cases.

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Original Article

Abnormal Lipid and Lipoprotein Patterns in Liver Cancer

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ABSTRACT

Background: Liver is one of the most essential organs in energy metabolism. Most plasma apolipoproteins, endogenous lipids and lipoproteins are synthesized in the liver. Plasma cholesterol levels are high in hepatocellular carcinoma (HCC) and low in cirrhosis.

Objective: To find out the established liver cancer have significant effect on abnormal lipid and lipoprotein patterns.

Method: The cross-sectional comparative study was carried out Different Private Medical and Hospital in Chandpur and Chandpur Medical College Hospital, Chandpur. Total 60 patients aged 35-80 years with liver disease were studied at the liver unit. Thirty patients had cirrhosis and 30 cirrhosis with HCC. Diagnosis was based on clinical features (icterus, ascites, hepatomegaly or decreased liver size) and histological findings of liver biopsy. Patients with HCC were not on any cytotoxic drugs at the time of study.

Results: Mean weight, total bilurubin, total protein, albumin and ALT were statistically significant ($p<0.05$) between two group. Mean weight, total cholesterol, HDLC, HDLPL, HDLC/TC ratio, HDLPL/PL ratio and PL/TC ratio were statistically significant ($p<0.05$) but phospholipids was not statistically significant ($p>0.05$) between two group.

Conclusion: Liver cancers have significant effect on the TC and the LDL-C with TG, the HDL-C and the PL/TC ratio ratio of the subjects examined in this study. Since high level of LDL-C indicates elevated risk of Coronary Heart Disease (CHD), it was therefore suggested that lipid profile of liver cancer patients should be monitor to avoid CHD among liver cancer patients.

Key word: Hepatocellular carcinoma, Liver cancer, Abnormal lipid

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Introduction:

Liver cancer is the second leading cause of cancer death worldwide. [1] Hepatocellular carcinoma (HCC) represents 90% of primary liver cancer. [2] Lipids are one of the necessary components which control cellular functions and homeostasis. Liver plays an essential role in lipid metabolism, several stages of lipid synthesis and transportation. [3] The metabolic reprogramming in HCC has been investigated by a greatest number of metabolomic studies. Accumulated data suggested that glycolysis and beta-oxidation were commonly elevated in HCC. On one hand, the enforced glycolysis over mitochondrial oxygen respiration (also called Warburg effect), although comparatively lower in reaction rates (fourfold increase) than the other types of tumor, was a common metabolic phenotype in tumor. [4] Changed lipid and lipoprotein metabolism homeostatically is one of the foundations in various liver diseases, and is regulated by related substances. [5] The liver is a major organ in energy metabolism, and plays a critical role in the Liver cancer was the fifth malignant tumor in the world, [7] and was infected with hepatitis B virus (HBV) and hepatitis C virus (HCV) which were common in China, [8] which is major remote cause of liver cancer. [9] The induction of fatty acid beta-oxidation in HCC may reflect the high-energy production metabolism of lipid and lipoprotein, regulating their synthesis and degradation. [6] demand for rapid tumor growth and cell survival.

Accumulating metabolomic studies have confirmed this change. The oncogenic drivers for the metabolic reprogramming from the original net lipid gain in fatty liver diseases to the increased lipid loss in HCC.

Method:

The cross-sectional comparative study was carried out Different Privet Medical in Chandpur and Chandpur Medical College Hospital, Chandpur. Total 60 patients aged 35-80 years with liver disease were studied at the liver unit. Thirty patients had cirrhosis and 30 cirrhosis with HCC. Diagnosis was based on clinical features (icterus, ascites, hepatomegaly or decreased liver size) and histological findings at liver biopsy. Patients with HCC were not on any cytotoxic drugs at the time of study. Thirty healthy volunteers served as controls. Patients and control subjects were of the same socioeconomic status. After an overnight fast, venous blood samples were taken from the controls and the patients in bottles containing dry Na2 EDTA for lipids and lithium and heparin for liver function tests. High density lipoprotein (HDL) was isolated from the other lipoproteins by a modification of the method. The supernatant containing HDL was removed bypipetting and stored with the remaining plasma at -20°C until analysed. HDL phospholipids (HDLPL) and plasma total phospholipids (PL) were determined by the method described by King and Wootton. HDL cholesterol in the supernatant and the plasma total cholesterol were also determined by the modified Liebermann Burchard reaction. Other biochemical tests included alkaline phosphatase, alanine aminotransferase (ALT), total bilirubin, total protein and albumin by the Biuret and Bromocresol method, respectively. For each assay, a commercial quality control (Wellcome reagents) and a pooled plasma control of known values were always included. Results were acceptable only when determined values were within the specified values. Analysis of variance the student's t-test were used to compare paired values and the differences with a P <0.05 regarded as significant. Pearson perfect correlation coefficient was used to assess the strength of association between lipid levels and liver function tests.

Result:

Mean weight, total bilurubin, total protein, albumin and ALT were statistically significant (p<0.05) between two group (Table-1). Mean weight, total cholesterol, HDLC, HDLPL, HDLC/TC ratio, HDLPL/PL ratio and PL/TC ratio were statistically significant (p<0.05) but phospholipids was not statistically significant (p>0.05) between two group (Table-2).

