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AT A GLANCE

46

Azithromycin
Azalid[®]
250 mg Capsule & 500 mg Tablet
200 mg/5 ml Suspension

Simple Dose, Faster Efficacy

Azalid shows higher success rate against winter diseases...

Typhoid Fever



100%

Sinusitis



96%

Tonsillitis



96%

SSSI



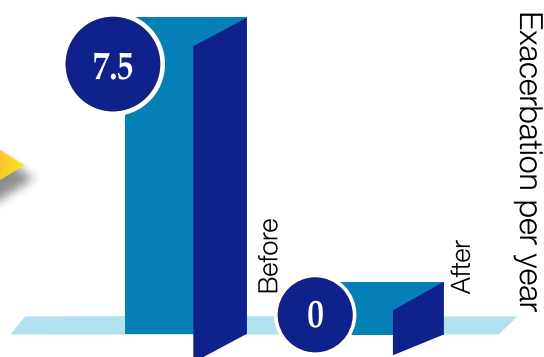
100%

Pneumonia



88%

Also decreases Exacerbation in Asthma



Single Solution for Common Winter Diseases

Dose:

Adults: 500 mg once daily for 3 days
Children: Over 6 months – 10 mg/kg once daily for 3 days
(Typhoid fever - 20 mg/kg for 5 days)

Ref.: 1. Mil Med. 2017 Sep; 182 (2)
2. Jennings, Comparison of Azithromycin and Cefadroxil for the Treatment of Uncomplicated Skin and Skin Structure Infections.
3. Medicine, P. (2001); 31, 417-422.
4. Moder, O. (1993); 137-146.
5. Treatment of Atypical Pneumonia with Azithromycin, (2016), 9478 (April)
6. Clin Exp Pharmacol Physiol. 2019 Jan 4

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Editor's Choice

The Orion Medical Journal is rejoicing 20th years of trust and service to the medical community. The Orion Medical Journal achieves the choice of thousand readers nationally and in the international arena. This medical journal contains information from reputable sources and although reasonable efforts have been made to publish accurate information. Any information or guidance contained in this book is intended for use solely by medical professionals strictly as a supplement to the medical professional's own judgement, knowledge of the patient's medical history, relevant manufacturer's instructions and the appropriate best guidelines.

Editorial article (P-02) of this issue "Strong association of Polycystic ovarian syndrome (PCOS) with vitamin D deficiency in reproductive age group". This study shows that, vitamin D3 deficiency has a strong correlation with PCOS. Screening and correction of vitamin D3 deficiency may prevent PCOS and its manifestations. Each and Every patients of PCOS should be screened by measuring the level of serum vitamin D3.

The first original article (P-07) "Outcome of primary arteriovenous fistula for hemodialysis: Our experience". The aim of this study was to identify the factors which affecting the postoperative outcomes in primary arteriovenous fistula as Arteriovenous fistula is accepted as optimal form of vascular access for hemodialysis in clinical practice.

Second original article (P-11) "Cervical Thymic Duct Cyst, a rare Cystic Lateral Neck Mass in Children "In this original article a study conducted through a series of cases Due to its rarity, it almost always escapes a correct preoperative diagnosis. CT, MRI, and FNA are all helpful investigations in the diagnosis of cervical thymic cysts, but a definitive diagnosis requires identification of thymic tissue containing Hassall's corpuscles.

Review article (P-17) "Obstetric Near Miss : A new Indicator of Quality of Obstetric Care." This study concluded with Obstetric haemorrhage, severe hypertensive disorders and dystocia are the leading causes of maternal near-miss cases. This reflects largely the reluctant prenatal care seeking behavior and to some extent sub-optimal quality of care.

Case Report (P-22) "Awareness About Breast Cancer Among Women of Reproductive Age Group Attending Out Patient Department of Dhaka Medical College Hospital" This study has been conducted among women of reproductive age to identify the level of knowledge and awareness Among them regarding breast cancer and its prevention, control measures and risk factors.

Observational Study (P-31) "Knowledge Regarding Organophosphorus Poisoning Among Nurses in a Hospital of Siddharthanagar Municipality." This study has been conducted to find out the knowledge regarding organophosphorus poisoning among nurses.

Thanks all of readers, contributors & reviewers for their continued support.

"A kind word is a form of charity." Prophet Muhammad (peace be upon him)

Good health and good sense are two of life's greatest blessings. May the Almighty bless you with good health, give you a healthy life.



DR. SINTHIA ALAM
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Strong association of Polycystic ovarian syndrome (PCOS) with vitamin D deficiency in reproductive age group

Dr. Naima Sharmin Hoque¹, Prof. SK. Zinnat Ara Nasreen², Dr. Md. Zohurul Hoque³, Dr. Sdika Kadir⁴

ABSTRACT

Introduction: Polycystic Ovarian Syndrome (PCOS) is a common endocrine disorder among women in reproductive age group. It is characterized by the following: ovulatory dysfunction resulting in oligo-amenorrhea and/or anovulation, hyperandrogenism and/or hirsutism and the presence of polycystic ovarian morphology by ultrasound. Vitamin D plays a physiologic role in reproduction including ovarian follicular development and luteinization via altering anti-müllerian hormone (AMH) signalling, follicle-stimulating hormone sensitivity and progesterone production in human granulosa cells.

Objective: To see the vitamin D deficiency level and its effect in PCO patients among the reproductive age group.

Method: This prospective study was conducted on 350 patients of PCOS who are already diagnosed at department of obstetrics and gynecology at Z H Sikder Women's Medical College and Hospital, Bangladesh from 2017-2018. Diagnosis of PCOS was made by Rotterdam 2003 criteria. A detailed assessment was done and preformed proforma was filled. Serum vitamin D3 was estimated by standard lab technique 'Liquid Chromatography Tandem Mass Spectrometry' and categorized into vitamin D3 sufficient: >30ng/dl, insufficient: 20-29ng/dl and deficient: <20ng/dl group. Data analysis was done by SPSS.

Result: Various parameters associated with PCOS like waist-hip ratio, obesity, AN of neck and hirsutism score showed positive significant correlation with vitamin D3 deficiency. Among 350 patients majority of cases 60% (210) were suffered from vitamin D3 deficiency, insufficiency was found in 31.43% (110) cases.

Conclusion: This study concludes that vitamin D3 deficiency has a strong correlation with PCOS. Screening and correction of vitamin D3 deficiency may prevent PCOS and its manifestations. Each and Every patients of PCOS should be screened by measuring the level of serum vitamin D3.

Keywords: Polycystic ovary syndrome, Rotterdam criteria, Vitamin D3 deficiency

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INTRODUCTION

Polycystic ovarian syndrome is a common endocrine disorders among women of reproductive age. Its worldwide prevalence has been estimated between 2.2% and 26%, which is reported about 7.1% among Iranian population¹. PCOS is characterized by the following: ovulatory dysfunction resulting in oligoamenorrhea and/or anovulation, hyper-androgenism and/or hirsutism, and the presence of polycystic ovarian morphology by ultrasound². It may also create long-term health risks, such as type 2 diabetes, endometrial cancer and cardiovascular disease as it is associated with anovulation, hyperinsulinemia and central obesity³.

Vitamin D has important roles in various parts of the body, especially in the bones. The active form of vitamin D plays an important role in bone metabolism, regulation of

calcium-phosphorus equilibrium and cell differentiation and proliferation⁴. Vitamin D also plays a physiologic role in reproduction including ovarian follicular development and luteinization via altering anti-Müllerian hormone (AMH) signalling, follicle-stimulating hormone sensitivity and progesterone production in human granulosa cells⁵. It also affects glucose homeostasis through several roles. The potential influences of vitamin D on glucose homeostasis included the presence of specific vitamin D receptor (VDR) in pancreatic β -cells and skeletal muscle, the expression of 1- α -hydroxylase enzyme which can catalyze the conversion of 25-hydroxy vitamin D [25(OH)D] to 1,25-dihydroxyvitamin D and the presence of a vitamin D response element in the human insulin gene promoter⁶. It also increases insulin synthesis and secretion and regulation of steroidogenesis in the human ovarian tissue⁷.

Vitamin D deficiency is quite common in the general population. In fact, in several studies, vitamin D levels were found to be below 20 ng/ml in 10-60% of the adults⁸. Serum 25-hydroxy vitamin D (25-OH D) concentrations below 20 ng/ml were considered as vitamin D deficiency and serum 25-OH D concentrations of 20-30 ng/ml were considered as vitamin D insufficiency⁹.

Studies regarding Vitamin D status in patients with PCOS show an inverse correlation between Vitamin D levels and metabolic risk factors, e.g. insulin resistance, BMI, waist-to-hip-ratio, triglycerides, total testosterone and a positive correlation with insulin sensitivity¹⁰⁻¹¹. Data on the role of gene variants involved in Vitamin D metabolism in PCOS are sparse but suggest an association of VDR and Vitamin D level-related variants with metabolic and endocrine parameters in women with PCOS. Several studies although limited by modest sample sizes have suggested associations between VDR polymorphisms and the development of PCOS as well as insulin resistance¹²⁻¹³.

Stress is one of the important factors in the aetiology of PCOS; it is seen in patients of PCOS from the young age till old. There are three major sets of diagnostic criteria for the diagnosis of PCOS¹⁴. Vitamin D deficiency is a global health issue. Inadequate exposure to sun light is one of the main causes of this deficiency, since food dietary contains natural sources of vitamin D supplement¹⁵. In addition, older individuals with increased fat deposits are also prone to develop vitamin D deficiency. Hypovitaminosis D may be associated with a number of mental and physical disorders such as MBS, type 2 diabetes, PCOS and cancer.

OBJECTIVE

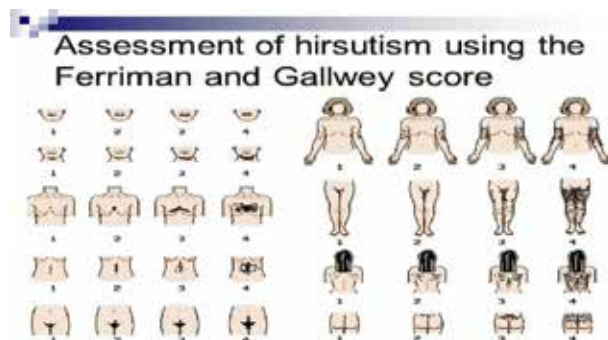
To see the vitamin D deficiency level and its effect in PCO patients among the reproductive age group.

MATERIAL AND METHODS

This prospective study was conducted on 350 patients of PCOS who are already diagnosed at department of obstetrics and gynecology at Z H Sikder Women's Medical College and Hospital, Bangladesh from 2017-2018.

Diagnosis of PCOS was made by Rotterdam 2003 criteria. A detailed clinical assessment was done and performed proforma was filled. Demographic data was collected. Presence or absence of any comorbidities like diabetes, hypertension and thyroid dysfunction in subjects was mentioned.

Hirsutism was quantified according to modified Ferriman-Gallwey-Score which was filled by subjects in the chart Figure 2 and total score was calculated and quantified as <8 non-hirsutisms, hirsutism >8-15 and overt hirsutism >15 [9]. Estimation of serum vitamin D3 by Chemiluminescence method in fully automated analyzer.



Serum vitamin D3 was estimated by standard lab technique 'Liquid Chromatography Tandem Mass Spectrometry' and categorized into vitamin D3 sufficient: >30ng/dl, insufficient: 20-29ng/dl and deficient: <20ng/dl group. Data analysis was done by SPSS.

Vitamin D3	Levels
Vitamin D3 sufficient	≥30 ng/ml
Vitamin D3 insufficient	20-29 ng/ml
Vitamin D3 deficiency	<20 ng/ml

Standard anthropometric data height, weight, BMI, waist circumference, hip circumference was measured. Waist-hip ratio (WHR) was calculated and classified according to WHO guided health risks into low, moderate and high risks as <0.80, 0.80-0.85 and >0.85 respectively.

Inclusion criteria: All newly suspected and diagnosed cases of PCOS.

Exclusion criteria:

- Any diagnosed case of PCOS who was on & had history of taking vitamin D & calcium supplement within period of one year.
- Diagnosed cases of PCOS who was under treatment and recovered with treatment (medical and surgical)
- Patients who were not willing to take part in the study.

RESULTS

Out of 350 PCOS patients, 40.85 % (143) of the patients belongs to age group between 16-20 years, 27.14 % (95) to 21-25 years and 13.71% (48) to 26-30 years. Age wise distribution of the participants is mentioned below Table 1.

Table 1: Age distribution of participants

Age	Number	Percentage
<15 years	22	6.2 %
16-20 years	143	40.85 %
21-25 years	95	27.14 %
26-30 years	48	13.71 %
31-35 years	27	7.7 %
>35 years	15	4.2 %

Among 350 patients 60% (210) cases were suffered from vitamin D3 deficiency, insufficiency was found in 31.43% (110) cases and only 8.5% (30) cases had sufficient vitamin D3 levels (Table 2).

Table- 2: Concentration of vitamin D3 level in participants

Vitamin D3	Number	Percentage
Deficiency (<29 ng/ml)	210	60 %
Insufficiency (20-29 ng/ml)	110	31.43 %
Sufficiency (≥30 ng/ml)	30	8.5 %

275 PCOS patients were presented with the complaint of infertility. Among them vitamin D3 deficiency was found in 152 (55.27%) cases and insufficiency was found in 68

(24.72%) cases. Among the cases 205 patients had complaint of weight gain and among this 205 patients deficiency was found in 107 (52.19%) cases and in 73 (35.60%) cases vitamin D3 was insufficient. Hirsutism was found in 150 cases and among these 150 cases deficiency was found in 80 (53.33 %) cases and insufficiency in 46 (30.66 %) cases. Oligomenorrhoea, menorrhagia and amenorrhoea were found in 140, 108 and 102 cases and among these cases vitamin D3 deficiency were found in 93 (66.42%), 76 (70.37%) and 62 (60.78%) cases, whereas insufficiency were detected in 30 (21.42%), 21 (19.44%) and 31 (30.40%) cases respectively. Acanthosis nigricans was detected in 97 cases where vitamin D3 was deficient in 49 (50.51%) cases and insufficient in 39 (40.97%) cases (Table -3)

Table-3: Vitamin D3 level of PCO patients according to their complaints:

Complaints	Sufficiency (≥30 ng/ml)	Insufficiency (20-29 ng/ml)	Deficiency (<20 ng/ml)	Total no of patient with complaint
Menorrhagia	11 (10.18 %)	21 (19.44 %)	76 (70.37 %)	108
Amenorrhoea	9 (8.82 %)	31 (30.40 %)	62 (60.78 %)	102
Oligomenorrhoea	17 (12.14 %)	30 (21.42 %)	93 (66.42 %)	140
Acanthosis nigricans	9 (9.27 %)	39 (40.97 %)	49 (50.51 %)	97
Weight gain	25 (12.19 %)	73 (35.60 %)	107 (52.19 %)	205
Infertility	55 (20 %)	68 (24.72 %)	152 (55.27 %)	275
Hirsutism	24 (16 %)	46 (30.66 %)	80 (53.33 %)	150

Based on Waist hip ratio (W/H ratio), among 350 cases 242 (69.14 %), 85 (24.29 %) and 23 (6.51 %) cases belongs to high risk, moderate risk and low risk group respectively. In high risk group vitamin D3 was found deficient in 139 (57.43 %) cases and in low risk group in 15 (65.21 %) cases vitamin D3 level was found sufficient (Table-4)

Table – 4: Distribution of Vitamin D3 level in PCOS patients Based on Waist hip ratio (W/H ratio)

Waist - Hip Ratio	Vitamin D3 Sufficient	Vitamin D3 Insufficient	Vitamin D3 Deficient	Total
Low risk (<0.8)	15 (65.21 %)	5 (21.73 %)	3 (13.04 %)	23 (6.51 %)
Moderate risk (0.8-0.85)	10 (11.77%)	19 (22.35%)	56 (65.88 %)	85 (24.29 %)
High risk (>0.85)	13 (5.37 %)	90 (37.19 %)	139 (57.43 %)	242 (69.14 %)

Among the cases BMI was >30 in 205 (58.57%) cases

Table – 5: Among the 350 cases 58.57% (205) were found obese and BMI was >30

BMI	Number	Percentage
Non obese (BMI <25)	145	41.42 %
Obese (BMI >30)	205	58.57%

Acanthosis nigricans was found in 97 cases and among them 65 (67.01 %) cases were suffering from vitamin D3 deficiency and 23 (23.71 %) were suffer from insufficiency.

Table – 6: Distribution of Vitamin D3 level in PCOS patients according to Presence of Acanthosis nigricans

Acanthosis nigricans	Vitamin D3 Sufficient	Vitamin D3 Insufficient	Vitamin D3 Deficient	Total
Neck	9 (9.27 %)	23 (23.71 %)	65 (67.01 %)	97

DISCUSSION

Discussion Vitamin D plays a physiologic role in reproduction including ovarian follicular development and luteinization via altering anti-müllerian hormone (AMH) signalling, follicle-stimulating hormone sensitivity and progesterone production in human granulosa cells¹. It also affects glucose homeostasis through manifold roles. The potential influences of vitamin D on glucose homeostasis include the presence of specific vitamin D receptor (VDR) in pancreatic β -cells and skeletal muscle, the expression of 1- α -hydroxylase enzyme which can catalyze the conversion of 25-hydroxy vitamin D [25(OH)D] to 1,25dihydroxyvitamin D and the presence of a vitamin D response element in the human insulin gene promoter¹.

Li HW et al, in an observational study 2011 including 25 women with PCOS and 27 controls to the prevalence of vitamin D deficiency in PCOS women in Scotland found the majority of PCOS subject's n=18, 72% were found to be vitamin D deficient¹⁶. In an observational study, involving 206 PCOS women were studied by Wher et al, wherein 72.8% (150 women) of PCOS population demonstrated vitamin D deficiency¹. In our study we have taken 350 PCOS cases and out of 350 PCOS patients, 40.85 % (143) of the patients belongs to age group between 16-20 years, 27.14 % (95) to 21-25 years and 13.71% (48) to 26-30 years. Among 350 patients 60% (210) cases were suffered from vitamin D3 deficiency, insufficiency was found in 31.43% (110) cases and only 8.5% (30) cases had sufficient vitamin D3 levels (Table 2).

Majority of cases in this study had complaint of infertility, weight gain, hirsutism and oligomenorrhea and vitamin D3 deficiency was noted in 152 (55.27 %), 107 (52.19 %), 80 (53.33 %) and 93 (66.42 %) respectively. In 80 (53.33 %) cases clinical features of hyperandrogenism include hirsutism was found in the women with PCOS. In our study, low levels of vitamin D3 associated with higher hirsutism score, that was found to be statistically significant. Wehr et al, also observed negative correlation between serum vitamin D3 levels with hirsutism score who statistically significant had lower levels of vitamin D than non-hirsute women¹.

Obesity is one of the most important features of PCOS, BMI

and WHR are well defined parameters to assess it. In this study, also both were found statistically significant inversely correlated with vitamin D3 levels, inferring association between central obesity and vitamin D3 level. Mahmoudi et al, also reported overweight and obese women with PCOS had significantly decreased levels of vitamin D3 compared with normal weight women with PCOS but that was not found statistically significant¹⁷.

CONCLUSION

PCOS and its complications are preventable. Improvement of vitamin D3 levels can prevent the menifestations of PCOS. Vitamin D3 deficiency has a strong association with PCOS and for that reason every patients of PCOS should be screened for vitamin D3 deficiency. Correction of Vitamin D3 deficiency may prevents the onset and complications of PCOS.

REFERNCE

1. Wehr E, Pilz S, Schweighofer N, Giuliani A, Kopera D, et al. Association of hypovitaminosis D with metabolic disturbances in polycystic ovary syndrome. *Eur J Endocrinol*, 2009; 161:575-582.
2. Li H, Brereton R, Anderson R et al. (2011): Vitamin D deficiency is common and associated with metabolic risk factors in patients with polycystic ovary syndrome. *Metabolism*,60:1475-1481.
3. Haoula Z, Salman M and Atiomo W (2012): Evaluating the association between endometrial cancer and polycystic ovary syndrome. *Hum. Reprod.*, 27:1327-1331.
4. Studzinski G, McLane J and Uskokovic M (1993): Signaling pathways for vitamin D-induced differentiation: implications for therapy of proliferative and neoplastic diseases. *Crit. Rev. Eukaryot. Gene Expr.*,3:279-312. 4)
5. Irani M and Merhi Z (2014): Role of vitamin D in ovarian physiology and its implication in reproduction: a systematic review. *Fertil. Steril.*, 102: 460-469.
6. Alvarez J and Ashraf A (2010): Role of vitamin D in insulin secretion and insulin sensitivity for glucose homeostasis. *Int. J. Endocrinol.*, 2010:351-385. 6)

7. Parikh G, Varadinova M, Suwandhi P et al. (2010): Vitamin D regulates steroidogenesis and insulin-like growth factor binding protein-1 (IGFBP-1) production in human ovarian cells. *Hormone and Metabolic Research*, 42: 754–757. 7)
8. Lips P (2010): Worldwide status of vitamin D nutrition. *J Steroid Biochem Mol Biol*, 121:297-300.
9. Holick M (2007): Medical progress: vitamin D deficiency. *New England Journal of Medicine*, 3: 266– 281.
10. Yildizhan R, Kurdoglu M, Adali E, Kolusari A, Yildizhan B et al. Serum 25-hydroxyvitamin D concentrations in obese and non-obese women with polycystic ovary syndrome. *Arch Gynecol Obstet*, 2009; 280:559-563.
11. Rotterdam ESHRE/ASRM-Sponsored PCOS Consensus Workshop Group. Revised 2003 consensus on diagnostic criteria and long-term health risks related to polycystic ovary syndrome. *Fertil Steril*. 2004; 81(1):19-25.
12. Apridonidze T, Essah PA, Iuorno JE Nestler. Prevalence and characteristics of the metabolic syndrome in women with polycystic ovary syndrome *J Clin Endocrinol Metabolism*. 2005; 90(4):1929-1935. 6.
13. Holick M. Vitamin D Deficiency. *New England J Medic*. 2007; 357(3):266-81.
14. Jorde R, Sneve M, Figenschau Y, Svartberg J, Waterloo K. Effects of vitamin D supplementation on symptoms of depression in overweight and obese subjects: randomized double blind trial. *J Internal Medicine*. 2008; 264(6):599-609.
15. Garg G, Kachhawa G, Ramot R, Khadgawat R, Tandon N, Sreenivas V. Effect of vitamin D supplementation on insulin kinetics and cardiovascular risk factors in polycystic ovarian syndrome: a pilot study *Endocrine Connections*. 2015; 4(2):108-116.
16. Hahn S, Haselhorst U, Tan S, Quadbeck B, Schmidt M, Roesler S. Low Serum 25-Hydroxyvitamin D Concentrations are Associated with Insulin Resistance and Obesity in Women with Polycystic Ovary Syndrome. *Experiment Clin Endocrinol Amp Diab*. 2006; 114(10):577-83.
17. Mahmoudi T, Gourabi H, Ashrafi M, Yazdi R, Ezabadi Z. Calcitropic hormones, insulin resistance, and the polycystic ovary syndrome. *Fertil Steril*. 2010; 93(4):1208-14.

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Outcome of primary arteriovenous fistula for hemodialysis: Our experience

Santosh Shah¹

ABSTRACT

Introduction: Arteriovenous fistula is accepted as optimal form of vascular access for hemodialysis in clinical practice. The aim of this study was to identify the factors which affecting the postoperative outcomes in primary arteriovenous fistula.

Material and Methods: Retrospective review of total 104 consecutive chronic kidney disease patients who underwent arterio-venous fistula creation for hemodialysis access from January 2016 to January 2017 was done. Patient demographics, preoperative factors and postoperative outcomes were analyzed.

Results: One hundred-four patients (62% male) with median age 55 (range 19-86) were studied. Seventy five patients (72.1%) had brachiocephalic fistula while 29 (27.9%) had radiocephalic fistula. We did not use graft in any patient. Overall complication rate and primary failure rate were 10.6% and 14.4% respectively. In univariate analysis, age more than 60 years, female, diabetic patient and radiocephalic fistula site had influence on primary failure of fistula ($P < 0.05$). However, female (OR;9.46, 95% CI [1.51-59.26], $P = 0.001$), diabetes (OR;10.37, 95% CI [1.98-54.37], $P = 0.006$) and radiocephalic fistula site (OR;6.95, 95% CI [1.42-33.99], $P = 0.017$) were the independent risk factors for primary failure of fistula in multivariate logistic regression analysis.

Conclusion: Primary failure is more likely in female, diabetes and radiocephalic fistula site. Surgeon should be vigilant while choosing patient, technique and follow-up practices for arteriovenous fistulas.

Keywords: arteriovenous fistula, radiocephalic, brachiocephalic

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INTRODUCTION

The arteriovenous fistula was first described as a optimal mode of hemodialysis vascular access in 1966 by Brescia and Cimino.¹ Patients with worsening renal function and end-stage renal disease need vascular access which is reliable, safe and related with marginal complications.² A proper effective and consistent vascular access is a basic prerequisite to give life saving treatments for patients on hemodialysis. Fistulas, grafts, and tunneled catheters are main three types of vascular access used by most dialysis patients.³ Autogenous arteriovenous access for hemodialysis has revealed more superiority than prosthetic graft or catheter access in relations of patient morbidity and mortality. The National Kidney Foundation Dialysis Outcomes Quality Initiative (NKF KDOQI) encouraged the use of autogenous access if possible in all situations.¹ Many studies have reported different factors that affecting outcomes of arteriovenous fistula. However no study has been stated from our part mainly from Nepal. We aimed to identify the

factors that affecting the postoperative outcomes in primary arteriovenous fistula in our settings.

MATERIAL AND METHODS

Patient with chronic kidney disease who underwent arteriovenous fistula creation for hemodialysis access from at the Department of CTVS, Universal College of Medical Sciences, Bhairahawa, Nepal from July 2015 to January 2017 were studied and followed for 1 year. Patient's demographics, preoperative, operative, post operative data and follow-up information were recorded. All patients underwent preoperative vascular evaluation during their initial clinical evaluation. Operations were performed on an outpatient basis unless the patient was hospitalized for other reasons.

Generally procedure was done using local anesthesia 2% lignocaine at the site of the planned fistula. In all patients a transverse curvilinear incision was given. Gentle mobilization of Cephalic vein was needed to the length reaching easily to

the arterial anastomotic site. Inflation of the tourniquet cuff to 60 mm Hg assisted identification and dissection of the vein once needed. Merely the anterior surface of the artery was exposed. No arterial branches were ligated. A 10-mm arteriotomy was performed in the forearm while 5 mm in the arm with surgical blade number 11 and Pott's scissors. The vein was sharply cut, venous patency checked by injecting heparinised saline. Venous dilatation done with heparinised saline with 5cc syringe and size of vein measured for anastomosis. An end-to-side anastomosis was performed with prolene 6/0 suture. In the forearm anastomosis was made between radial artery and cephalic vein while brachial artery and cephalic vein in the arm. Haemostasis was assessed and the wound was closed in two layers using 3/0 absorbable sutures for the subcutaneous layer and subcuticular stitch. Gentle Antiseptic dressing was done. No immediate postoperative studies, such as duplex ultrasonography or radiography, were performed routinely to assess patency.

The principal outcome measures were primary and assisted primary patency rates at 12-month follow-up, and rates of complications, primary failure rates and reinterventions. Maturation was defined as successful cannulation for at least 1 complete hemodialysis session. Time to use was defined as the interval between the creation of the AVF and its maturation. Assisted maturation rate indicated that an additional intervention was required to achieve maturity. Primary patency rate was defined as the time between the initial operation and failure or the need for reintervention. Assisted primary patency rate was defined as the total life span of the AVF after the initial operation, regardless of whether reintervention was required before or after initial maturation. Secondary patency rate refers to the life span of an AVF that had become completely occluded but was successfully reopened by means of thrombectomy. Complications were inability to access because of depth (a vein with deep subcutaneous or subfascial outflow), steal, thrombosis, stenosis, primary nonmaturation, and infection. Reinterventions included superficialization of a deep outflow tract, thrombectomy, ligation of side branches, balloon fistuloplasty, and incision and drainage. Patent fistulas that did not dilate sufficiently for hemodialysis use after 12 months were considered failures to mature.

All continuous variables were expressed as median or mean and standard deviation which compared with Independent t-test or Man-Whitney test as feasible. Chi-square test or Fisher's exact test was used for categorical values as appropriate. Logistic Regression analysis performed to check the association of variables with outcome variables. A p-value < 0.05 was considered statistically significant. Statistical software SPSS version 22.0 (Statistical Package for the Social Sciences) was used for statistical analysis.

RESULTS

A total of 104 patients with chronic kidney disease who underwent primary arteriovenous fistula formation for hemodialysis at the Department of CTVS, Universal College of Medical Sciences, Bhairahawa, Nepal during study period were studied and followed for 6 months. Most of our patients were male 62 (59.6%) and median age of patients was 55 (range 19-86). Patient's preoperative data are shown in Table 1. Diabetes was the commonest comorbid condition present in our patients. Majority of patients presented with CKD type IV and type V. Diabetic nephropathy was the most commonest cause associated with CKD. Radiocephalic fistula was made in 29 (27.9%), while brachiocephalic fistula was made in 75 (72.1%) patients (Table 2).

Table 1. Preoperative data

Variable	Number (n=78)
Age, (years)	55 (19-86)
Sex	
Male	62 (59.6)
female	42 (40.0)
Smoking	
Yes	13 (12.5)
No	91 (87.5)
Comorbidity, %	53 (51.0)
Cardiovascular disease	3(2.9)
Diabetes mellitus	26(25.0)
Peripheral vascular diseases	1 (1.0)
Hypertension	14(14.4)
Neurological problems	1(1.0)
Other	7(6.7)

Categorical variables are presented as n (%); Continuous variables are presented as median (interquartile range)

Overall primary AVF failure rate observed in 15 patients (14.4%). Eleven patients (10.6%) developed some form of complications. Thrombosis was most common complication seen in 3.8 % of patients as shown in Table 2.

Table 2. Intraoperative and postoperative Data

Variable	Number (n=78)
Site	
BC	75(72.1)
RC	29(27.9)
Outcome	
Failure	15(14.4)
Patent	89(85.6)
Complications, %	11(10.6)
Thrombosis	4(3.88)
Seroma	2 (1.9)
Hematoma	2 (1.9)
Neuropathy	1 (1.0)
Infection	2(1.9)

We also analyzed the different factor affecting postoperative outcome of AVF. In univariate analysis , age more than 60 years , female, diabetes and radiocephalic fistula site had influence on primary failure of fistula ($P < 0.05$). However , female (OR;9.46 ,95% CI [1.51-59.26], $P = 0.001$), diabetes (OR;10.37 ,95% CI [1.98-54.37], $P = 0.006$) and radiocephalic fistula site (OR;6.95 ,95% CI [1.42-33.99], $P = 0.017$) were the independent risk factors for primary failure of fistula in multivariate logistic regression analysis as shown in Table 3.

Table 3. Association of variables with failure of AVF

Variable	Failure (n=15)	Univariate analysis (OR;95%CI; P value)	Multivariate analysis (OR;95%CI; P value)
Age (>60 years)	9 (60.0)	(1.66;[1.05- 2.74]; 0.093)	(0.65;[0.12-3.46]; 0.650)
Sex (Female)	13 (86.7)	(2.66;(1.85-3.80); 0.001)	(9.46;[1.51-59.26]; 0.001)
Diabetes	11(73.3)	(4.35;[2.50-7.56]; 0.001)	(10.37;[1.98-54.37]; 0.006)
Site (RC)	12(80.0)	(4.18;[2.54-6.88]; 0.001)	(6.95;[1.42-33.99]; 0.017)

Categorical variables are presented as n (%); Continuous variables are presented as median (interquartile range), OR; odds ratio, CI; 95% confidence interval,* P; value < 0.05, RC; radiocephalic fistula

DISCUSSION

Evidence suggests that risk factors such as advanced age, peripheral vascular disease, coronary artery disease, diabetes mellitus, and immune conditions may lead to delayed AVF maturation.⁴⁻⁵

Bashar at al., 2015 reported 52 functionally matured fistula from a total of 97 fistulae (53.60%). In their study, the mean age of the patients was 60.9 ± 16.9 years, but the age was not significantly associated with the functionality of AVF. In our study, age is not significant($p=0.065$) whereas diabetes($p=0.006$) is significant for failure.