Table-1: Demographic characteristics of the study patients

	Cirrhosis (n=30)	Control (n=30)	p value
Age (years)	42.5±5.2	40.6±3.5	0.102ns
Male	18 (60.0%)	20 (66.7%)	0.592ns
Weight (kg)	56.8±5.9	60.3±5.4	0.020s
Total bilurubin (mmol/L)	17.7±1.8	15.4±1.6	0.001s
Total protein (g/l)	67.9±6.5	72.3±6.7	0.012s
Albumin (g/l)	28.2±2.1	36.7±1.9	0.001s
ALT (U/ml)	9.0±3.4	13.6±3.2	0.001s

s= significant, ns= not significant
p value reached from chi square and unpaired t-test

Table-2: Lipid profile of the study patients

	Cirrhosis (n=30)	Control (n=30)	p value
Total cholesterol (mmol/L)	1.97±0.25	4.23±0.17	0.001s
HDLC (mmol/L)	0.81±0.11	1.14±0.04	0.001s
HDLC/TC ratio	0.42±0.07	0.28±0.01	0.001s
Phospholipids (mmol/L)	11.0±0.78	11.26±0.45	0.119ns
HDLPL (mmol/L)	3.11±0.30	5.79±0.21	0.001s
HDLPL/PL ratio	0.29±0.03	0.51±0.01	0.001s
PL/TC ratio	5.82±1.12	2.86±0.04	0.001s

s= significant, ns= not significant

Discussion:

In this study showed the mean weight, total bilurubin, total protein, albumin and ALT were statistically significant (p<0.05) between two group. Ahaneku et al. [10] reported that the mean body weights were similar in cirrhosis alone and cirrhosis with HCC but significantly lower than the corresponding control values (P <0.001). Liver function tests in cirrhosis alone, plasma total proteins, albumin and alanine aminotransferase (ALT) were significantly reduced when compared with the controls. Mean total protein, albumin, total bilirubin, ALP and ALT levels in cirrhosis with HCC were significantly higher than the corresponding values in the patients suffering from cirrhosis alone. The elevated values of ALP observed in cirrhosis with PLCC in this study is a recognized finding. [11]

In present study observed that the mean weight, total cholesterol, HDLC, HDLPL, HDLC/TC ratio, HDLPL/PL ratio and PL/TC ratio were statistically significant (p<0.05) but phospholipids was not statistically significant (p>0.05) between two group. Ahaneku et al. [10] reported in cirrhosis alone, total cholesterol and HDL cholesterol values were significantly reduced when compared with the corresponding control values. However, there was a significant increase in the ratio HDLC/TC. In cirrhosis with HCC, the TC was significantly increased while HDLC and HDLC/TC ratio were not significantly different from the control values. Statistical comparisons also showed that the TC and HDLC in cirrhosis with HCC were significantly higher than the corresponding levels in cirrhosis alone, while the slight difference in HDLC/TC was not significant. The mean values of PL, HDLPL and the ratio HDLPL/PL in cirrhosis alone were low when compared with the corresponding control values but the reduction in PL was not statistically significant. The ratio PL/TC in cirrhosis alone showed a significant increase (P<0.05). In cirrhosis with HCC, PL and PL/TC ratio were

significantly elevated while the changes in HDLPL and HDLPL/PL ratio were not significant when compared with the corresponding control values. Mean values of PL, HDLPL and ratio HDLPL/PL were significantly increased in cirrhosis with HCC when compared with the corresponding values in cirrhosis alone. However, the increase in the ratio PL/TC was higher in cirrhosis alone ($P<0.05$). The increase in the mean total cholesterol in cirrhosis with HCC have been related to a malignant obstructive lesion of the biliary tree. The loss of negative feedback mechanism for cholesterol regulation [12] as well as an increase in cholesterol synthesis by undifferentiated hepatocellular carcinoma cells [13] may be responsible for the hypercholesterolemia in cirrhosis with HCC. HDL-cholesterol and HDL cholesterol/total cholesterol levels in cirrhosis with PLCC were not significantly different from the control values. These observations are in disagreement with the decreased HDL-cholesterol reported by Haechem et al. [14] In cirrhosis alone, total cholesterol and HDL-cholesterol values were reduced and this may be due to cellular necrosis in cirrhosis. [15] Total phospholipid level in cirrhosis alone was not significantly different from the values for the control. This was not expected in a disease associated with extensive hepatocellular damage; thus this observation is contrary to the findings of a reduced phospholipid level in cirrhosis. [16,17] Motta et al. [18] detected that triglyceride (TG) level decreased 28.8% in 40 cases with liver cancer, and the reduction of TG levels observed in their study series may be explained on the basis of the relationship between cytokines and lipids. [19] Liver is a major source of the endogenous lipoproteins in vivo, meanwhile, and it is the main site of the synthesis, storage, transport and degradation of lipid. [5] Cholesterol ester transfer protein (CETP) is an important determinant of lipoprotein function, especially HDL metabolism, and contributes to the regulation of plasma HDL levels. [20] Lipoprotein metabolism is determined by the importance of hepatic apoE, and expression level determines the fate of LDL and HDL3. [21] Slow α-HDL appeared during slight bile stagnation and was accompanied by increases in the apoE level and the HDL particle size with liver cancer. [22]

Conclusion:

Liver cancers have significant effect on the TC and the LDL-C with TG, the HDL-C and the PL/TC ratio ratio of the subjects examined in this study. Since high level of LDL-C indicates elevated risk of Coronary Heart Disease (CHD), it was therefore suggested that lipid profile of liver cancer patients should be monitor to avoid CHD among liver cancer patients.

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Original Article

Association Between Obesity and Fibroid Uterus Among Bangladeshi Women: A Hospital Based Case-control Study

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ABSTRACT

Background: Uterine fibroid, also known as uterine leiomyomas or fibroids, are benign smooth muscle tumors of the uterus. Most women have no symptoms while others may have painful or heavy periods. If large enough, they may push on the bladder causing a frequent need to urinate. These common complications can be associated with irreversible complication, including infertility and malignancy.

Objectives: This study aims to assess the associated factors of obesity and fibroid uterus and have knowledge about the association between them among Bangladeshi women.

Method: The design of study and methodology was enriched by the participation of outdoor patients of gynecology and obstetrics department. The data was collected from the selected population.

Result: The study showed a significant relationship (p=0.048) between Diabetes mellitus and fibroid uterus and the participants who had diabetes mellitus (OR=1.692, 95% CI= 1.004-2.854) had 1.6 times higher chances of getting fibroid uterus rather who don't have. The patient who had any metabolic disorder (OR=1.223, 95% CI= 0.736-2.034) had 1.2 times higher chances of getting fibroid uterus than who don't have any metabolic disorders. Lastly the participants who had any endocrine disorders (OR=1.692, 95% CI= 1.004-2.854) have 1.6 times greater chance to have fibroid uterus rather than who don't have any endocrinal disorders.