The female gender ($p = 0.004$), previous history of a kidney transplant ($p = 0.036$), patient on a calcium channel blocker at the time of AVF formation ($p = 0.01$) and lower haemoglobin levels were significantly associated with the functionality of AVF.6 Also, Jemcov 2013 in her study reported that female gender was associated with prolonged AVF maturation (OR 0.35, 95% CI = 0.17-0.72; $p = 0.005$) and a significantly smaller size of a. radial (1.83 vs. 2.01 mm, $p = 0.01$) compared to the male gender .7Wasse at al., 2010 reported that females were 36% less likely than males to use an AVF at dialysis initiation .8In our study, primary failure rate in female is significant($p=0.001$). The study by Miller et al., 2003 reported that fistula was more likely to be placed in the upper arm rather than in the forearm in women than in men (64% vs 36%) .9

Navuluri and Regalado described that primary failures were more with RC fistulas when compared with brachiocephalic fistulas.10 In our study, 15 fistulas failed among whom, 12 were RC failures (80%), likewise Ascher et al and Wolowczyk et al, who reported a primary failure rate of 18 and 20%, respectively.11 The probable reasons were vessels of smaller caliber and damage to the vessel wall due to frequent venipunctures. Bahadi et al in their study reported an incidence of early failure of AVFs of 23.9%, which is similar to other published series (23%–53%).12 In our series, the early failure rate was 14.4%.

CONCLUSION

Primary failure is more likely in female ,diabetes and radiocephalic fistula site . Surgeon should be vigilant while choosing patient , technique and follow-up practices for arteriovenous fistulas. Age of patient should not be a limiting factor when determining candidacy for arteriovenous fistula creation and is the safe procedure.

REFERENCES

1. National Kidney Foundation. NKF-DOQI clinical practice guidelines for vascular access, guideline 29: goals of access placement—maximizing primary AV fistulae. *Am J Kidney Dis.* 1997;30(suppl 3):S179-S180.

2. Pisoni RL, Young EW, Dykstra DM, et al. Vascular access use in Europe and the United States: results from the DOPPS. *Kidney Int.* 2002;61:305-316.
3. Allon M, Robbin ML. Increasing arteriovenous fistulas in hemodialysis patients: problems and solutions. *Kidney Int.* 2002;62:1109-1124.
4. Lok CE, Allon M, Moist L, Oliver MJ, Shah H, Zimmerman D. Risk equation determining unsuccessful cannulation events and failure to maturation in arteriovenous fistulas (REDUCE FTM I) *Journal of the American Society of Nephrology.* 2006;17:3204-3212.
5. Duque JC, Martinez L, Mesa A, et al. CD4(+) lymphocytes improve venous blood flow in experimental arteriovenous fistulae. *Surgery.* 2015;158:529-536.
6. Bashar K, Zafar A, Elsheikh S, Healy DA, Clarke-Moloney M, Casserly L, Burke PE, Kavanagh EG, Walsh SR. Predictive Parameters of Arteriovenous Fistula Functional Maturation in a Population of Patients with End-Stage Renal Disease. *PLoS one.* 2015;10(3):e0119958. <https://doi.org/10.1371/journal.pone.0119958> PMID: 25768440 PMCID: PMC4358953.
7. Jemcov TK. Morphological and functional vessels characteristic by assessed by ultrasonography for prediction of arteriovenous fistula maturation. *J Vasc Access.* 2013;14(4):356-63. <https://doi.org/10.5301/jva.5000163> PMID: 23817950.
8. Wasse H, Hopson DS, McClellan W. Racial and Gender Differences in Arteriovenous Fistula Use among Incident Hemodialysis Patients. *Am J Nephrol.* 2010;32(3):234-241. <https://doi.org/10.1159/000318152> PMID: 20664254 PMCID: PMC2980520.
9. Miller CD, Robbin ML, Allon M. Gender differences in outcomes of arteriovenous fistulas in hemodialysis patients. *Kidney international.* 2003;63(1):346-52. <https://doi.org/10.1046/j.1523-1755.2003.00740.x> PMID: 12472802.
10. Navuluri R, Regalado S. The KDOQI 2006 vascular access update and fistula first program synopsis. *Semin Intervent Radiol* 2009;26:122-4.
11. Ascher E, Gade P, Hingorani A, et al. Changes in the practice of angioaccess surgery: Impact of dialysis outcome and quality initiative recommendations. *J Vasc Surg* 2000;31:84-92.
12. Bahadi A, Hamzi MA, Farouki MR, et al. Predictors of early vascular-access failure in patients on hemodialysis. *Saudi J Kidney Dis Transpl* 2012;23:83-7.

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Cervical Thymic Duct Cyst, a rare Cystic Lateral Neck Mass in Children

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ABSTRACT

Introduction: Thymic duct cyst is a very rare differential diagnosis of pediatric lateral cystic neck swellings and often misdiagnosed as either branchial cleft cyst or cystic hygromas.

Case series: We are presenting three cases of thymic duct cysts in under 20 years of age. Pre-operatively these cases were not diagnosed as thymic cyst but histopathological reports confirmed the diagnosis.

Conclusion: Due to its rarity, it almost always escapes a correct preoperative diagnosis. Moreover, it is related to some important structures in neck. So, surgeons should aware of this condition in lateral cystic neck mass in children particularly in the first two decades of life. Greater awareness among the pathologists may decrease the misdiagnosis.

Key words: Thymus, Thymic duct cyst, Thymic cyst, Lateral cystic mass in children, Branchial apparatus, Branchial cyst, Cystic hygroma.

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INTRODUCTION

Thymic cysts are uncommon, accounting for only 2% of congenital neck masses,¹ usually presenting in the 1st decade of life.²

Thymic cysts are almost all unilateral, mostly on the left side of the neck. They are cystic in 90% cases. Typically, a thymic cyst presents as an asymptomatic mass, but it may be painful if infected, or rapidly increase in size.³

Thymus-its Anatomical and Embryological Considerations and anomalies

History

“Thymus” derives from the Greek word thymos which means soul or spirit. Galen first thought that it has a role for purification of the nervous system in 2nd century AD. Vesalius suggested that it acted as a damper to protect the major vessels in the mediastinum located behind the sternum in 15th century. In 1777, William Hewson was first to identify correctly the thymus as a lymph modifying gland and in 1832 Sir Astley Cooper described detailed anatomy of the thymus. In 1846, Hassall and Vanarsdale used compound microscope to describe the differences between the thymus and other lymphoid organs, specifically the histological characteristic known as Hassall’s corpuscles.⁴

Anatomy

The thymus is an encapsulated soft, bilobed organ. The two lobes are joined in the midline by connective tissue that merges

with the capsule of each lobe. The greater part of the thymus lies in the superior and anterior mediastina; the inferior aspect of the thymus reaches the level of the fourth costal cartilages. Its superior poles join at, and extend above, the level of the suprasternal notch; the left usually extends higher and is seen first behind the strap muscles. It sometimes reaches the inferior poles of the thyroid gland or even higher, and is connected to the thyroid gland by the thyrothymic ligament.⁵

Development

The thymus is primarily derived from the third branchial pouch, with minor contributions from the fourth branchial pouch. Beginning in the sixth week of gestation, the thymus descends into the anterior mediastinum along paired thymopharyngeal ducts, deep to the thyroid gland and sternocleidomastoid muscle.¹ Both the third and fourth branchial pouch originate at the pyriform sinus. Development may arise from the incomplete closure of the thymopharyngeal duct of the third pouch.⁶

Anatomic pathways for deep tract of the third and fourth branchial cleft anomalies -

In the third branchial cleft anomalies, the deep tract passes posterior to the internal and external carotid arteries, between the 9th and 12th cranial nerves and ends in the apex of the pyriform sinus.

In the fourth branchial cleft anomalies, the deep tract begins with a sinus at the apex of the pyriform sinus and travels inferiorly in

the tracheoesophageal groove, posterior to the thyroid gland, and into the thorax. Next, it loops below the aorta on the left or below the subclavian artery on the right and then ascends posterior to the common carotid artery to loop over the hypoglossal nerve and ends at the anterior border of the sternocleidomastoid muscle.⁷

We are reporting three cases in our case series, two female and one male.

Case Series

Case no. 1

A 14 yrs. old girl was our second case and was admitted in National Institute of ENT, Tejgaon, Dhaka on 13th January, 2016 with the complain of a swelling in left side of neck since early childhood which was gradually increasing. There was an oval shaped swelling in the left side of neck occupying in lower half of anterior triangle. The overlying skin was normal and no visible pulsation was seen. It did not move with swallowing. The consistency was soft and the margins were not well delineated. It was non tender. Transillumination test was negative. Ultrasonogram revealed a multiseptate cystic mass on the left side of neck. Cytological examination suggested branchial cyst.

A dark blue or blackish coloured cyst was found within the carotid sheath starting from the level of hyoid bone during surgery. It extended lower down and was turned into a cord like structure before entering into the superior mediastinum. After opening the carotid sheath it was found between the internal jugular vein and carotid vessels, the left Vagus nerve was found closely related to the cyst. After removal of the mass it was sent for histopathological examination. It was found a single cystic mass with tubular elongation on gross examination which was multilocular on cut. They found thymic tissue with cholesterol granuloma in cyst and ectopic thymic tissue in cord in microscopic examination. Their diagnosis was thymic cyst.

Case no.2

A 7 yrs. old girl was admitted in National Institute of ENT, Tejgaon, Dhaka on 28th February, 2016 with the complain of a swelling in the upper portion of the left side of neck since birth. It was painless and gradually increasing in size. The swelling was occupying in the upper half of anterior triangle of neck on left side. Nothing abnormality was detected in overlying skin. It was non tender, soft in consistency and the margins were not well delineated. Transillumination test was negative. Cystic mass was found on ultrasonography. Cytological examination suggested cystic hygroma.

Our approach was with collar incision in neck at the lower end of mass. We found a dark blue colour cystic mass within the carotid fork extended into the carotid sheath. Within the carotid sheath a cord like structure descended from its lower end into

the superior mediastinum. Vagus nerve was found in close relation to the mass. After excision it was sent for histopathological examination. It was found a single cystic mass with tubular elongation on gross examination. On cut the cyst was found multilocular with straw colour fluid. Microscopic examination revealed thymic tissue with cholesterol granuloma in cyst and ectopic thymic tissue in tubular elongated part. Histopathological diagnosis was thymic cyst with ectopic thymic tissue.

Case no.3

Our third case was a 7 years old boy (Figure 1). He was admitted in National Institute of ENT, Tejgaon, Dhaka on 7th July, 2019 with complain of a swelling in right side of neck for 01 year which was gradually increasing in size. There was no complain of pain, respiratory distress nor any change of voice. There was an oval shaped swelling in the mid and some lower part of anterior triangle of neck on right side, overlying skin was normal, did not move with swallowing, no visible pulsation was seen. On palpation it was cystic in consistency, non-tender, margins



Figure 1: 07 years old boy



Figure 2: MRI Axial view



Figure 3: MRI Axial view.

were not well delineated. It was not decreased in size on compression. On coughing, it was neither increased in size nor felt any pulsation. Transillumination test was negative. Ear nose throat examination reveals no abnormality. Ultrasonogram of neck mass revealed a multiseptate cystic mass on the right side of neck. Cytological examination revealed cystic mass suggested Branchial cyst. MRI of neck and base of skull (Figure 2, Figure 3 & Figure 4) showed T1WI low and T1WI high signal intensity well defined cystic structure measuring about 7 x5 cm. is noted arising from right supraglottic region through thyrohyoid membrane into the Parapharyngeal and Paratracheal spaces. Laryngeal lumen is compressed. After IV Contrast (Gd- DTPA) administration, there was no enhancement of lesion was noted. In comment they noted it might be a Laryngocoele but Branchial Cleft cyst and Cystic Lymphangioma may be the other differential diagnosis. Fibreoptic laryngoscopic examination revealed no abnormality in larynx or hypopharynx.



Figure 4: MRI Coronal view. Figure 5: Mass per operatively Figure 6: Duct descending from lower end.

During operation, a yellowish white coloured cystic mass was found within the carotid sheath pushing internal jugular vein superficial and carotid vessels anteromedial in deep. The right Vagus nerve was found superficially and in close contact to the wall of mass (Figure 5). The cystic mass was mobilized and a cord like structure was found descending from its lower end (Figure 6). The mass was then removed intact with some part of cord. The surgical specimen was sent for histopathological examination. Direct laryngoscopic examination revealed no abnormality in larynx or hypopharynx particularly in right pyriform fossa.

Post-operative period was uneventful. The histopathological examination found one cyst measuring 7X5X2.5 cm. on gross

examination. On cut they found a multilocular cyst within which straw coloured fluid. In their microscopic examination they found thymic tissue with cyst lined by squamous epithelium and supported by fibrous tissue. Their diagnosis was thymic cyst.

RESULT

We found three cases of Thymic duct cyst, a rare variety of congenital neck mass in last four years. All the three cases were presented as lateral cystic mass, clinically diagnosed as congenital cystic neck mass. These were presented in the first two decades of life. In our case series, we found two female & one male, two of them were presenting in first decade and the other one was in the second decade of life. Swelling were unilateral and painless. Two of them were presented on left side & one on right side of neck. They all were soft in consistency and transillumination tests were negative. In our observation, we found two cysts of dark blue and one with yellowish white in colour. In all cases, the cysts were single and multiloculated. The cyst were found within the carotid sheath in all those three cases. A cord like structure descended into the superior mediastinum from the lower end of the cyst in two cases. In histopathological report of surgical specimens of all those three cases showed ectopic thymic tissue with thymic cyst.

Table showing three cases of Thymic duct cysts:

Sl. No.	Age/Sex	Admission Year	Side	Consistency	Transillumination Test	Ultrasonogram	Cytological Report	Clinical Diagnosis
1	14/F	January/2016	Left	Soft	Negative	A multiseptate cystic mass on the left side of neck.	Cystic mass suggested branchial cyst.	Branchial cyst.
2	7/F	February/2016	Left	Soft	Negative	Cystic mass on the left side of neck.	Cystic mass suggested cystic hygroma	Cystic hygroma.
3	7/M	July/2019	Right	Soft	Negative	Multiseptate cystic mass on the right side of neck.	Cystic mass suggested branchial cyst.	Branchial cyst.

DISCUSSION

Developmental anomalies are fairly common in the pediatric population. Failure of involution embryologic structures and duplication of structures can lead to fistulas, sinuses, and cysts. These include first, second, third, and fourth branchial cleft anomalies, as well as preauricular cysts and sinuses and thyroglossal duct cysts. Thyroglossal duct cysts are the most common congenital neck anomaly in children. For the branchial cleft anomalies, the second branchial cleft anomalies is the most common.⁷

Separated thymic tissue is often found scattered around the gland, and ectopic thymic rests are sometimes discovered in unusual mediastinal locations. Small accessory nodules may occur in the neck, representing separated portions, detached during embryological descent, and sometimes reaching more superiorly than the thyroid cartilage. Ectopic intrathyroidal thymi have been reported in children.⁵ Thymic rests may be deposited anywhere along the path from the angle of the mandible to the midline of the neck, between the common carotid artery and the vagus nerve.¹

Two varieties of thymic cysts are described, congenital and acquired. Persistence of thymopharyngeal tracts and the degeneration of Hassall's corpuscles within ectopic thymic remnants are the two most important etiologies of thymic cysts.⁸

Hsieh et al. conducted a study in 20 years on 331 patients under the age of 18 years presenting with cystic neck masses. They found thyroglossal cysts were the commonest in 181 (54.68%) patients, followed by cystic hygromas (83 patients, 25.08%), branchial cleft cysts (54 patients, 16.31%), and bronchogenic cysts (3 patients, 0.91%), and in remained 9 cases (2.72%) were unclassified. Only one case was diagnosed as thymic cyst (0.30%). They concluded that the cervical thymic cysts were rare.⁹

Ectopic thymic masses are congenital lesions of either solid or cystic in nature and usually present between 2 and 13 years of age as asymptomatic nodules or neck swellings on routine examination. Most cervical thymic lesions are unilateral and commonly on the left side of neck and in male patients.^{10,11} Thymic cysts are more common in children, in contrast to ectopic cervical thymus, which is more common in adults.¹²

Thoracoscopy is an important tool both for diagnostic and therapeutic purposes in mediastinal thymic diseases or thymic cyst. Akihiko Kitami et al in their study on 34 patients (15 males and 19 females, aged between 20 to 78 years with a mean of 49.0 years) with mediastinal diseases underwent diagnostic or therapeutic thoracoscopy, where 9 cases were found thymic diseases including 5 cases with thymic cyst, all were located in anterior mediastinum.¹³

Contrast enhanced computed tomogram (CT) scans can

differentiate thymic cysts from other pediatric neck swellings, such as branchial cleft cysts and lymphangiomas; the second branchial cysts are located superficial and lateral to internal jugular vein and common carotid artery, and lymphangiomas are found in the posterior triangle of the neck while thymic cysts are situated in close association with the carotid sheath, between internal jugular vein and carotid vessels.^{14,15} Also, thymic cysts tend to be longer, extending toward the anterosuperior mediastinum¹⁵. Mediastinal extension is seen in 50% of cervical thymic cysts.¹⁶

Thymic cysts are unilocular or multilocular containing brownish fluid. The cyst wall lining ranges from flattened squamous or cuboidal cells to multilayered stratified squamous epithelium to even primitive respiratory epithelium. Lobulated lymphoid tissue in the cyst wall contains Hassall's corpuscles.¹⁷ Increasing number of cervical thymic cysts reported in the last few years probably reflects greater awareness of this condition among pathologists. It is also possible that in the past, many cases of thymic cyst had been missed and diagnosed as branchial cleft cyst because of inadequate sampling of the specimen. The frequent atrophic condition of the thymic remnants may require sampling from various portions of specimen before a diagnosis of thymic cyst could be rendered.¹⁸

The preferred management is surgical excision, and diagnosis is confirmed by histologic identification of Hassall corpuscles³. Presence of mediastinal thymic tissue should be confirmed prior to surgery to avoid inadvertent removal of the only thymic tissue in a young child, which has the potential to result in serious immune dysfunction.¹

Thymectomy during childhood has been documented to produce impairment of immune status in later life.¹⁹ Hence, it is imperative that the existence of mediastinal thymus is confirmed before proceeding with the excision of the cervical thymic tissue. Cervical thymic cysts are not known to recur or undergo malignant transformation.¹⁴

CONCLUSION

Thymic cysts are rare causes of lateral cystic cervical masses. Due to its rarity, it almost always escapes a correct preoperative diagnosis. CT, MRI, and FNA are all helpful investigations in the diagnosis of cervical thymic cysts, but a definitive diagnosis requires identification of thymic tissue containing Hassall's corpuscles. Moreover, it is related to some important structures in neck. So, surgeons should aware of this condition in lateral cystic neck mass in children particularly in the first two decades of life. Greater awareness among the pathologists may decrease the misdiagnosis.

REFERENCES

1. Sataloff's Comprehensive Text Book of Otolaryngology Head and Neck Surgery, Paediatric Otolaryngology - Vol 6. Page no. 661.
2. P. J. Bruy`ere, P. Moreau, and B. Ghaye, "Congenital thymic cyst," JBR-BTR, vol. 90, no. 3, pp. 178–179, 2007.
3. Cummings Otolaryngology and Head Neck Surgery 6th Ed. Page 3060
4. Congenital Anomalies of Thymic Origin in the Neck. Álvaro Antonio Herrera Hernández, Paola Aranda Valderrama, and Julio Alexander Díaz Pérez. Acta Otorrinolaringológica Española · June 2008.
5. Grays Anatomy-The Anatomical Basis of Clinical Practice -41E (2015), Pp 983-986.
6. Scott-Brown's Otorhinolaryngology Head and Neck Surgery. Volume 2. Paediatrics, The Ear, Skull Base. 8th Edition 2018, page 470.
7. Baileys Head Neck Surgery Otolaryngology. 5th Ed. Vol. 1. Page no. 1589, 1609.
8. D. Saggese, G. C. Compadretti and C. Cartaroni, "Cervical ectopic thymus: a case report and review of the literature," International Journal of Pediatric Otorhinolaryngology, vol.66, no. 1, pp. 77–80, 2002.
9. Hsieh YY, Hsueh S, Hsueh C, Lin JN, Luo CC, Lai JY, et al. Pathological analysis of congenital cervical cysts in children: 20 Years of Experience at Chang Gung Memorial Hospital. Chang Gung Med J 2003;26:107-13.
10. Guba AM, Adam AE, Jaques DA, Chambers RG. Cervical presentation of thymic cysts. Am J Surg.1978;136:430–436.
11. Miller MB, DeVito MA. Cervical thymic cyst. Otolaryngol Head Neck Surg. 1995;112:585–588.
12. Madhira Srivalli, Hamid Abdul Qaiyum, Prayaga N. Srinivas Moorthy, and Kolloju Srikanth. A Case Report of Cervical Thymic Cyst and Review of Literature. Indian J Otolaryngol Head Neck Surg. 2011 January; 63(1): 93–95.
13. Akihiko Kitami, Takashi Suzuki, Ryosuke Usuda, Mikio Masuda and Shuichi Suzuki. Diagnostic and Therapeutic Thoracoscopy for Mediastinal Disease. Ann Thorac Cardio-vasc Surg Vol. 10, No. 1 (2004).
14. Kaufman MR, Smith S, Rothschild MA, Som P. Thymopharyngeal duct cyst. Arch Otolaryngol Head Neck Surg 2001;127:1357-60.
15. Daga BV, Chaudhary VA, Dhamangaokar VB. Case Report: CT diagnosis of thymic remnant cyst / thymopharyngeal duct cyst. Indian J Radiol Imaging 2009;19:293-5.
16. Cervical Thymic Cyst: A Rare Differential Diagnosis Lateral Neck Swelling. Vijendra Shenoy, M. Panduranga Kamath, Mahesh Chandra Hegde, Raghavendra Rao Aroor, I and Vijetha V. Maller. Hindawi Publishing Corporation Case Reports in Otolaryngology, Volume 2013, Article ID 350502, 4 pages.
17. K. K. Koeller, L. Alamo, C. F. Adair, and J. G. Smirniotopoulos, "From the archives of the AFIP. Congenital cystic masses of the neck: radiologic-pathologic correlation," Radiographics, vol.19, no. 1, pp. 121–146, 1999.
18. K.K.Prasad, R.K.Gupta, M.Jain, D.K.Kar, and G.Agarwal, "Cervical thymic cyst: report of a case and review of the literature," Indian Journal of Pathology and Microbiology, vol.44, no. 4, pp. 483–485, 2001.
19. Brearley S, Gentle TA, Baynham MI, Roberts KD, Abrams LD, Thompson RA. Immunodeficiency following neonatal thymectomy in man. ClinExpImmunol 1987;70:322-7.

Dyslipidemia occurs due to disturbance in the range of Total Cholesterol, LDL-C, LDL, TGs and HDL-C thereby increasing the morbidity and mortality all over the world.

LDL-C = Low Density Lipoprotein-Cholesterol
TGs = Triglycerides
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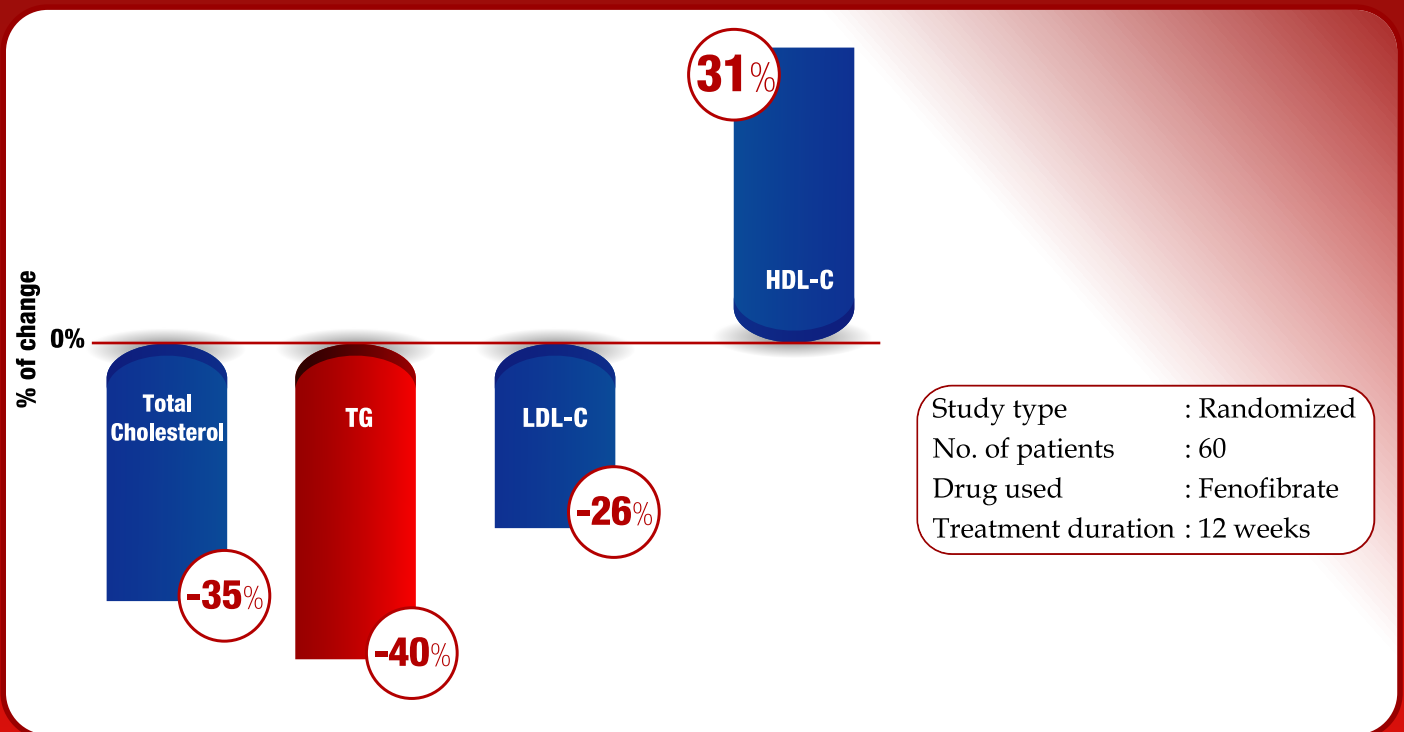


Fig.: Effects of Fenofibrate on lipid parameters

Dosage

Fenocap: 200 mg capsule once daily

Ref.: Journal of Drug Delivery & Therapeutics; 2013, 3(4), 108-113

Obstetric Near Miss : A new Indicator of Quality of Obstetric Care

Dr. Priyata Dutta.¹

INTRODUCTION

Maternal near miss (MNM) is defined as “a woman who presented with life threatening complication during pregnancy, childbirth and within 42 days after delivery, but survives by chance or good institutional care”¹. The prevalence of near miss cases estimated to be 5.6 to 7.5/1000 hospital-based deliveries and overall maternal mortality ratio is 9:1¹⁹. Women who endure severe morbidities in the course of pregnancy, childbirth and the postpartum period can help us to better understand the set of circumstances and avoidable factors that contribute to maternal deaths²⁰. Near miss cases and maternal deaths are together referred to as severe maternal outcome (SMOs)¹⁵.

Despite therapeutic advances and a growing perception of the safety of childbirth during this century, morbidity and mortality continuity occur in obstetrics patients³. Maternal deaths are considered “the tip of the iceberg” of maternal severe morbidity. It is estimated that for every woman who dies 20 or more survive severe maternal complications during pregnancy, delivery and the puerperium that leads to different degrees of sequel⁴. Yet relatively little attention has been paid to identify a general category of morbidities that could be called near-misses⁵.

A near miss describes a patient with acute organ system dysfunction which if not treated appropriately could result in death². As near miss cases occur in larger numbers than maternal deaths hence they allow for a more comprehensive analysis of risk factors, determinant as well as outcomes of life-threatening complications on pregnancy. Lessons to be learned from management of these cases who survived and may be as useful as from those who died.

The WHO criteria for ‘near misses’

The WHO working group suggests that the organ dysfunction-based approach is ‘the most promising frame for establishing a standard set of criteria’³. The WHO criteria for ‘near misses’ based on organ system dysfunction are the following²¹.

Cardiovascular

Shock, cardiac arrest (absence of pulse/heart beat and loss of consciousness), severe hypo-perfusion (lactate >5 mmol/l

or >45mg/dl), severe acidosis ($P^h < 7.1$), use of continuous vaso-active drugs, cardiopulmonary resuscitation.

Respiratory

Acute cyanosis, gasping, severe tachypnoea (respiratory rate >40 breaths per minute), severe Bradypnoea (respiratory rate <6 breaths per minute), severe hypoxemia (O_2 saturation <90% for ≥ 60 minutes or $PAO_2 / FiO_2 < 200$), intubation and ventilation nor related to anaesthesia.

Renal

Oliguria non-responsive to fluids or diuretics, severe acute azotemia (creatinine $\geq 300 \mu\text{mol/ml}$ or $\geq 3.5\text{mg/dl}$), dialysis for acute renal failure/referred for dialysis.

Haematologic/coagulation

Failure to form clots, severe acute thrombocytopenia (<50,000 platelets/ml), massive transfusion of blood or red cells (≥ 2 units).

Hepatic

Jaundice in the presence of pre-eclampsia, severe acute hyperbilirubinaemia (bilirubin >100 $\mu\text{mol/l}$ or >6.0mg/dl)

Neurologic

Prolonged unconsciousness (lasting 12 hours)/coma (including metabolic coma), stroke, uncontrollable fits/status epileptics, total paralysis.

Alternative severe proxy

Hemorrhage or infection leading to hysterectomy/repair, uterine infection leading to uterine debridement and repair.

Assessment of Quality of obstetric care

Quality of obstetric care can be assessed using either outcome indicators like maternal mortality ratio or MNM indicators or using process indicators such as the use of prophylactic antibiotics for the reduction of puerperal sepsis after caesarean section^{1,22}. The MNM indicators comprise maternal near miss (MNM) incidence ratio, maternal near miss: mortality ratio (MNM: MR) and mortality index (MI). High MNM: MR and low mortality indices indicate better quality of health care provided²³. Maternal mortality is among the worst performing

health indicators in developing countries³. While using near miss indicators have several advantages in that it offers a large number of cases that allows a more rapid and precise assessment of quality of care, has greater acceptability by involved health workers and institutions since death has not occurred and it also offers an opportunity for interviewing the women themselves²⁴.

Causes of near miss are similar to those of maternal deaths prevailing in a specific geographical area. Hemorrhage is the leading cause of maternal death in Africa (33.9%) and in Asia (30.8%). On the contrary, pregnancy-associated hypertensive disorders are the principal causes in Latin America and the Caribbean islands (25%). 12.8% maternal deaths may occur due to anaemia in Asia whereas 3.7% mothers suffer from anaemia before embracing mortality¹. In a WHO survey of maternal and prenatal health in Latin America, for eight countries the mean proportional ratio of near misses was 34 per 1,000 deliveries. Age >25 years, being single, primipara/parity above three and delivery at public institutions were associated with occurrence of a near-miss²⁵.

Usually the health of mother and their newborn babies are inseparable. Perinatal outcomes refer to life events that occur to a newborn between the age of viability (after 28 weeks of gestation) and the first week of life. Studies have reported that maternal complications have higher risk of adverse perinatal outcomes like still birth, perinatal asphyxia and neonatal deaths²⁶. So, maternal near miss may complicate the perinatal outcomes also.

Since maternal morbidity precedes maternal death, the systematic identification and the study of near-miss cases helps in further understanding of the determinants of maternal mortality^{27,28}. A more comprehensive and statistically reliable quantitative analysis that is of value to clinical audit can be reliably conducted^{14,15,29}. Data on severe morbidity are vital for policy-makers to recognize essential obstetric care. Near-miss findings are also better indicators than maternal mortality alone for planning monitoring, follow-up and evaluating safe motherhood programs^{15,21,30}. The burden of severe maternal morbidity is still unknown in Bangladesh.

The underlying assumptions of WHO MNM concept are that all maternal deaths involve at least one life-threatening condition or organ dysfunction. A substantial proportion of women with one or more of these life-threatening conditions are those who have severe pregnancy-related complications or receive critical interventions like blood transfusion and ICU admission¹.

A near-miss case is a woman with at least one near-miss event. Near miss case definition was based on validated specific criteria comprising of five diagnostic features namely haemorrhage, hypertensive disorders of pregnancy, dystocia, sepsis and anaemia¹. The WHO sums up the identification of near-miss cases in three main classes of criteria: clinical criteria, intervention based or the process of management of near-misses and organ or system dysfunction criteria, such as cardiovascular or respiratory failure^{1,3}.

How can be reduced ?

Every woman can experience sudden untoward and unexpected complications during pregnancy, childbirth and immediately after delivery. Complications in pregnancy, during childbirth and in puerperium were classified by increasing severity into potentially life-threatening conditions and near-misses that progressed to maternal death. Maternal morbidity represents part of a continuum from extremes of maternal good health to maternal mortality¹. From these conditions the women may recover, may be temporarily or permanently disabled, may even die. Worldwide, more than half a million women aged 15-49 years die every year from pregnancy and childbirth-associated complications, while developing countries suffer more in spite of global attention and efforts².