Conclusion: Uterine fibroids are very common in women and frequently in late reproductive and perimenopausal years. It is also a common gynecological problem in our country, which frequently disturbs the lives of woman. Women now have choice of therapies for the treatment of fibroids.

Key words: Fibroid uterus, Obesity, Reproductive age.

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Introduction:

Uterine fibroid, also known as uterine leiomyomas or fibroids. Uterine fibroid are benign smooth muscle tumors of the uterus. In most of the cases women have no symptoms of it, while in some other cases some women may have painful or heavy periods. If the tumor become large enough, it may push on the bladder which causes a frequent need to urinate. This common complication can be associated with irreversible complication, including infertility and malignancy. A lot of women have uterine fibroids sooner or later in their life. The size, shape, and location of the fibroid can vary a lot. They can show up in uterus, uterine wall or on its surface. They can also attach to the uterus by a stalk or stem-like structure. Uterine fibroid can show up at any age but usually it appears in women of childbearing age generally between 30 and 40 years old. Many comorbid disease states including neoplasia are associated with obesity. The important risk factor of developing endometrial cancer is thought to be influenced by the higher level of circulating estrogen in obese women. Also, the uterine fibroid/leiomyoma is thought to be influenced by estrogen [1].

Obesity is a leading preventable comorbidity around the world, with expanding rates in adults and children. Obesity can be characterized as a therapeutic condition in which

excess body fat accumulates to the extent that it has adverse effect on health. Individuals are commonly viewed as obese when their body mass index (BMI), a measurement obtained by dividing a person's weight by the square of the person's height, is over 30 kg\m2 defined as overweight. But some countries use lower values. Obesity may increase in many diseases and conditions, particularly cardiovascular diseases, type 2 diabetes, obstructive sleep apnea, certain type of cancer, osteoarthritis and depression. Excessive intake of food, lack of physical exercise and genetic susceptibility are the common causes of obesity. Some risk factors of obesity are genes, endocrine disorders, medications or mental disorders. Among 195 countries 600 million adults (12%) and 100 million children were obese in the year 2015. The American Medical Association (AMA) declared obesity as a disease, in the year of 2013. Obesity is more found in women than men. Authorities view it as, in the 21st century one of the most serious health problems [2].

The devastating effects of obesity and its comorbidities are continuing to accelerate across the globe. Two-third of pregnant women is obese/overweight. Obesity, gestational diabetes mellitus, fibroid uterus, and infertility are affecting up to 1 in 5 women worldwide [3]. For developmental programming, the field of developmental origins of health and disease has begun to move beyond association to potential causal mechanisms. Furthermore, there is evidence across species compellingly demonstrates that maternal obesity and Western-style diets create a long-lasting signature on multiple systems. Finding out the association between obesity and fibroid uterus is a critical unmet need and present new challenges for disease prevention in the next generation [3].

Research Methodology:

This was a case-control study design. The cases were the diagnosed cases of outdoor visiting patients of gynecology and obstetrics department who was suffering from fibroid uterus.

Controls was patients visiting outdoor those was not suffering from uterine fibroid. A case-control study was used because it was an efficient way to identify and investigate risk factors for fibroid uterus. It could form the basis for future cohort studies for fibroid uterus to investigate further risk factors related to obesity.

The study was conducted among adult females of Dhaka city who had come to Dhaka Medical College Hospital and Northern International Medical College Hospital for ultrasonography.Study sites were Dhaka Medical College Hospital and Northern International Medical College and Hospital.They both were located in Dhaka, Bangladesh. There were 120 Cases, 120 Controls.

Inclusion for cases were age group from 18 and above, subjects who was the patients of Gynecology and Obstetrics outdoor patients of Dhaka Medical College Hospital and Northern International Medical College and Hospital with the diagnosis of fibroid uterus by USG testing, patients who was intended to respond in the interview. Inclusion criteria for controls were age group from 18 and above, outdoor patients of Dhaka Medical College Hospital and Northern International Medical College and Hospital other than fibroid uterus was selected, patients who was intended to respond in the interview. Exclusion Criteria were age of the patients which was less than 18, subjects who did have recent major accidents or major surgery in any part of the body, subjects who were medically unstable, patients who refused to respond in the interview.

The sample was selected conveniently to interview the study population considering the inclusion and exclusion criteria. The sample size was selected by convenient sampling technique. A structured questionnaire was designed to collect information about the association between obesity and fibroid uterus that was prepared in advance before data collection. A face to face interview was conducted to collect the data from the patient. The statistical analysis of the data was carried out by software program SPSS version 20. Data was checked, edited and appropriately coded before analysis. For summarizing data, statistics such as mean, median, mood, and the percentage was calculated. The data was presented in tables, graphs, and charts. Pre-test and questionnaire was used.

Results:

Table-1: Association between fibroid uterus and socio demographic factors.

Variable	Level	Case	Control	Total (N=240)
		n	n	n
Age Group	20-29	5	12	7
	30-39	47	76	29
	40-49	42	85	43
	>49	35	67	32
Age	Mean ±SD	44±9.4		
Marital status	Married	89	181	92
	Unmarried	31	59	28

Table 1 Illustrate the Socio Demographic Information of the case and control. It shows that about 31.7 % respondents were in the age group of 30-39 years old and of 61.9% were cases and 38.1% were controls and mean age 44 years with ±9.4 years standard deviation. 75.4% respondents were married.

Table-2: Association between fibroid uterus and life style factors

Variables	Level	Case	Control	P-value
		n (%)	n (%)	
Physical exercise	Yes	47 (55.3%)	38 (44.7%)	
	No	73 (47.1%)	82 (52.9%)	0.224
Red meat consumption	Less than 3 times a week	43 (42.6%)	58 (57.4%)	
	3-5 times in a week	63 (52.6%)	57 (47.5%)	0.041
	Everyday	14 (73.7%)	5 (26.3%)	0.017
Vegetable Consumption	Less than 3 times a week	22 (52.4%)	20 (47.6%)	0.534
	3-5 times in a week	69 (46.9%)	78 (53.1%)	0.666
	Everyday	29 (56.9%)	22 (43.1%)	
Sleeping hours	≤ 8 hours	50 (46.7%)	57 (53.3%)	
	> 8 hours	70 (52.6%)	63 (47.4%)	0.363

Table 2 illustrates that the respondents who don't do any physical (OR=1.389, 95% CI= 0.817-2.363) exercise they have 1.3 times higher chance of getting fibroid uterus. Red meat consumption was significantly associated with fibroid uterus (p=0.041 and 0.017). The participants who ate red meat 3-5 times in a week (OR=2.533, 95% CI=1.264-11.285) and those who eat red meat everyday (OR=3.777, 95% CI=0.858-7.476) have 2.5and 3.7 times higher chance to get fibroid in their uterus. The participants who consume vegetables Less than 3 times a week (OR=0.243, 95% CI= 0.626-2.471) and 3-5 times in a week (OR=0.834, 95% CI= 0.367-1.896) have 24.3% and 83.4% less likely chance to have fibroid in their uterus.

Table-3: Association between fibroid uterus and obstetric factors

Variables	Level	Case	Control	P-value	Total (N=240)
		n (%)	n (%)	n (%)	
Age of marriage	≤ 18 years	42 (52.5%)	38 (47.5%)	80 (33.3%)	0.459
	19-28 years	67 (49.6%)	68 (50.4%)	135 (56.2%)	0.605
	> 28 years	11 (44%)	14 (56%)	25 (10.4%)	
Number of conceptions	≤ 2 times	95 (47.3%)	106 (52.7%)	201 (83.8%)	0.057
	> 2 times	25 (64.1%)	14 (35.9%)	39 (16.2%)	
Oral contraceptive use	< 3 months	43 (47.8%)	47 (52.2%)	90 (37.5%)	0.594
	≥ 3 months	77 (51.3%)	73 (48.7%)	150 (62.5%)	
Age of menarche	≤ 12 years old	40 (59.7%)	27 (40.3%)	67 (27.9%)	0.061
	> 12 years old	80 (46.2%)	93 (53.8%)	173 (72.1%)	
Menstrual status	Pre-menopausal	77 (51%)	74 (49%)	151(62.9%)	0.820
	Peri-menopausal	37 (47.4%)	41 (52.6%)	78(32.5%)	0.659
	Post-meopausal	6 (54.5%)	5 (45.5%)	11 (4.6%)	

Table 3 shows that the participants married ≤18 years (OR=0.711, 95% CI=0.288-1.754) had 71% less likely chance to get fibroid and the participants who married between 19-28 years (OR=0.791, 95% CI= 0.338-1.882) had 79% less likely chance to get fibroid. The participants who have conceived less than or equal to 2 times (OR=0.502, 95% CI= 0.247-1.021) had 50% less likely chances to get affected by fibroid uterus. The respondents who have taken oral contraceptives for less than 3 months (OR=0.867, 95% CI= 0.514-1.463) had 86% less chance to get fibroid in their uterus than who have taken oral contraceptives for more than or equal to 3 months. The respondent whose menstruation had started less than or equal to 12 years (OR=1.722, 95% CI= 0.972-3.053) had 1.7 times greater chance of having fibroid in their uterus than whose menstruation had started more than 12 years age.

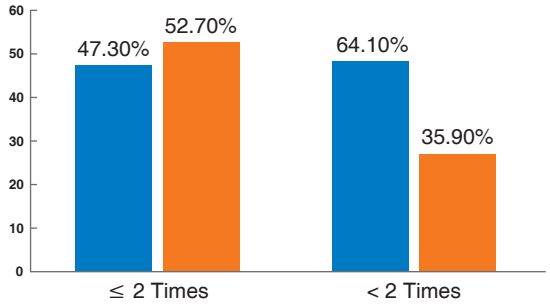

Fig 1: Distribution of fibroid uterus among cases and controls

Table-4: Association between fibroid uterus and other factors

Variables	Level	Total (N=240)	Case	Control	P-value
		n (%)	n (%)	n (%)	
Diabetes mellitus	Yes	95 (39.6%)	55 (57.9%)	40 (42.1%)	0.048
	No	145 (60.4)	65 (44.8%)	80 (55.2%)	
Hypertension	Yes	86 (35.8%)	39 (45.3%)	47 (54.7%)	0.282
	No	154 (64.2%)	81 (52.6%)	73 (47.4%)	
Metabolic disorder	Yes	110 (45.8%)	58 (52.7%)	52 (47.3%)	0.437
	No	130 (54.2%)	62 (47.7%)	68 (52.3%)	
Endocrine disorder	Yes	95 (39.6%)	55 (57.9%)	40 (42.1%)	0.048
	No	145 (60.4%)	65 (44.8%)	80 (55.2%)	

Table 4 shows a significant relationship (p=0.048) between Diabetes mellitus and fibroid uterus and the participants who had diabetes mellitus (OR=1.692, 95% CI= 1.004-2.854) had 1.6 times higher chances of getting fibroid uterus rather who don't have. The patient who had any metabolic disorder (OR=1.223, 95% CI= 0.736-2.034) had 1.2 times higher chances of getting fibroid uterus than who don't have any metabolic disorders. Lastly the participants who had any endocrine disorders (OR=1.692, 95% CI= 1.004-2.854) have 1.6 times greater chance to have fibroid uterus rather than who don't have any endocrinal disorders.