The near miss approach has been suggested to evaluate and improve the quality of care provided by existing health care delivery system. Reviewing near miss cases it can be learnt about the processes and their deficiencies that are in place for the cases of pregnant women. This would result in identifying the pattern of severe maternal morbidity and mortality, strengths and weaknesses in the referral system and clinical interventions available and the ways in which improvements can be made¹.

Certain maternal near miss indicators have been suggested to evaluate the quality of care, namely the near miss ratio and maternal near miss mortality ratio⁶. These indicators can help to assess the prevailing conditions of maternal health care delivery system.

Maternal mortality remains a major public health problem throughout the world and largely affects low-income countries. The primary indicator of maternal health care and hence quality of obstetric care is Maternal Mortality Ratio (MMR)⁷. More women survive pregnancy complications than the ones who die⁸.

Improvement of maternal mortality was one of the millennium development goals, MDG 5 with Target 5A calls for the reduction of global maternal mortality ratio by three quarters

between 1990 and 2015². Since 1990, through maternal deaths worldwide have dropped by 47%, the number of maternal deaths in developing countries still remains high. The global maternal mortality ratio is 201/100,000 live births while it is about 240 in developing countries as compared to 14/100,000 in developed countries⁹. India has also reported a decline with the figure for 2007-2009 being 212/100,000 births from 398 in 1997-1998 and in 2001-2003¹⁰.

The government of Bangladesh is committed to achieving the target for Millennium Development Goal (MDG) 5. Although the Maternal Mortality Ratio (MMR) in Bangladesh remains high, the Bangladesh Maternal mortality Survey (BMMS) 2010 indicated a substantial reduction in the MMR, an annual rate of decrease of 5.6 percent¹¹. Maternal mortality has steadily decreased from 322 deaths per 100,000 live births in 1998-2001 to 194 maternal deaths per 100,000 live births in 2007-2010 indicating a degree of success in the health sector¹². The Ministry of Health and Family Welfare (MOHFW) has developed various policies and strategies to improve maternal health. With a strong emphasis on improving access and equity in the use of essential maternal services, the MOHFW is implementing the program through two operational plans of HPNSDP under the Directorate General of Health Services (DGHS) and the Directorate General of Family Planning (DGFP)¹³.

For many years, evaluation of maternal healthcare services aimed at improving the quality of obstetric care has traditionally relied on enquiries into maternal deaths. By monitoring only maternal deaths at institutions, very few lessons can be learnt to prevent further deaths. This is further compounded by the fact that in maternal death review meeting most of the patient's records are either missing or incompletely filled³. More recently, review of cases at the very severe end of the maternal morbidity spectrum, described as "Near-miss" has been found to be a useful complement to investigation of maternal mortality^{14,15}. In any setting, women who suffer severe maternal complications share many circumstantial and pathological factors related to their condition. Although near-miss criteria were in vogue for some years, lack of uniformity was the hindrance. In 2009, the WHO introduced the unique concept of 'maternal near miss' (MNM) considering not only clinical but also laboratory and management-based criteria for evaluating quality of care for severe pregnancy complications¹. Hence, it incorporates both Mantel's¹⁶ and Waterston's criteria¹⁷ to minimize the chance of missing the case as if one criterion fails to pick the case the other makes it up. Studying MNM is increasingly being recognized as a useful means to improve the quality of obstetric care, particularly in low and middle income countries¹⁸.

CONCLUSIONS

Obstetric haemorrhage, severe hypertensive disorders and dystocia are the leading causes of maternal near-miss cases. This reflects largely the reluctant prenatal care seeking behavior and to some extent sub-optimal quality of care. Increased efforts are needed to educate pregnant women and to minimize deficiencies in providing quality care along with vigilant monitoring of each and every pregnancy. To cut-off residual morbidity in long run, both timely intervention and availability of a fully functional system dysfunction.

RECOMMENDATIONS

Development of clinical protocol and strict adherence to it by the obstetric staffs may be applied to address the gap of ambiguity. Maternal near-miss surveillance might be a routine practice in health care system and therefore health policy may need to be concerned to prevent maternal near-miss events at all care levels, including the primary level. Referral system should be strengthened at all levels for identified complicated maternity cases. Fully functional and well-equipped hospital should continue to receive continuing education, comprehensive obstetric training, adequate supervision and feedback from referral hospital. It's the high time to consider maternal near-misses as a new indicator of equality of obstetric care in our country.

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REFERENCES

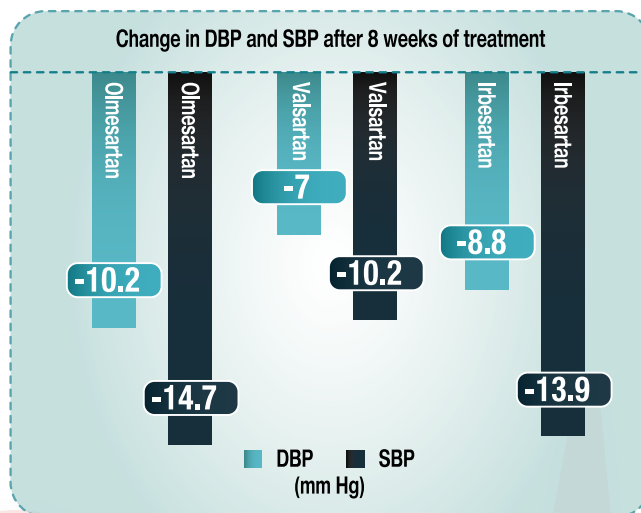
1. WHO. Evaluating the quality of Care for severe Pregnancy complications: The WHO Near-Miss approach for Maternal health. Geneva, Switzerland: World Health Organization:2011.
2. Fifty-fifth Session of the United Nations General Assembly. New York: United Nations; 2000. Sep 18, United Nations Millennium Declaration. General Assembly document, No.A/RES/55/2.
3. Say L, Souza JP, Pattinson RC. Maternal near miss-towards a standard tool for monitoring quality of maternal health care. *Best Pract Res Obstet Gynaecol*. 2009; 23 (3): 287-96.-doi:10.1016/j.bpobgyn.2009.01.007.
4. Ministry of Health and Child Care: Maternal and perinatal mortality 2007. Harare Ministry of health and Child care 2009.
5. Say L, Pattinson RC, Gulmezoglu AM. WHO systematic review of maternal morbidity and mortality: the prevalence of severe acute morbidity (near-miss) *Reprod Health*.2004; 1:3-8.

6. Cham M, Sundby J, Vangen S. A viability and quality of emergency obstetric care in Gambia's main referral hospital: Women-users testimonies. *Report Health*. 2009;6:5.
7. Munjanja SP. Joining the dots: a plea for estimates of the maternal mortality ratio in sub-Saharan Africa. *BJOG*. 2009; 116(Suppl 1) : B17-22.
8. Kilpatrick sk, Ecker JL, Callaghan WM. Severe maternal morbidity: screening and review. *Am J Obstet Gynecol*. 2016;215(3):B17-22.
9. World Health Organization. WHO, UNICEF, UNEPA and the World Bank Estimates. Geneva, Switzerland: World Health Organization; 2012. Trends in Maternal Mortality; 1990-2010.
10. Vital Statistics Division, Ministry of Home Affairs. New Delhi: Government of India; 2011. Registrar General of India. Special Bulletin on Maternal Mortality in India, 2007-09.
11. National Institute of Population Research and Training (NIPORT), MEASURE Evaluation and international Center for Diarrhoeal Disease Research Bangladesh ICDDR,B, 2011. Bangladesh Maternal Mortality and Health Care Survey 2010: Preliminary Results. Dhaka Bangladesh: NIPORT, MEASURE Evaluation and ICDDR,B.
12. National Institute of Population Research and Training (NIPORT), Mitra and Associates and ICF International. 2016. Bangladesh Demographic and Health Survey 2014. Dhaka Bangladesh and Rockville, Maryland, USA: NIPORT, Mitra and Associates and ICF International.
13. Ministry of Health and Family Welfare (MOHFW) [Bangladesh]. 2011b. Strategic Plan for Health, Population and Nutrition Sector Development Program (HPNSDP) 2011-16. Planning Wing, MOHFW, Government of the People's Republic of Bangladesh.
14. Ronsmans C, Filippi V. Reviewing severe maternal morbidity: learning from survivors from life-threatening complications. In *beyond the numbers: reviewing deaths and complications to make pregnancy safer*. Geneva: World Health Organization; 2004;103-24.
15. Pattinson RC, Buchman E, Mantel G, Schoon M, Rees H. Can enquiries into severe acute maternal morbidity act as a surrogate for maternal death enquires? *BJOG*. 2003; 110 (10):889-893.
16. Mantel GD, Buchmann E, Rees H, Pattinson RC. Severe acute maternal morbidity: a pilot study of a definition for a near-miss. *Br J Obstet Gynaecol*. 1998; 105 (9):985-990.
17. Waterstone M, Wolfe C, Bewlely S. Incidence and predictors of severe obstetric morbidity: case-control study. *British Medical Journal* 2001.; 322(7294):1089-93.
18. Filippi V, Brugha R, Browne E, et al. Obstetric audit in resource-poor settings: lessons from a multi-country project auditing 'near miss' obstetrical emergencies. *Health Policy Plan*. 2004 Jan; 19(1):57-66.
19. Maysoon Jabir, Imad Abdul Salam and Joao Paulo Souza: Maternal near miss and quality of maternal health care in Baghdad, Iraq. *BMJ*. 2013; 13:1-60.
20. Filippi V, Ronsmans C, Gohou V, Goufodji S, Lardi M, Amina S, Saizonou J, de Brouwere V: Maternity wards or emergency obstetric rooms? Incidence of near miss events in African hospitals. *Acta Obstet Gynecol Scand* 2005; 84 (1):11-16.doi:10.1111/j.0001-6349.2005.006336.x.
21. Pattinson R, Say L, Souza JP, Broek NVD, Rooney C. WHO maternal death and near-miss classification. *Bull World Health Organ*. 2009; 87(10): 734.
22. Silva AL, Mendes Ada C, Miranda GM, Sa DA, Souza WV, Lyra TM. Evaluation of maternal and neonatal hospital care: quality index of completeness. *Revista de saude publica*. 2014; 48(4):682-91 discussion 91.
23. Hill K, Thomas K, Abou Zahr C, Walker N, Say L, Inou M, et al. Estimates of maternal mortality worldwide between 1990 and 2005: an assessment of available data. 2007; 370: 1311-1319.
24. Kalra P, Kachhwaha CP. Obstetric near miss morbidity and maternal in a tertiary Care Centre in Western Rajasthan. *Indian J Pubic Health*. 2014; 58(3):199-201.
25. Souza JP, Cecatti JG, Faundes A, et al. Maternal near miss and maternal death in the World |Health Organization's 2005 global survey on maternal and perinatal health. *Bull World Health Organ*. 2010; 88(2):113-119.
26. Bang RA, Bang AT, Reddy MH, Deshmukh MD, Baitule SB, Filippi SB V: Maternal and morbidity during labour and the puerperium in rural home and the need for medical attention: a prospective observational study in gadchiroli, India. *BJOG*. 2004; 3:231-238.
27. Stones W, Lim W, Al-Azzawi F, et al. An investigation of maternal morbidity with identification of life-threatening near miss episodes. *Health Trends* 1991;23(1):13-5.
28. Pattinson RC, Hall M. Near-misses: a useful adjunct to maternal death enquiries. *Br Med Bull*. 2003;67:231-43.
29. Cochet L, Pattinson RC, Macdonald AP. Severe acute maternal morbidity and maternal death audit: a rapid diagnostic tool for evaluation maternal care. *S Afr Med J*. 2003;93(9):700-2.
30. Chhabra P. Maternal near miss: an indicator for maternal health and maternal care. *Indian J Community Med*. 2014; 39(3):132-137.

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Awareness About Breast Cancer Among Women of Reproductive Age Group Attending Out Patient Department of Dhaka Medical College Hospital

Lt Col Md Golam Ferdous¹

ABSTRACT

Breast cancer is the most common type of cancer among the women in both high recourse and low recourse countries but the level of awareness has been reported to be low among women in most of the countries. To evaluate the awareness about breast cancer among the women of reproductive age group (15-49 Years) this cross sectional study was carried out among 199 women in the out-patient departments of Dhaka Medical College Hospital who had come from different walks of life for various treatment purpose. The mean age of the respondents was 28.94 ± 7.92 years. Majority of the respondents were married (52.3%) and housewives (38.2%). Educational level was highest in the secondary and above level (52.8%) and majority (62.8%) belonged to the income group Taka 10000 and above. Among the women who used contraceptive methods majority of them used hormonal contraceptives (73.7%).

Majority of the respondents had no knowledge on breast cancer (55%), no knowledge about the signs and symptoms (38.28%) and age of occurrence of breast cancer (64.8%). Though the majority (86%) of the respondents knew that Breast Self-examination is helpful for early detection of breast cancer, but very few practiced it (3%). Knowledge on breast cancer and on its various aspects varied with educational level and monthly income. Respondents with higher educational level (34.2%) and higher monthly income

(38.7%) were found to have better knowledge, though only 3% of the respondents performed monthly Breast Self-examination.

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INTRODUCTION

Breast cancer is the most common type of cancer among the women in both high recourse and low recourse countries⁷. The incidence, mortality and survival rate in different parts of the world vary from 4 to 10-fold. Recent global cancer statistics indicate that breast cancer incidence is rising at a faster rate in populations of developing countries^{7,21}. The incidence of breast cancer in Bangladesh seems to be very high. In Bangladesh, as there is no population-based cancer registry with

relevant data related to age, sex, marital status, types of cancers, diagnostic & treatment status and survival & mortality rate of cancer patients. It is easily predictable that the incidence of breast cancer is growing at a faster rate and the overall situation is not promising. Recent decline of death rate from breast cancer in western nations is particularly explained by earlier diagnosis as a result of awareness of early presentation. In most of the developing countries including Bangladesh patient comes for treatment in an advance stage when little or no benefit can be derived from any sorts of treatment. Early diagnosis can be successfully achieved by mass screening either by Mammography, Clinical Breast Examination (CBE) and Breast Self-examination (BSE) or by the combination of three. Though it is well documented that mammography is the best choice for screening, breast self-examination is also equally important and beneficial for mass awareness especially in country with limited recourses. In a developing country like Bangladesh and it is not a realistic approach to pursue a population-based mass screening program. According to stepwise approach of Global Summit Panel 2002 Breast Self-examination would be the approach for early detection in limited resources countries.³ Preventive behavior is essential for reducing cancer mortality. Knowledge is an essential predisposing factor for awareness; enhance screening practice and consequently behavioral change. Several studies also show that knowledgeable women are more likely to adhere to recommended breast cancer screening.²⁵ In Bangladesh, still communicable and chronic diseases are the major health issues and all the efforts and recourses are engaged into it. Fighting against cancer and specially breast cancer is in the bottom of the priority list of the policy makers though breast cancer is still the most common female cancer and the second leading cause of cancer death among women in Bangladesh.²²

Ethnicity plays an important role in the risk of developing breast cancer. The annual incidence rate among Chinese women living in China is two third of the women living in Singapore or in Hong Kong and less than one half the rate the women living in USA.¹⁶ Same thing for Japanese women. Japanese women immigrating to USA thus lose the home advantage within one to two generations.¹⁴ In USA African-American women develop breast cancer 10 years earlier than white women with higher stage.¹¹ Survival rates for white American is higher than African-American women at each

stage of disease.²³

Breast cancer is the most common cancer and the leading cause of death in females worldwide, accounting for 23% (1.38 million) of the total new cancer cases and 14% (458,400) of the total cancer deaths in 2008. About half the breast cancer cases and 60% of the deaths are estimated to occur in economically developing countries. In general, incidence rates are high in Western and Northern Europe, Australia/New Zealand, and North America; intermediate in South America, the Caribbean, and Northern Africa; and low in Sub-Saharan Africa and Asia. The factors that contribute to the international variation in incidence rates largely stem from differences in reproductive and hormonal factors and the availability of early detection services.^{16,14} Reproductive factors that increase risk include a long menstrual history, nulliparity, recent use of postmenopausal hormone therapy or oral contraceptives, and late age at first birth.⁹

Description of Breast Cancer: Breast cancer is a malignant tumor that starts from cells of the breast. It is found mostly in women, but men can get breast cancer too. Breast cancer is mostly, though not exclusively, a disease of women.