Table-5: Univariate analysis of BMI among cases and controls

Variable	Level	Case	Control	P-value
		n (%)	n (%)	
BMI	<18.5 (Underweight)	6 (5%)	11 (9.2%)	
	18.5-24.9 (Normal	38 (31.7%)	32 (26.7%)	0.166
	25-29.9 (Overweight)	53 (44.2%)	43 (35.8%)	0.03
	30-39.9 (Obese)	23 (19.2%)	34 (28.3%)	0.01

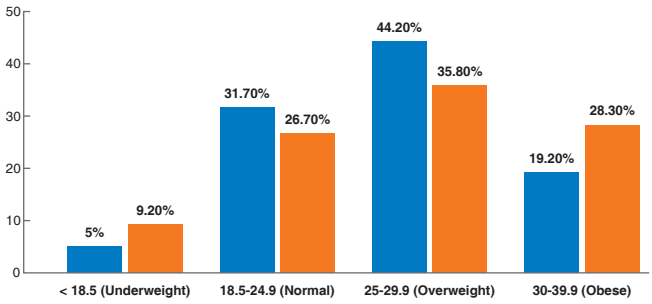

Fig 2: Distribution of BMI among cases and controls

Discussion:

The aim of this study was to determine the relationship between obesity and the development of fibroids in 240. Prior to the study, 50% (120 of 240) of the sampled participants stated that they had been previously diagnosed with fibroids. This finding is consistent with available data which suggests that fibroids are the most common benign pelvic tumor in women, causing symptoms in approximately 25% of women in their reproductive age with the overall prevalence of fibroids increasing to over 70%. The highest prevalence (43.1%) of the fibroid cases was found among women aged 30-39 years and the lowest (7.9 %) recorded among women aged greater than 49 years. The current study also showed that 31.0 % of the women aged between 20-29 years also recorded significant cases of fibroid which is in agreement with previous works conducted elsewhere [34, 35] which suggest that uterine fibroid by sonography is very common among women in their late 30's and 40's, and usually shrink after menopause with a prevalence of two to five times more in black women than white women. The prevalence recorded from the current study was higher than that obtained by Lurie et al, (2005) [36] which estimated the prevalence of uterine fibroids as 4% in women aged 20-30 years, 11 to 18% in women between 30-40 years and 33% in women between 40-60 years. This difference could be attributed to racial and environmental factors.

Our findings are consistent with earlier reports that fibroids are more frequent in premenopausal women,8,9,22 in more educated women,8'9 in women with early age at menarche, and in nulliparous women.9 Our finding that oral contraceptive use is not associated with reported fibroids is also in line with an earlier report9; however, among women who reported less frequent Pap smears, the positive association between reporting

fibroids and using oral contraceptives might have been due to a detection bias, given that long-term oral contraceptive users probably have more frequent medical visits, which could lead to the detection of fibroids. This finding is in line with some reports'112 that indicate that oral contraceptive use may enhance the diagnosis of fibroids owing to detection bias. Conversely, women with infrequent Pap smears who have not used oral contraceptives probably have had less opportunity for fibroid detection. Increased reporting of fibroids with frequent Pap smears among both users and nonusers of oral

contraceptives would suggest that gynecological surveillance owing to frequent Pap smears may enhance the detection of fibroids.

Having fibroids at a much younger age may be related to a strong family history and the increased risk of uterine leiomyoma in people of African descent. In the premenopausal age group, this may result in infertility and menorrhagia depending on the location. Fibroids have social, economic and medical implications in the women populace.

Premenopausal women (18-45yrs) in Ghana constitute about 40% of the Ghanaian population [37] and are strong component of the country's workforce and thus contribute immensely to the economy. Out of the 216 patients confirmed with fibroid, 37.0 % (80) and 45.4% (98) were overweight and obese respectively. Although the mechanism of obesity development is not fully understood, there is supporting evidence that unhealthy eating habits such as, excessive sugar and high fat intake, increased portion sizes coupled

with physical inactivity have been playing major roles in the rising rates. [38, 39]

Social desirability for overweight and obesity in women is also cited as a cause for obesity among women in the West African region. It is well documented that some ethnic groups in Africa historically preferred overweight women and embraced cultural practices that encouraged female obesity.[40] It was also observed that 75% of women with fibroid had higher education (ie. above secondary level) confirming previous findings [41] that female gender and tertiary education was associated with higher levels of obesity among Ghanaian adults. Ovarian hormones, oestrogen and progesterone have been associated with the promotion of the growth of fibroid [11, 22] and also have a strong linkage with obesity. [23] These factors may contribute to the higher prevalence of overweight and obesity recorded among women with uterine fibroids in our study. Findings of our study showed a significant relationship between BMI, Level of Education and development of fibroids (R= -0.196; $\chi 2$ value= 29.618; p = 0.001) and (R= 0.399, $\chi 2$ value= 92.923; p = 0.001) respectively. There was also a significant relationship between BMI and Level of Education (R = -0.150; $\chi 2$ value= 33.556; p = 0.001). However, Age Group was not significantly associated with BMI ($\chi 2$ value =2.279; p vale = 0.892) or development of fibroids ($\chi 2$ value = 4.337; p-value = 0.227). Similar findings [42, 43] consistent with findings of our study reported that BMI and weight gain in adulthood was associated with risk of uterine leiomyomata.

Conclusion:

This case control study was able to identify some important risk factors for uterine fibroids. The risk factors were BMI, diabetes mellitus, endocrine disorder, red meat consumption and ever alcohol use. The exposure to passive smoking was not found to be associated with occurrence of uterine fibroid. Other known risk factors like age at menarche, and age of mother at first child birth were not found to be significant risk factors in this study. Managing the health of the Bangladeshi woman is essential for the socio-economic growth of the country.

Recommendation:

The results of this study have demonstrated the link between obesity and fibroid. Obesity in this population indicates the need for appropriate interventions for its prevention and treatment in Bangladeshi women. Regular red meat consumption and sedentary life style should be avoided. Early diagnosis and control of metabolic diseases is mandatory. Health education and healthy life styles also need to be encouraged among the Bangladeshi women. Managing the health of the Bangladeshi woman is essential for the socio-economic growth of the country

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Original Article

Knowledge and Attitude Towards Complementary Feeding among Mothers Coming to Department of Pediatrics of Shaheed Ziaur Rahman Medical College Hospital

Husain K S [1], Rahman M A [2]

ABSTRACT

Background: Malnutrition remains one of the most common causes of morbidity and mortality among children throughout the world. Nutritional status is most vulnerable during complementary feeding (CF) period when both macronutrients and micronutrients may be insufficient to maintain growth and development. Mothers proper knowledge and right attitude towards CF to prevent malnutrition is of utmost importance, because mother is the first and most important primary health worker for her children.

Objectives: To determine the knowledge and attitude of mothers towards CF practices for providing proper counseling in this matter.

Method: Participants were selected by convenience sampling method. The study undertaken on a study sample of 200 mothers with children <2 years old attending at outpatient department (OPD) and inpatient department (IPD) of Pediatrics of ShaheedZiaur Rahman medical college hospital (SZMCH), Bogra. A structured questionnaire used to assess knowledge and attitude towards CF.

Results: Regarding knowledge towards cause of start of CF mostly mothers 140 (70%) knew that CF should be start due to increasing nutritional demand of children, regarding knowledge towards complementary foods containing macronutrients, only 14 (07%) mothers knew it appropriately and regarding micronutrients, only 20 (10%) mothers knew it appropriately. Regarding Attitude towards time of start of CF 102 (51%) mothers started CF at appropriate time whether 43 (21.5%) started CF earlier and 55 (27.5%) started CF late. Regarding attitude towards taking component of CF 02 (01%) children were getting from only animal sources, 40 (20%) from only plant sources and158 (79%) from both sources. Regarding attitude towards maintain hygiene and safety during cooking, storing and feeding 188 (94%) mothers claimed that they maintained hygiene and safety, regarding attitude towards giving responsively CF consistent with child's signals of appetite and satiety 179 (89.50%) mothers claimed that they are given CF responsively.

Conclusion: The study reveals that CF practices are inappropriate in large number of children. Knowledge regarding various aspects of CF is also lacking. So proper counseling is required for mother to improve the nutritional status, growth and development, health and survival of infants and young children through optiml CF practices.

Key Words: Knowledge, Attitude, Complementary feeding.

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Introduction:

Malnutrition remains one of the most common causes of morbidity and mortality among children throughout the world. Nutritional status is most vulnerable during CF period when both macronutrients and micronutrients may be insufficient to maintain growth and development. Protein energy malnutrition and micronutrients under nutrition occur together. [1] The growth of children in developing countries often declines with the introduction of complementary foods around the age of 6 months and continues to decline up to 18 months. [2] Appropriate CF means provision of right foods at right time in right amount, prepared and delivered hygienically along with breast milk to sustain growth of the baby. [3] Traditionally complementary foods are liquids and semisolids which are later replaced by foods eaten by older family members. In some cases these types of foods can not be filling and not yet meet the child's nutrients needs. There are many contributing factors includes mothers knowledge and attitude towards CF practices, economic status, mothers education level, size of the family, customs and taboos etc lead to inappropriate CF practices. [4] Mothers proper knowledge and right attitude towards CF to prevent malnutrition is of utmost importance, because mother is the first and most important primary health worker for her children. [5] The fourth millennium development goal (MDG-4) focuses on reduction of infant and under five mortality rate by 2015. Appropriate CF may

help to achieve the goal of MDG-4. Improved CF can reduce child mortality by 6%.[6] Hence this study is conducted to assess knowledge and attitude towards CF among mothers.

Method:

After taking informed written consent from participant mothers and permission from concerned authorities, the study undertaken on a study sample of 200 mothers with children <2 years old attending at OPD and IPD of Pediatrics of Shaheed Ziaur Rahman medical college hospital (SZMCH), Bogra from June 2014 to November 2014. A structured questionnaire used to assess knowledge and attitude towards CF. Participants were selected by convenience sampling method .After taking informed written consent; the procedure was explained to the participants. The participants were at large on taking decision whether to participate or not and had the liberty to exclude themselves from the study at any point of time .They were assured that their voluntary withdrawal from the study at any point would not interrupt the treatment of their child.

Results :

From the result of study it is seen that participating 200 mothers gave variable response to questions regarding knowledge and attitude towards CF.

Table-1: knowledge towards cause of start of CF

Cause of start of CF	No. (200)	Percentage
Increasing nutritional demand O of child	140	70
Child led, happened naturally	30	15
Family decision	21	10.50
Social pressure	07	03.50
Others	02	01

Regarding knowledge towards cause of start of CF, mostly mothers 140 (70%) knew that CF should be start due to Increasing nutritional demand of child.

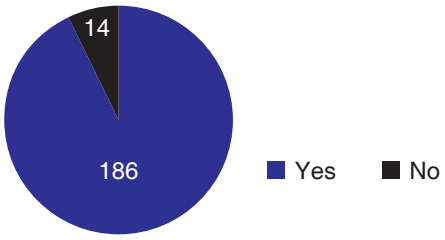

Figure 1 knowledge towards complementary foods containing macronutrients Regarding knowledge towards complementary foods containing macronutrients, only 14 (07%) mothers knew it appropriately and others 186 (93%) were not.

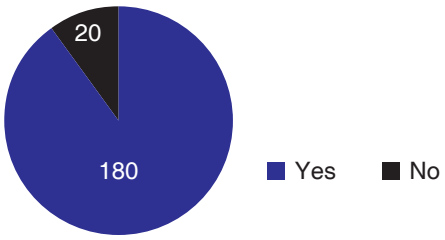

Figure 2 knowledge towards complementary foods containing micronutrients Regarding knowledge towards complementary foods containing micronutrients, only 20 (10%) mothers knew it appropriately and others 180 (90%) were not.

Table-2: Attitude towards time of start of CF

Time of start of CF	No. (200)	Percentage
< 4 months	17	08.50
≥4 months but <6 months	26	13
6 months	102	51
7--9 months	34	17
10--12 months	17	08.50
>12 months	04	02

Regarding Attitude towards time of start of CF, 17 (08.50%) mothers started complementary foods to their children at < 4 months, 26 (13%) at≥4 months but <6 months, 102 (51%) at 6 months, 34 (17%) at 7--9 months, 17 (08.50%) at 10--12 months, 04 (02%) at >12 months.