Types of Breast Cancer: Breast cancer is a cancer that starts in the tissues of the breast, that is, in the glandular breast tissue. Breast cancer is a malignant tumor that has developed from the cells of the breast. A malignant tumor is a group of cancer cells that may invade surrounding tissues or spread (metastasize) to distal areas of the body.²⁸ There are several types of breast cancer, but the two main types are: 1) Ductal carcinoma (occurring in 85-90 percent of the cases) starts in the tubes (ducts) that move milk from the breast to the nipple. Most breast cancers are of this type. 2) Lobular carcinoma (occurring in about 8% of the cases) starts in parts of the breast, called lobules, which produce milk. In rare cases, breast cancer can start in other areas of the breast. Many breast cancers are sensitive to the hormone estrogen. This means that estrogen causes the breast cancer tumor to grow. Such cancer is called estrogen receptor positive cancer.⁹ Nearly all breast cancers start in the ducts or lobules of the breast. They are called adenocarcinoma, a term applied to the cancers of glandular tissue anywhere in the body.

Risk factors and causes of breast cancer: Exact reason of development of breast cancer is not known, however there is probably no single cause. It is thought, that breast cancer results from a combination of risk factors. These risk factors can be grouped into several categories: Gender, Age, Race, Hereditary or genetic, Hormonal imbalance, Pregnancy, Diet, Alcohol, Obesity, Smoking, Breast feeding and pregnancy, night work, Early menarche late menopause, infertile or having no children., Obesity, hypertensive and diabetic, Hormone Replacement Therapy (HRT) without proper screening and investigations, Cancer in any other part of the body, Environ-

mental factors: Industrial waste, gas and fumes, chemically polluted food, vegetables and water, insecticides.⁸

Stages of breast cancer: The most common system used to describe the stages of cancers is the TNM system, developed by American Joint Committee on Cancer (AJCC). This staging system classified cancers based on their T, N and M stages.²⁷

T: stand for tumor (its size and how far it has spread within the breast and to nearby organ.

N: stand for spread to lymph nodes (bean-shaped collections of immune system cells that help fight infections and cancers).

M: is for metastasis (spread to distant organ).

Stage 0 :T0, N0, M0 : Ductal Carcinoma in Situ (DCIS) is the earliest form of breast cancer. In DCIS, cancer cells are located within a duct and have not invaded the surrounding fatty breast tissue or Lobular Carcinoma in Situ (LCIS), which is sometimes classified as stage 0 breast cancer.

Stage I T1, N0, M0: The tumor is 2 cm (about 4/5 of an inch) or less in diameter and has not spread to lymph nodes or distant sites.

Stage II AT1, N1, M0/ T2, N0, M0 : No tumor is found in the breast but it is in 1 to 3 axillary lymph nodes or found by sentinel node biopsy as microscopic disease in internal mammary nodes or the tumor is larger than 5 cm and does not grow into the chest wall and has not spread to lymph nodes. The cancer hasn't spread to distant sites.

Stage IIB T2, N1, M0/T3, N0, M0: The tumor is either larger than 2 centimeters but not larger than 5 centimeters and has spread to the axillary lymph nodes or larger than 5 centimeters but has not spread to the axillary lymph nodes.

Stage IIIA T0 -2, N2, M0/ T3, N1-2, M0 : The tumor is smaller than 5 cm in diameter and has spread to 4 to 9 axillary lymph nodes or found by imaging studies or clinical exam to have spread to internal mammary nodes, or the tumor is larger than 5 cm and has spread to 1 to 9 axillary nodes or to internal mammary nodes. The cancer hasn't spread to distant sites.

Stage IIIB T4, N0-2, M0: The tumor grown into the chest wall or skin and may have spread to no lymph nodes or as many as 9 axillary nodes. It may or may not have spread to internal mammary nodes. The cancer hasn't spread to distant sites.

Stage IIIC T0-4, N3, M0: The tumor is of any size, has spread to 10 or more nodes in the axilla or to 1 or more lymph nodes under the clavicle (infraclavicle) or above the clavicle (supraclavicular) or to internal mammary lymph nodes, which are enlarged because of the cancer. All of these are on the same side as the breast cancer. The cancer hasn't spread to distant sites.

Stage IV T0-4, N0-3, M1: The cancer, regardless of its size, has spread to distant organs such as bone, liver, or lung or to lymph nodes far from the breast.

METHODOLOGY

A cross sectional descriptive was conducted from March to June 2011 in Out-patient departments (OPD) of Dhaka Medical College Hospital. DMCH is the largest hospital in our country, among women of reproductive age. The settings in the OPDs are well- established and provide regular out door services to the patients. Every day about 200 women attend these OPDs for their treatment and checkup. The large attendance made this hospital a good choice for conduct this study. Moreover, it is within the Dhaka city and the journey is less time consuming and easier to the researcher. A self-administered pretested questionnaire was used to collect data by face to face.

RESULT

The age of the respondents ranged from 15 to 49 years. The age of the respondents was categorized into 15-20 years, 21-30 years, 31-40 years and 41-49 years. Represents that the highest number (40.7%) of the study population was within 31-40 years. The mean age of the respondents was estimated as 28.94 years with SD $\pm$ 7.92 years.

Table 1: Sociodemographic information of the participants

Parameter	N	%
Age		
15 -20 years	38	19.1
21 -30 years	69	34.7
31 -40 years	81	40.7
41 -49 years	11	5.5
Religion		
Islam	179	89.9
Hinduism	16	16
Others	4	4
Educational status		
Illiterate	18	9.0
Primary	76	38.2
Secondary & above	105	52.8
Occupation		
Housewife	76	38.2
Service	40	20.5
Business	11	5.5
Others	72	36.0
Residence		
Urban	138	69.3
Rural	61	30.7
Marital status		
Married	104	52.3
Unmarried	81	40.7
Widow	6	3.0
Divorcee	8	4.0

Table 1 shows the distribution of the respondents by age categorization. The highest number (40.7%) of the study population was within 31-40 years. The mean age of the respondents was estimated as 28.94 years. Most of the respondents were Muslim 89.9%. The highest 52.5% (105) respondents completed their (Higher Secondary Certificate), next second highest 38.5% (76) completed Primary School and 9.0% (18) respondents were illiterate. The majority (38%) of the respondents indicated their occupation as house wife and next highest were from other occupations. It is revealed from the above that the highest number that is 69.3% (139) respondents resided in the urban areas and 30.7%

(61) resided in the rural areas. Most 52.3% (104) of the respondents were married, 40.7% (82) were unmarried, 3.0% (6) were widow and 4.0% (8) were divorcee.

Table 2. Duration of breast cancer

Age of occurrence of breast cancer	Frequency	Percent
20-30 years	8	4.0
31-40 years	11	5.5
41-50 years	50	25.1
above 50 years	2	1.0
not known	128	64.3
Total	199	100

All most all (96.5%) participants told that any lump can not be called as cancer. Only 3.5% told that any lump can be called as cancer. Out of 199 respondents 39.5% respondents told breast cancer as a common cancer. Revealed that majority 64.3% of the respondents did not know the age of occurrence of breast cancer. 25.1% had the opinion of breast cancer in the age of 41 to 50 years.

Table 3. Distribution of the respondents according to their knowledge about sign & symptoms of breast cancer (n=199)

Sign/symptoms of breast cancer	Knowledge on breast cancer		Total
	Yes	No	
A lump or growth in the breast	47	1	48(13.37%)
Change in size (deformity of breast)	47	6	53(14.76%)
Change in skin colour and puckering of skin	48	4	52(14.48%)
Pain in the breast	43	1	44(12.26%)
Discharge from the breast	20	1	21(5.85%)
Not known	41	100	141(39.28%)

Table 3 showed the Out of 199 respondents 39.28% respondents had no knowledge about the signs and symptoms of breast cancer.

Table 4. Knowledge about the cause and risks of breast cancer

Parameter	N	%
Chance of breast cancer if there is no breast feeding		
Yes	134	67.3
No	65	32.7
Chance of breast cancer with prolonged use of contraceptive pill/injection		
Yes	131	65.8
No	68	34.2
Knowledge on breast self-examination(BSE) of every woman above 20 years		
Yes	149	74.9
No	50	25.1
Perform breast self-examination (BSE) every month		
Yes	6	3
No	193	97
Ultrasonography/mammography helpful for early diagnosis of breast cancer		
Yes	169	84.9
No	30	15.1
Attendance at any breast cancer awareness campaign		
Yes	2	1.0
No	197	99.0

Table 4 showed that 67.3% were agreed in this regards that there is chance of breast cancer if there is no breast feeding and 32.7% did not agree. 65.8% were agreed in this regards that there was chance of breast cancer with prolonged use of hormonal contraceptives and 34.2% did not agree. 74.9% told that all women need to do Breast Self-examination above 20 years. Only 25.1% did not agreed in this regards. All most all 97% told that they did not perform breast self-examination. Only 3% told that they perform breast self-examination.

Table 5. Distribution between knowledge on breast cancer and performance of breast self-examination(BSE) (n=199)

Knowledge on breast cancer	Perform breast self-examination (BSE) every month		Total
	Yes	No	
Yes	4 (2%)	86 (43.2%)	90 (45.2%)
No	2 (1%)	108 (53.8%)	110 (54.8%)
Total	6 (3%)	19 (97%)	199 (100%)

$\chi^2=1.15$ $P>0.05$ df 1

Table 5 showed that 90(45.2%) who had knowledge on breast cancer only 4(2%) perform Breast Self-examination(BSE).In the counter part,it was only 2(1%). This association between knowledge on breast cancer and performance of breast self-examination (BSE) was not significant ($p>0.05$).

Table 6. Distribution between knowledge on breast cancer and knowledge on ultrasonography or mammography helpful for early diagnosis of breast cancer (n=199)

Knowledge on breast cancer	Ultrasonography/mammography helpful for early diagnosis of breast cancer		Total
	Yes	No	
Yes	88 (44.2%)	2 (1%)	90 (45.2%)
No	8 (40.7%)	28 (14.1%)	110 (54.8%)
Total	169 (84.9%)	30 (15.1%)	199 (100%)

$\chi^2=21.20$ $P<0.05$ df 1

Table 6 showed that respondents who had knowledge on breast cancer 90(45.2%) ,88(44.2%) told ultrasonography or mammography was helpful for early diagnosis of breast cancer, In the counter part 109(54.8%), 81(40.7%) said that ultrasonography or mammography helpful for early diagnosis of breast cancer. It was revealed from the result that this association between knowledge on breast cancer and knowledge on ultrasonography or mammography helpful for early diagnosis of breast cancer was significant ($p<0.05$).

Table 7. Distribution of the respondents by the knowledge on breast cancer and chance of developing breast cancer with prolonged use of contraceptive pill/injection (n=199)

Knowledge on breast cancer	Chance of developing breast cancer with prolonged use of contraceptive pill/ injection		Total
	Yes	No	
Yes	75 (37.7%)	15 (7.5%)	90 (45.2%)
No	56 (28%)	53 (26.6%)	109 (54.8%)
Total	131 (65.8%)	68 (34.2%)	199 (100%)

$\chi^2= 22.38$ $P< 0.05$ df 1

Table 7 showed knowledge on breast cancer 75(37.7%) were in the opinion of having a positive relationship of prolonged hormonal contraceptives use with breast cancer, while 26.6% of the opposite group having no knowledge on breast cancer had negative view about it. There was significant association between knowledge on breast cancer and it's relationship with prolonged hormonal contraceptive use ($P<0.05$).

Table 8. Distribution between knowledge on breast cancer and chance of developing breast cancer if mothers do not breast feed (n=199)

Knowledge on breast cancer	Chance of developing breast cancer if mothers do not breast feed		Total
	Yes	No	
Yes	72	18	90
	(36.2%)	(9%)	(45.2%)
No	62	47	109
	(31.2%)	(24.6%)	(54.8%)
Total	134	65	199
	(67.3%)	(33.7%)	(100%)

$$\chi^2=11.98 \text{ } P<0.05 \text{ df } 1$$

Table 8 showed the knowledge on breast cancer 90(45.2%) ,72(36.2%) told there was chance of developing breast cancer if mothers do not breast feed, Among those who had no knowledge on breast cancer 109(54.8%) , 62(31.2%) told there was chance of developing breast cancer if mothers do not breast feed. It was revealed from the result that this association between knowledge on breast cancer and knowledge on chance of developing breast cancer if mothers do not breast feed was significant ($p<0.05$).

Table 9. Distribution between breast self-examination(BSE) helpful for early diagnosis of breast cancer and performance of breast self-examination(BSE) every month (n=199)

Breast self-examination helpful for early diagnosis of breast cancer	Educational level			Total
	Illiterate	Primary	Secondary & above	
Yes	13 (6.5%)	66 (33%)	93 (46.7%)	172 (86.4%)
No	5 (2.5%)	10 (5.0%)	12 (6%)	27 (13.6%)
Total	18 (9%)	76 (38.2%)	105 (52.8%)	199 (100%)

$$\chi^2= 3.52 \text{ } P>0.05 \text{ df } 2$$

Table 9 showed that respondents the majority 46.7%(93) who told breast self- examination helpful for early diagnosis of breast cancer had the educational level secondary & above. On the counter part it was 2.5% illiterate who did not agree.

DISCUSSION

The study found that 35.2% women heard about cancer, 64.8% % did not hear and 45.2% women heard about breast cancer and 54.8% did not hear. This present study is not in consistent with the study of Matin S M¹⁸ who found hundred percent respondents heard the name of breast cancer. This present study result can be discussed with the study of Gomes M R¹² showing 55.90% respondents heard about breast cancer.

The study result showed that the highest (62.9%) income group had an income above Taka 10000, 16.1% Taka 5000 to 10000 and 21.1% income of below Taka 5000. In addition result showed that nobody smoked and majority 82.4% respondents never exposed to x-ray.

Islam N¹⁵ in study also found 81.25% the majority to be housewives and 12.5% to be service holders. Rahman A N M W²⁴ found in his study that 79.44% were house wives who were the majority followed by 16.6% belonged to monthly income of Taka 3001- 5000, and 5.5% belonged to monthly income group of Taka 5001-7000. Significant association was found between monthly family income and knowledge on cancer. Azad T⁴ found most of the respondents having knowledge on cancer belonged to monthly income group of Taka 3001-5000, followed 24.6% who belonged to monthly income of Taka 5100-7000. In the contrast group 16.6% belonged to income group of Taka 3001- 5 000.

This cross-sectional study entitled "Awareness on breast cancer among the women of reproductive age group (15 to 49 years) attending at Out Patient Departments of Dhaka

Medical College Hospital " was carried on 199 women who had come from different walks of life for treatment of various health problems at the out-patient departments of Dhaka Medical college Hospital. The most important findings of the study are discussed below.

The age ranged from 15 years to 49 years. The majority (40.7%) were in the age group of 31 to 40 years. The next highest were in the age group 21-30 years (34.5%) and 15 to 20 years (19.1%) and the least were in the age group of 31-49 years (5.5%). The mean age was 28.94 ± 7.92 years (Table-4.1.1)

This finding were not consistent with the findings of Islam N¹⁵ , Rahman A N M W²⁴ and Azad T⁴ They found that majority of the women seeking antenatal check up at out patient department of Dhaka Medical College Hospital were in the age group of 26 to 30 years. In all age categories 70 respondents (35.2%) had adequate knowledge on cancer and its percentage ranks were 18% in 15 to 20 years , 12.5% in age group of 21 to 30 and 31 to 40 years each and only 1% were in age group of 41 to 49 years.

Majority 52.3% of the women were married. This result is

more or less similar with the result of Hassan A¹³ who found 50.6% married.

Majority 20.3% of the respondents' age at marriage was 20 and majority's 40.7% age of menarche was 12. This result is not consistent with the study of Gomes J A and Ghosh G A¹¹ who found that majority (75.55%) of respondents age at menarche was more than 12 years.

Study result also showed that only 1 women was menopauses. Among the married 59% women 86% women had children. Of them 38% women reported that they had got 1 child, only 7% has got 3 child. And 56% had got 2 child this group was the highest group. This result can be compared with the study of Gomes M R¹² who found 75% had got children.

It was revealed within this study that majority 89.9% were Muslim. This result is similar to the result of Gomes M R¹² who found 87.26% were Muslim.