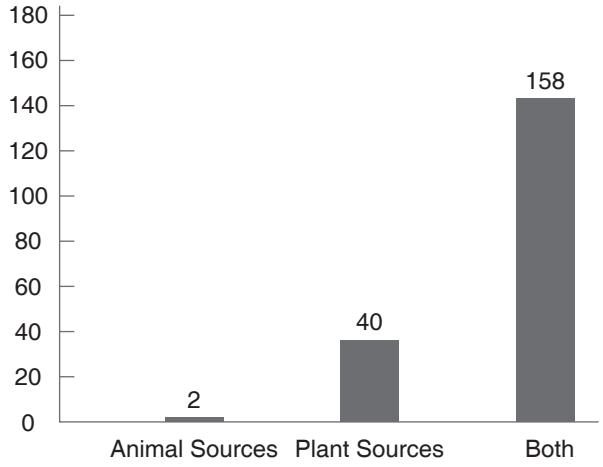

Figure-3: Attitude towards taking component of CF

Regarding attitude towards taking component of CF, 02 (01%) children were getting CF from only animal sources (egg, fish, chicken, beef etc), 40 (20%) from only plant sources (khichuri, bhaat-dal, suji, vegetables, fruits etc) and 158 (79%) from both sources.

Table-3: Attitude towards maintain hygiene and safety during cooking, storing and feeding

Maintain hygiene and safety	No. (200)	Percentage
Yes	188	94
No	12	06

Regarding attitude towards maintain hygiene and safety during cooking, storing and feeding, 188 (94%) mothers claimed that they maintained hygiene and safety like hand washing by soap water before and after cooking and feeding, feed fresh foods, use clean utensils, cover stored food by clean utensils etc.

Table-4: Attitude towards giving responsively CF consistent with children's signals of appetite and satiety

Giving CF consistent with child's signals of appetite and satiety	No. (200)	Percentage
Yes	179	89.50
No	21	11.50

Regarding attitude towards giving responsively CF consistent with child's signals of appetite and satiety, 179 (89.50%) mothers claimed that they are given CF responsively.

Discussion:

Appropriate feeding practices are essential for the nutrition, growth, development and survival of infant and young children. Infants should be exclusively breastfed for the first six months of life and thereafter should receive nutritionally adequate and safe complementary foods while breastfeeding continue up to two years. [7] Severe malnutrition is an important cause of death in children. [8] About 50-60% of under 5 mortality is caused by malnutrition due to poor breastfeeding practices, inadequate complementary foods and low birth weight. [9] Appropriate CF depends on accurate information, skilled support from the family, community and health care system.

In this study mothers knowledge and attitude towards CF were assessed under several domains. All the respondent mothers were with children < 2 years whose children have started CF. From the result of study, it is seen that participating mothers gave variable response to questions regarding knowledge and attitude towards CF. In this section, found result of the present study compared with the other studies. Different parts of the study would be evaluated.

Regarding knowledge towards cause of start of CF (Table 1), mostly mothers 140 (70%) knew that CF should be start due to increasing nutritional demand of children.

Regarding knowledge towards complementary foods containing macronutrients (carbohydrate, protein, fat) (Figure 1), only 14 (07%) mothers knew it appropriately and others were186 (93%) not. A study in Bangladesh, only 3% of mothers know how to prepare proper complementary foods. [5]

Regarding knowledge towards complementary foods containing micronutrients (vitamins, minerals) (Figure 2), only 20 (10%) mothers knew it, others were180 (90%) not. Mothers who knew it all were literate (high school and above). Another study in India, concluded that CF practices were inappropriate and knowledge inadequate of the majority of the children studied. [10]

Regarding Attitude towards time of start of CF (Table 2), 19 (09.50%) mothers started complementary foods to their children at < 4 months, 30 (15%) at≥4 months but <6 months, 102 (51%) at 6 months, 28 (14%) at 7--9 months, 17 (08.50%) at 10--12 months, 04 (02%) at >12 months. Mothers who were not started CF at appropriate time (6 months) due to their lack of knowledge. A study in India, among 300 children aged 0-5 years, CF not started 23 (7.7%), started at 1-4 months 14 (4.7%), started at 5-8 months 215(71.7%), started at 9-12 months 43 (14.3%), started at 13-16 months 1(0.3%), started at 17-20 months 4 (1.3%). [11]

Regarding attitude towards taking component of CF (Figure 3), 02 (01%) children were getting CF from animal sources, 40 (20%) from plant sources and 158 (79%) from both sources. A study in Bangladesh, 110 infants family food such as rice and vegetables were given in 30% and 40%children respectively from 6 months to 1 year. [12] Regarding attitude towards maintain hygiene and safety during cooking, storing and feeding (Table 3), 188 (94%) mothers claimed that they maintained hygiene and safety Regarding attitude towards giving responsively CF consistent with child's signals of appetite and satiety (Table 4), 179 (89.50%) mothers claimed that they are given CF responsively.

This study is done only one center, so it will not reflect the scenario of the whole country.

Conclusion:

From the result of study it is seen that participating 200 mothers gave variable response to questions regarding knowledge and attitude towards CF. The study reveals that CF practices are inappropriate in large number of children.

Knowledge regarding various aspects of CF is also lacking. So proper counseling is required for mother to improve the nutritional status, growth and development, health and survival of infants and young children through optimal CF practices. Further studies can be undertaken in this respect.

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Case Report

Title:Management of a Twisted Ovarian Tumor in Pregnancy

Begum A A [1]

ABSTRACT

Adnexal masses are diagnosed frequently in pregnancy,but only a small number become symptomatic.

Here the laparoscopic ovarian cystectomy was performed during pregnancy successfully, which was followed by an uneventful pregnancy outcome.