The study result showed that 38.2% women were house wife, 20.5% were service holder, only 6% were business and 36.2% were others. This result is also not consistent with the study of Gomes M R¹² who found 70.45% were house wife and Begum M⁵ found 72.57% house wife. It is evident from the study that majority 69.5% of the participants lived in urban area. This result is consistent with the study of Gomes M R¹² who found 62.70% participants lived in urban areas, Begum M⁵ found 69% lived in urban and Gomes J A and Ghosh G A¹¹ who found 60% participants lived in urban areas.

This study result showed that 100% women breast feed their child. This result is same with the result of Gomes J A and Ghosh G A¹¹ who found 100% women had breast feed their child. 32.2% women used contraceptives, among them 68.4% used oral pill and 31.6% were taking contraceptive for 5 years, 18.4% for 2 years, 15.8% were 4 years, 13.2% were 3 years, 13.2% were for 6 years and only 8% for 6 years.

It was evident from the study that majority 56 (55.4%) had two children, 38 (37.6%) had only one child and 7(6.9%) had three children. This finding was not consistent with the study of Azad T⁴. Regarding number of children she found only 4.3% were through their first pregnancy, 48.1% had only one child, 32.7% had two children. 11.7% had three children and 3.1% had four children. Islam N¹⁵ found 47.3% with one child, 31.2% with two children, 9.8% with three children, 9.8% with four children and 2.6% with five children.

Out of 199 respondents 90 (45.2%) had knowledge on breast cancer and among them 50 (25%) mentioned the age group of 41-50 years and only 5.5% mentioned about 31-40 years as the age of occurrence of breast cancer. 128(64.3%) of the respondents in the converse group had no idea about the age of occurrence of breast cancer. This finding was consistent with the study of Ahmed MSA M and Ahmed S². In their study they found cases of breast cancer in the age group of 40-49 years.

Azad T⁴ in her study found that out of 162 respondents 62.3% had knowledge on breast cancer and among them 23.4% mentioned the age group of 31-40 years and 22.8% mentioned about 41-50 years as the age of occurrence of breast cancer. According to Bangladesh Cancer Society the risk of breast cancer increases after the age of 35 years.

Majority of the respondents having adequate knowledge on breast cancer (45.2%) had significantly adequate knowledge and gave multiple answers on it's sign/symptoms as the presence of a breast lump, breast deformity, changes in the skin colour and puckering of skin of the breast and discharge from the nipple (Table 4.1.19). The finding was statistically significant ($P<0.05$). This finding consistent with the finding of Azad T⁴. The study showed that 86.4% knew that breast self-examination helpful for early diagnosis of breast cancer, but only 3% practiced it. This was not consistent with the finding of Azad T⁴. In her study it was found that out of the total respondents 44.4% had knowledge on performance of monthly breast self-examination but only 25.9% performed it. The results of the study indicated that there is a need to gain more knowledge of women by which they will be aware about breast cancer. Adequate measures should be taken to educate and create awareness on monthly breast self-examination among the women of reproductive age group (15 -49 years) to increase their practice on this aspect.

In the study knowledge of breast cancer and its relationship with knowledge on breast feeding was found to have significant association ($P<0.05$). 67% of respondents (36% had adequate knowledge on breast cancer and 31% had no knowledge on it) said that chances of breast cancer are more in those who do not breast feed their children. In the counter part group almost majority had said that it has no relation with breast feeding. It was found that all the women having children had breast fed their children (100%). Pöhls U G *et al*²⁸ showed interestingly 37.1% considered breast feeding and 23.7% considered childlessness as a potential risk factors for breast cancer. Gynecologists were the main source of information (59.9%) on breast cancer. This is not consistent with the study due to the different type of socio-economic and cultural environment in Germany. Breast feeding campaign should be encouraged as breast feeding appears to be protective against breast cancer.

Regarding chance of breast cancer with prolonged use of hormonal contraceptives, 65.8% were in the opinion of having a positive relationship while 34.2% of the opposite group had negative view about it. There was significant association between knowledge on breast cancer, and it's relationship with prolonged hormonal contraceptive use ($P<0.05$). This was not consistent with the findings of Azad T⁴. In her study it was found regarding relationship of prolonged hormonal contraceptive use with breast cancer that 38.2 were in the opinion of

having a positive relationship while 36.2% of the opposite group having no knowledge on breast cancer had negative view about it. Matin S M²⁰ found 47.75% had poor knowledge about the chance of development of breast cancer due to prolonged use of contraceptive which is nearly similar with the study. But this result is not consistent with the study of Gomes J A and Ghosh G A¹¹ who found 71.21% women did not know anything about the chance of development of breast cancer due to prolonged use of contraceptive WA Milaat²⁹. Only 15.2% agreed that use of contraceptive pill is a potential risk factor and few (16.2%) knew that breast cancer could appear as a change of or bleeding from the nipple. Regarding the contraceptive pill this is not consistent with the study, but regarding the symptoms of breast cancer this is consistent with the study. Ahmed MSA M and Ahmed S² in their cross sectional study found that 95.4% respondents had history of taking oral hormonal pill, which supported their hypothesis that oral pills might have an association with breast cancer. Cancer prevention and control may be included in syllabus from secondary education so that students themselves could be more aware of it.

The study showed that only all most all 97% participant told that any lump can not be called cancer. Only 3% told that any lump can be called cancer. This is not consistent with Bener A B et al⁶ who found that 45 % stated that most of the breast lump would become cancerous and 33% of the women knew that early breast cancer was painful.

Most of the respondents having adequate knowledge on breast cancer also had knowledge on it's diagnostic procedure and the ranking was 44.2% in view of mammography and ultrasonography. This finding was similar with the finding of Azad T⁴ which was 45.8%. M S T Chua¹⁷ found that it was found that 58% had never heard of mammographic screening and 42% heard about it. This is also consistent with the study.

Semiglazov V F et al²⁶ over 60% of the women either did not respond or did not knew about the breast cancer screening test. Abimbola O¹ showed that no one could identify that mammography is an early detection measure. only 6.4% identified that BSE. Olugbenga-Bello A²⁰ found about two thirds (67.9%) of those who had heard of breast cancer knew that there were screening methods available, but mammography was rarely done.

The study result also showed that majority 88% did not know any one who had breast cancer and only 1% attended the breast cancer awareness campaign. This study result is not consistent with the study of Gomes J A and Ghosh G A¹¹ who found 6.97% received counseling about breast cancer. Media (electronic and print) can put special program/supplementary regarding cancer awareness as part of public awareness campaigning. Measures should be taken to attend awareness campaign on breast cancer to prevent it.

CONCLUSION

The study also identified that women were not so much aware regarding breast cancer and its prevention, control measures, and risk factors. It is clear that the level of knowledge and awareness of the participants was very poor and inadequate regarding prevention and control of breast cancer.

REFERENCES

1. Abimbola O, Oluwatosin O. A, Oladepo O : Knowledge of breast cancer and its early detection measures among rural women in Akinyele Local Government Area, Ibadan, Nigeria. BMC Cancer 2006;6:271.
2. Ahmed M SAM, Ahmed S: A cross sectional study on breast cancer patients attending the National Cancer Institute of Research and Hospital, Mohakhali, Dhaka, NIP-SOM, 1994;13(2-4):93-97.
3. Anderson B O, Braun S, Lim S, Smith R A, Taplin S et al.: Early detection of breast cancer in countries with limited resources. The Breast Journal 2003;9(suppl.); S51- 59.
4. Azad T: Awareness on breast cancer among the women seeking antenatal check up, Dissertation for MPH(CM) Course, National Institute of Preventive and Social Medicine (NIPSOM), Mohakhali, Dhaka, 1997-98.
5. Begum M: Awareness on breast cancer among the women of reproductive age. Dissertation, Department of Public Health Northern University, Bangladesh, 2008.
6. Bener A, Alwash R, Miller CJ, Denic S, Dunn EV: Knowledge, attitudes, and practices related to breast cancer screening: a survey of Arabic women. J Cancer Educ. 2001 Winter;16(4):215-20.
7. Bray, MacCarron P, Parkin D M : The changing global patterns of female breast cancer incidence and mortality, Breast Cancer Research, 2006;229-239.
8. Brinton LA, Schairer C: Estrogen replacement therapy and breast cancer risk. Epidemiol Rev 1993;15:66-79,
9. Campbell B J.: Breast cancer-race, ethnicity and survival: a literature review, Breast Cancer Research and treatment, 2002; 74:187-192.
10. Cancer reference information 2006 {a} (http://www.cancer.org/docroot/CRI/content/CRI_2_4_1x_What_is_breast_cance...4/23/)
11. Gomes JA, Ghosh G: A Phenomenological Study: To assess the satisfaction of breast cancer patient with Nursing care. Unpublished research. 2005. IPSOM), Dhaka, Bangladesh, 2005
12. Gomes M R: Awareness of breast cancer among the reproductive age group. Master of Public Health (MPH.) course under the Department of Public Health, School of Health

Science, State University of Bangladesh. Dissertation, 2006-2007.

13. Hasan A: Awareness of Breast Cancer and the common Breast problems among Adolescent Girls in selected Hospitals and clinic. National Institute of Preventive Social Medicine (NIPSOM), Dhaka, Bangladesh, 2002.

14. http://www.breastcancersource.com/breastcancersourceh-cp/10010_11092_0_0_0.aspx?mid=1

15. Islam N: Study on the attitude of pregnant women regarding hospital delivery in a intensified Thana;Dissertation for MPH(PH) course,1995-96

16. Lacey J V Jr, Devesa S S, Brinton L A: Environmental and Molecular Mutagenesis 2, 2002; 39:82-88

17. Margaret ST Chua : Knowledge,perception and attitudes of Hongkong Chinese women on screening mammography and early breast cancer management,The Breast Journal 2005;11:52-56.

18. Matin S M: Knowledge Regarding Breast Cancer Among the Housewives in a Selected area of Dhaka City. National Institute of Preventive Social Medicine (NIPSOM), Dhaka, Bangladesh, 2005

19. Olugbenga-Bello A, Oladele EA, Bello TO, Ojo JO, Ogun-tola AS: Awareness and Breast Cancer Risk Factors:Perception and Screening Practices among Females in a Tertiary Institution in Southwest Nigeria. Source :Department of Community Medicine,Ladoke Akintola College of Health Sciences PMB 4400, Osogbo, Osun State Nigeria. Abstract

20. Özgül K, Dilek , Aynur Ç Ç : Awareness of breast cancer risk factors and practice of breast self examination among high school students in Turkey, Bio Med Central (BMC) Public Health 2008 ;Volume 8, Pages 359.

21. Parkin DM, Whelan SL, Ferlay J, Raymond L, Young J: Cancer Incidence in Five Continents, vol VIII, Lyon: IARC Press; 1997.

22. Phillips, Monahan, Sands, Make and Neighbors: Medical Surgical Nursing, Health and illness perspective, Seventh Edition, 2005; 4:1788- 1799

23. Rahim M A: Facts and figures about cancer in Bangladesh: Cancer Detect Prev.1986; 9(3-4):203-5.

24. Rahman ANMW: Antenatal care seeking behavior in selected urban poor communities, Dissertation for MPH(PHA) Course,1996-97.

25. Sadler G R: Breast cancer knowledge, attitudes and screening behaviours among African American women: the Black cosmetologists promoting health program, BMC Public Health ,2007; 7:57.

26. Semiglazov VF, Moiseyenko VM, Manikhas AG et al :

Role of breast selfexamination in early detection of breast cancer: Russia/WHO prospective randomized trial in St.Peters-burg.Cancer Strategy 1999;1:145-51.

27. Sharon A George: Barrier to breast cancer screening: an Integrative review .Health care for women international, 2000; 21:53-65 46.

28. U G Pöhls, S P Renner, P A Fasching, M P Lux, H Kreis, S Ackermann, H-G Bender, M W Beckmann: Awareness of breast cancer incidence and risk factors among healthy women, European journal of cancer prevention the official journal of the European Cancer Prevention Organisation ECP, 2004 ;Volume 13, Issue 4, Pages: 249- 256.

29. W.A. Milaat: Knowledge of secondary-school female students on breast cancer and breast self-examination in Jeddah, Saudi Arabia, Eastern Mediterranean Health Journal, 2000,6:338-343 49

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Knowledge Regarding Organophosphorus Poisoning Among Nurses in a Hospital of Siddharthanagar Municipality

Mahesh Raj Ghimire¹, Sulochana Ghimire², Shristi Khatri³,

ABSTRACT

Introduction: Organophosphorus poisoning occurs most commonly as suicide attempt in farming areas of the developing world and considered as a cause of morbidity and mortality in many parts of the world. This study has been conducted to find out the knowledge regarding organophosphorus poisoning among nurses.

Material and Methods: A descriptive study design was used. One hundred and seven respondents were selected as the study sample by using simple random sampling technique using table of random numbers. Self-administered semi-structured questionnaire was used to collect the data and collected data were analyzed by using descriptive and inferential statistics with Statistical Package for Social Sciences software version 16.

Results: The findings of the study revealed that 93.46% and 74.77% of the respondents had knowledge regarding meaning of poison and commonest poisoning respectively. Overall, the study revealed that 52.34% of the respondents had high knowledge and 47.66% had low knowledge regarding organophosphorus poisoning. There was statistically significant association between working experience and respondents' level of knowledge regarding organophosphorus poisoning ($p=0.019$).

Conclusion: Based on the study findings, it is concluded that respondents have high knowledge regarding meaning of poison and commonest poisoning. Two fifth of respondents have knowledge that respiratory failure is the common cause of death in organophosphorus poisoning. Regarding overall knowledge, more than half of the respondents have high knowledge regarding organophosphorus poisoning. The findings showed that working experience of the respondents influence the knowledge regarding organophosphorus poisoning.

Keywords: Knowledge, nurses, organophosphorus poisoning

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INTRODUCTION

Organophosphates (OPs) are one of the main classes of insecticides, in use since the mid-1940s. OPs can exert significant adverse effects in non-target species including humans [1]. Among pesticides, organophosphorus compounds are one of the most common causes of poisoning worldwide and are frequently used in suicides [2]. The mortality rate of organophosphorus poisoning depend on the type of compound used, amount ingested, general health of the patient, delay in discovery and transport. The most common cause for death is respiratory failure [3]. Organophosphorus poisoning is a common

reason for visits to emergency departments and for hospitalization worldwide and it is a cause of both morbidity and mortality in many parts of the world [4].

A prospective study was conducted in October 2010 at Manipal, Pokhara for evaluation of incidence, clinical features and management of organophosphorus poisoning. The most affected age groups was 21-30 years (60.5%). The total mortality rate of the study population was found to be 25% with organophosphorus poisoning [5]. Descriptive study was done among 150 nurses of Tertiary Care Hospital, Qatar to explore the knowledge on organophosphorus poisoning. Result showed that 54%

of nurses had adequate knowledge and 46% had inadequate knowledge on organophosphorus poisoning [6].

The objective of the study was to find out the knowledge regarding organophosphorus poisoning among nurses in a hospital of Siddharthanagar Municipality.

MATERIALS & METHODS

A Descriptive study design was used to find out the knowledge regarding organophosphorus poisoning among nurses. The study was conducted in Universal College of Medical Sciences, Teaching Hospital (UCMS-TH), Siddharthanagar-1, Rupandehi, Province- 5. Probability simple random sampling technique using table of random numbers was used for the study. Sample size (107) was estimated by using Slovin's formula. Researcher developed self-administered semi-structured questionnaire by reviewing the related literatures and consulting with research advisor and subject experts. The research instrument consisted of two parts. Part I was related to socio-demographic variables and part II was related to knowledge regarding organophosphorus poisoning. Ethical approval was obtained from Institutional Review Committee, UCMS-TH by submitting research proposal. Administrative approval for data collection was obtained from UCMS-TH, Siddharthanagar-1, Rupandehi. Respondents were explained about the purpose of the study and obtained the informed written consent from each respondent. Anonymity was assured by giving code number to each questionnaire. Data was collected in two weeks period from 8th to 20th July, 2018. The collected data was edited, classified, coded, entered and cleaned. All the collected data was analyzed by using descriptive statistics as frequency, percentage and mean and inferential statistics as chi-square with Statistical Package for Social Sciences (SPSS) software version 16.

RESULTS

Professional characteristic of the respondents includes working department, working experience and in-service education as shown in table 1.

Table 1 Respondents' Professional Characteristics

N=107

Variables	Frequency	Percentage
Working department		
General units	62	57.94
Critical units	45	42.06
Working experience		
1-24 months	73	68.22
More than 24 months	34	38.78
In-service education		
Yes	12	11.21
No	95	88.79

Among 107 respondents 93.46% answered any substance which causes damage or dysfunction in the body as the meaning of poison. Regarding commonest poisoning, 74.77% of the respondents answered pesticides poisoning as the commonest poisoning. Almost 60% of the respondents answered women as the vulnerable group to take poison. The results showed that 48.61% of the respondents answered bradycardia as the clinical feature of organophosphorus poisoning. Respondents' knowledge regarding meaning of gastric lavage is shown in table 2.