Key Words: Twisted ovarian tumor, Pregnancy

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Introduction:

The incidence of adnexal masses during pregnancy is 0.2-2%. With a 1-6% malignancy rate, the vast majority of these masses are benign, nonfunctional and physiological cyst which tend to resolve spontaneously. [1, 2, 3]

Case report:

A 26yrs old lady wife of a serving Cpl , admitted to CMH Dhaka at her 14 wks pregnancy due to pain abdomen and diagnosed as a twisted ovarian tumor . Her examination revealed uterus 14 weeks size & tenderness on the left side . Ultrasonography visualized a 14 weeks alive foetus and a left sided hyperechogenic mass measured (6×4 cm) and evidence of free intraperitoneal fluid collection & feature left adnexal torsion.

On December 2014, She underwent laparoscopic procedure. A mucinous cyst and two times twisted at its pedicle was found the cyst was conducted smoothly without any_intra-abdominal_spilling_and_left_sided salpingoophorectomy was done.The gravid uterus was kept undisturbed The overall blood loss was around 40 ml. The operative time was 1 hour and there were no intra operative complications. Histopathology_confirmed_mucinous_cystadenoma. she delivered a male baby at 38 weeks by Caesarean section & she was healthy during her immediate post operative days and further follow up upto one year.

Conclusion:

The data on laparoscopy during the first and second trimesters of pregnancy indicate that it is as safe as laparotomy. Present day this method is a good alternative choice for surgical intervention during pregnancy.

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Case Report

Olanzapine Induced Rabbit Syndrome: A Case Report

Bhuiyan F K [1], Sarker M R [2], Rahman N [3]

ABSTRACT

An adult schizophrenic patient developed rabbit syndrome after the treatment with oral olanzapine.Rabbit syndrome (RS) is a rare side effect of prolonged neuroleptic administration. It is characterised by rapid, fine, rhythmic movements of the mouth along a vertical axis. Long-term exposure to the first generation neuroleptics has clearly been associated with rabbit syndrome. We present the case history of a 40 year old female patient treated for schizophrenia for 10 years and rabbit syndrome during her last 8 month olanzapine treatment. Since it was first described in 1972, rabbit syndrome has been mainly associated with the typical antipsychotics, primarily high-potency agents such as haloperidol. [3] However, atypical antipsychotics are now used more frequently than in the past, and rabbit syndrome has also been reported in association with olanzapine.

Key Words: Rabbit syndrome, Olanzapine.

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Case presentation:

Sahara was a 40 years old woman born in Dashuria , Pabna. She was housewife and had dropped out from school. She was brought into our hospital by her family against her will. She was complaining of paranoia . In addition, she refused to speak and eat . Sahara also rejected other people's company and preferred to stay in house. She could not sleep. According to her family, her first complaint had started at the age of 30. Based on information from her family, we learnt that she had begun improper behaviour. Also her family said that she was hearing strange noises. Since then she had been treated in different hospitals and clinics, being given various medications based on the diagnosis of schizophrenia. It was reported that in the first 06 years of her treatment she was prescribed with haloperidol (15 mg) regularly and then she was prescribed with anti-psychotics such as fluphenazine decanoate (25 mg). It was also said that in the last four years of her treatment she was prescribed with olanzapine 15 mg/day. Some side effects, such as a frequent sensation of slowing down, dryness in her mouth, limited movements and tremor in her hands were observed during the period of medication. The family pointed out that there had been little improvement in her condition while she was taking olanzapine, but its side effects compromised continuity of treatment. Her symptoms worsened and her family brought her to the mental hospital. There was no history of any neurological or psychiatric disease in the family. She had not completed her school.She had not had any medical problems before her illness. She was non smoker and non alcoholic.Six months before presentation she had begun to suffer from insonnia, although she had no previous history of insomnia. She refused meals prepared by others family member, believing them to be poisoned. According to her family, the patient had been more talkative. One month prior to admission, the dose was increased to 20mg and she developed intermittent fine, rhythmic, vertical movements of her lips, bilateral resting hand tremor, and akathisia. The dose was tapered down from 20 to 10 mg over one month prior to admission to address these side effects. However, per clinical assessment during inpatient admission, these movements persisted. There was no involvement of her tongue except for passive, lip-associated secondary movements.

Her vital signs showed significant fluctuations- temperature: 101-103 F, pulse rate: 80-110 beats/minute, blood pressure: 130-150/80-100 mm of Hg and respiratory rate: 18-24/minute. His investigations revealed WBC count of 18,100/cmm and serum CPK levels of 1800 IU/L. His X-ray skull and chest, ECG, liver and renal function tests, serum electrolytes were within normal limits.

Discussion:

This case demonstrates Rabbit Syndrome attributable to Olanzapine.It is a atypical antipsychotic previously not associated with this syndrome. Rabbit Syndrome is differentiated from tardive dyskinesia by its rhythmicity, sparing of the tongue, and lack of irregular choreothetotic extra-buccal movements of muscles1.Rabbit syndrome is believed to be a rare condition affecting only a small fraction

of the psychiatric population using antipsychotics. In the recent past, Rabbit syndrome was also observed in patients treated with the newer antipsychotics [2,3]. The exact mechanism of rabbit syndrome remains unknown, and the literature suggests conflicting causes. For example, it has been suggested that rabbit syndrome may be similar to drug-induced Parkinson disease, whereby a hypercholinergic state arises secondary to dopamine blockade [4]. Although the prevalence of rabbit syndrome is reported to be 1.5%–4.4% with the typical antipsychotics, 5 no studies examining its prevalence with the use of atypical antipsychotics were identified. Typically, the onset of rabbit syndrome is slow, and it appears after months to years of treatment. [6] This case serves as an important reminder that uncommon extrapyramidal side effects can occur even with the use of newer second-generation antipsychotic agents such as olanzapine. Fortunately, rabbit syndrome appears readily treatable by reducing the dose of the offending antipsychotic, and it typically resolves within several days of treatment with an anticholinergic agent [7].

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