Table 2 Respondents' Knowledge Regarding Meaning of Gastric Lavage

n=107

Meaning**	Frequency	Percentage
Stomach washing*	28	26.16
Removing of poison from stomach*	42	39.25
Removing of gastric juice	3	2.80
Removing of gastric contents from stomach*	31	28.98
Removing of waste from intestine	1	0.93
Irrigation and cleaning gastric contents from stomach*	2	1.87

*Correct response; **Multiple responses

Regarding indication of gastric lavage, 78.50% of the respondents answered organophosphorus poisoning as the indication of gastric lavage and 86.92% of the respondents answered activated charcoal as the compound used in gastric lavage. Out of 107 respondents, 86.92% of the respondents answered activated charcoal as the compound used in gastric lavage. Regarding initial dose of atropine in adults, 52.33% of the respondents answered 2mg intravenous or intramuscular injection. Respondents' knowledge regarding atropine toxicity is shown in table 3.

Table 3 Respondents' Knowledge Regarding Atropine Toxicity

n=107

Atropine toxicity	Frequency	Percentage
Absent bowel sound*	55	51.40
Sweating	85	79.43
Hyperthermia*	63	58.87
Confusion*	79	73.83
Heart palpitation*	91	85.04
Atropine fever*	35	32.71

*Correct response; **Multiple responses

Nearly half (42.06%) of the respondents answered respiratory failure as the common cause of death in organophosphorus poisoning. More than half (52.34%) of the respondents had high knowledge regarding organophosphorus poisoning as shown in table 4.

TABLE 4 Respondents' Overall Level of Knowledge Regarding Organophosphorus Poisoning

n=107

Knowledge level	Frequency	Percentage
High	56	52.34
Low	51	47.66
Total	107	100

Mean score=14.05

Total score=23

TABLE 5 Association of Respondents' Level of Knowledge Regarding Organophosphorus Poisoning with Professional Characteristics

Variables	Level of Awareness		χ^2	P-value
	High	Low		
	No. (%)	No. (%)		
Working department				
General units	33(60.00)	30(57.70)	0.059	0.808
Critical units	22(40.00)	22(42.30)		
Working experience				
1-24 months	33(60.00)	42(80.80)	5.500	0.019
More than 24 months	22(40.00)	10(19.20)		
In-service education				
Yes	5(8.92)	7(13.73)	0.513	0.474
No	51(91.08)	44(86.27)		

Significance level at $p < 0.05$

Table 5 shows that there was statistically significant association between working experience and respondents' level of knowledge regarding organophosphorus poisoning.

DISCUSSION

The findings of the study showed that 93.46% of the respondents had knowledge regarding meaning of poison as any substance which causes damage or dysfunction in the body. The finding is consistent with the study⁶ which shows 89.7% of the respondents had knowledge regarding meaning of poison as any substance which cause damage or dysfunction in the body. Likewise this study revealed that 57.94% of the respondents had knowledge regarding women as vulnerable group to take poison. The finding is consistent with the study⁷ which shows 53.5% of the respondents had knowledge regarding women as vulnerable group to take poison. Again the study showed that 86.92% of the respondents had knowledge regard-

ing activated charcoal as the compound used in gastric lavage for poisoning which is consistent with the study⁹ shows 84.6% of the respondents had knowledge regarding activated charcoal as the compound used in gastric lavage for poisoning.

The study findings showed that 78.50% of the respondents had knowledge regarding ingestion of organophosphorus poisoning as the indication of gastric lavage. The finding is inconsistent with the study¹⁰ which shows that 69.1% of the respondents had knowledge regarding ingestion of organophosphorus poisoning as the indication of gastric lavage. This difference in the findings may be due to that in the study¹⁰ none of the respondents had received in-service education regarding organophosphorus poisoning.

The findings of the study showed that 28.98% of the respondents had knowledge regarding initial dose is 4mg intravenous or intramuscular in atropine injection in adults. The finding is not consistent with the study¹¹ that shows 47% of the respondents had knowledge regarding initial dose of atropine is 4mg intravenous or intramuscular in atropine injection in adults. This result may be due to the difference between professional background of the respondents. In the study¹¹ only two third of total respondents were nurse and one third were physicians.

Self-administered semi-structured questionnaire was used for the data collection so it lacks in-depth information which can be considered as the limitation of the study.

CONCLUSION

On the basis of the findings of the study, it is concluded that more than half of the nurses have overall high knowledge regarding organophosphorus poisoning. Nurses have high knowledge regarding meaning of poison, commonest poisoning, meaning of gastric lavage, its indication, effectiveness, compound and purpose, dose and common side effects of atropine, signs of atropine toxicity. Nurses' working experience has statistically significant association with level of knowledge regarding organophosphorus poisoning. Nurses' working department and in-service education has not statistically associated with level of knowledge regarding organophosphorus poisoning.

With these findings it is recommended to conduct in-service education regarding organophosphorus poisoning among nurses to upgrade their knowledge.

ACKNOWLEDGEMENT

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REFERENCES

- Costa LG. Current issues in organophosphate toxicology. *Clinica chimica acta*. 2006 Apr 1;366(1-2):1-3.
- Pandit V, Seshadri S, Rao SN, Samarasinghe C, Kumar A, Valsalan R. A case of organophosphate poisoning presenting with seizure and unavailable history of parenteral suicide attempt. *Journal of emergencies, trauma and shock*. 2011 Jan;4(1):132.
- Krupesh N, Chandrashekar TR, Ashok AC. Organophosphorus Poisoning-Still a challenging proposition. *Indian Journal of Anaesthesia*. 2002 Jan 1;46(1):40.
- Malangu N, Ogunbanjo GA. A profile of acute poisoning at selected hospitals in South Africa. *Southern African Journal of Epidemiology and Infection*. 2009 Jan 1;24(2):14-6.
- Thunga G, Sam KG, Khera K, Sureshwar P, Sagar SV. Evaluation of incidence, clinical characteristics and management in organophosphorus poisoning patients in a tertiary care hospital. *Journal of Toxicology and Environmental Health Sciences*. 2010 Oct 31;2(5):73-6.
- Rutto J, Mwaura J, Chepchirchir A, Odero T. Nurse's knowledge, attitude and practice on the initial management of acute poisoning among adult casualties: Study at Kenyatta National Hospital, Kenya. 2012 Sept 2: 149-156.
- Awad W, Abbasy ME, Ebrahim AH, Gaffer R, Khan SS. Organophosphorus toxicity awareness among Emergency Department healthcare providers in Tertiary Care Hospital, Qatar. *Journal of Emergency Medicine, Trauma and Acute Care*. 2016 Oct 9;2016(2):109.
- Giyanwani PR, Zubair U, Salam O, Zubair Z. Respiratory failure following organophosphate poisoning: A literature review. *Cureus*. 2017 Sep;9(9).
- Lekei E, Ngowi AV, Mkalanga H, London L. Knowledge and practices relating to acute pesticide poisoning among health care providers in selected regions of Tanzania. *Environmental health insights*. 2017 Feb 10;11:1178630217691268.
- Sayed YE, Youssef W, Alshekhepy HA, Elfeky H. Nurses' Knowledge and Practices regarding Detection and Management of Acute Drug Poisoning at Cairo University Hospitals. *Egyptian Journal of Nursing*. 2015;10(1).
- Awad W, Abbasy ME, Ebrahim AH, Gaffer R, Khan SS. Organophosphorus toxicity awareness among Emergency Department healthcare providers in Tertiary Care Hospital, Qatar. *Journal of Emergency Medicine, Trauma and Acute Care*. 2016 Oct 9;2016(2):109.

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Artificial pancreas system better controls blood glucose levels than current technology

Safety, efficacy benefits for people with type 1 diabetes

Date: October 24, 2019

Source: University of Colorado Anschutz Medical Campus

Summary: A multicenter randomized clinical trial evaluating a new artificial pancreas system --which automatically monitors and regulates blood glucose levels -- has found that the new system was more effective than existing treatments at controlling blood glucose levels in people with type 1 diabetes.

A multicenter randomized clinical trial evaluating a new artificial pancreas system--which automatically monitors & regulates blood glucose levels --has found that the new system was more effective than existing treatments at controlling blood glucose levels in people with type 1 diabetes. The trial, based partly at the University of Colorado Anschutz Medical Campus, was primarily funded by the National Institute of Diabetes & Digestive and Kidney Diseases (NIDDK), part of the National Institutes of Health.

The study showed that the system improved participants' blood glucose control throughout the day and overnight. The latter is a common but serious challenge for children and adults with type 1 diabetes, since blood glucose can drop to dangerously low levels when a person is asleep. The research is published in the *New England Journal of Medicine*.

The artificial pancreas, also known as closed-loop control, is an "all-in-one" diabetes management system that tracks blood glucose levels using a continuous glucose monitor (CGM) and automatically delivers the hormone insulin when needed using an insulin pump. The system replaces reliance on testing by finger-stick or CGM with separate delivery of insulin by multiple daily injections or a pump.

The International Diabetes Closed-Loop (iDCL) Study involves five separate artificial pancreas clinical protocols implemented by 10 research centers, including CU Anschutz. This six-month study was the third phase in the series of trials. It was conducted with participants living their usual day-to-day lives, so the researchers could best understand how the system works in typical daily routines.

"Testing the safety and effectiveness of new technologies in real-world settings is critical to prove the usability of these systems by people with diabetes to achieve a better daily control of their blood glucose levels," said Guillermo Arreaza-Rubín, M.D., director of NIDDK's Diabetes Technology Program and project scientist for the study.

This iDCL protocol enrolled 168 participants age 14 or older with type 1 diabetes. They were randomly assigned to use either the artificial pancreas system called Control-IQ or sensor-augmented pump (SAP) therapy with a CGM and insulin pump that did not automatically adjust insulin throughout the day. Participants had contact with study staff every two to four weeks to download and review device data. No remote monitoring of the systems was done, so that the study would reflect real-world use.

The researchers found that users of the artificial pancreas system significantly increased the amount of time with their blood glucose levels in the target range of 70 to 180 mg/dL by an average of 2.6

hours per day since beginning the trial, while the time in range in the SAP group remained unchanged over six months. Artificial pancreas users also showed improvements in time spent with high and low blood glucose, hemoglobin A1c, and other measurements related to diabetes control compared to the SAP group.

High adherence to device use in both groups and 100% participant retention were important strengths of the study. During the study, no severe hypoglycemia events occurred in either group. Diabetic ketoacidosis occurred in one participant in the artificial pancreas group due to a problem with equipment that delivers insulin from the pump.

The Control-IQ technology was derived from a system originally developed at the University of Virginia, Charlottesville, (UVA) by a team led by Boris Kovatchev, Ph.D., director of the UVA Center for Diabetes Technology with funding support from NIDDK. In this system, the insulin pump is programmed with advanced control algorithms based on a mathematical model that uses the person's glucose monitoring information to automatically adjust the insulin dose. Tandem Diabetes Care has submitted the results to the U.S. Food and Drug Administration for approval to market the Control-IQ system.

"This artificial pancreas system has several unique features that improve glucose control beyond what is achievable using traditional methods," said Kovatchev. "In particular, there is a special safety module dedicated to prevention of hypoglycemia, and there is gradually intensified control overnight to achieve near-normal blood sugar levels every morning."

Kovatchev was co-lead author of the study with colleagues Sue A. Brown, M.D., of UVA and Roy Beck, M.D., Ph.D., from the Jaeb Center for Health Research, Tampa, Florida, which was the coordinating center for the study.

"This study demonstrated that in participants with type 1 diabetes, use of the Control IQ system led to improved glucose control during both the day and night for a wide range of ages including adolescents to older adults," said co-author R. Paul Wadwa, MD, associate professor of pediatrics at the Barbara Davis Center for Childhood Diabetes at CU Anschutz. "We greatly appreciate the involvement of participants and hard work of study teams to complete this important study. We are hopeful that the system studied in this trial will potentially offer a valued treatment option to benefit people with type 1 diabetes."

The study was funded through NIDDK grant UC4DK108483. Tandem Diabetes Care provided the experimental closed-loop systems, supplies, and technical expertise with device issues. The University of Virginia Strategic Investment Fund Project #88 provided institutional and regulatory support.

Story Source:

Materials provided by University of Colorado Anschutz Medical Campus. *Note: Content may be edited for style and length.*

<https://www.sciencedaily.com/releases/2019/10/191024131336.htm>

Increase health benefits of exercise by working out before breakfast

Date: October 18, 2019

Source: University of Bath

Summary: Exercising before eating breakfast burns more fat, improves how the body responds to insulin and lowers people's risk of type 2 diabetes and cardiovascular disease.

According to a new study, published in the *Journal of Clinical Endocrinology and Metabolism*, health scientists at the Universities of Bath and Birmingham found that by changing the timing of when you eat and exercise, people can better control their blood sugar levels.

The six-week study, which involved thirty men classified as obese or overweight and compared results from two intervention groups (who ate breakfast before / after exercise) and a control group (who made no lifestyle changes), found that people who performed exercise before breakfast burned double the amount of fat than the group who exercised after breakfast. They found that increased fat use is mainly due to lower insulin levels during exercise when people have fasted overnight, which means that they can use more of the fat from their fat tissue and the fat within their muscles as a fuel. To test proof-of-principle the initial study involved only men, but future studies will look to translate these findings for different groups including women.

Whilst this did not lead to any differences for weight loss over six weeks, it did have 'profound and positive' effects on their health because their bodies were better able to respond to insulin, keeping blood sugar levels under control and potentially lowering the risk of diabetes and heart disease.

Building on emerging evidence that the timing of meals in relation to exercise can shift how effective exercise is, the team behind this study wanted to focus on the impact on the fat stores in muscles for individuals who either worked out before or after eating and the effect this had on insulin response to feeding.

Dr Javier Gonzalez of the Department for Health at the University of Bath explained: "Our results suggest that changing the timing of when you eat in relation to when you exercise can bring about profound and positive changes to your overall health.

"We found that the men in the study who exercised before breakfast burned double the amount of fat than the group who exercised after. Importantly, whilst this didn't have any effect on weight loss, it did dramatically improve their overall health. "The group who exercised before breakfast increased their ability to respond to insulin, which is all the more remarkable

given that both exercise groups lost a similar amount of weight and both gained a similar amount of fitness. The only difference was the timing of the food intake."

Over the six-week trial, the scientists found that the muscles from the group who exercised before breakfast were more responsive to insulin compared to the group who exercised after breakfast, in spite of identical training sessions and matched food intake. The muscles from those who exercised before breakfast also showed greater increases in key proteins, specifically those involved in transporting glucose from the bloodstream to the muscles.

For the insulin response to feeding after the 6-week study, remarkably, the group who exercised after breakfast were in fact no better than the control group.

Co-author Dr Gareth Wallis of the University of Birmingham added: "This work suggests that performing exercise in the overnight-fasted state can increase the health benefits of exercise for individuals, without changing the intensity, duration or perception of their effort. We now need to explore the longer-term effects of this type of exercise and whether women benefit in the same way as men."

The Physiological Society, The Rank Prize Funds, and The Allen Foundation funded this work.

Story Source:

Materials provided by University of Bath.

Note: Content may be edited for style and length.

<https://www.sciencedaily.com/releases/2019/10/191018080619.htm>

Millions of children worldwide develop asthma annually due to traffic-related pollution

Date: April 10, 2019

Source: George Washington University

Summary: About 4 million children worldwide develop asthma each year because of inhaling nitrogen dioxide air pollution, according to a new study. The study, based on data from 2010 to 2015, estimates that 64 percent of these new cases of asthma occur in urban areas.

About 4 million children worldwide develop asthma each year because of inhaling nitrogen dioxide air pollution, according to a study published today by researchers at the George Washington University Milken Institute School of Public Health (Milken Institute SPH). The study, based on data from 2010 to 2015, estimates that 64 percent of these new cases of asthma occur in urban areas.

The study is the first to quantify the worldwide burden of new pediatric asthma cases linked to traffic-related nitrogen dioxide by using a method that takes into account high exposures to this pollutant that occur near busy roads, said Susan C. Anenberg, PhD, the senior author of the study and an associate professor of environmental and occupational health at Milken Institute SPH.

"Our findings suggest that millions of new cases of pediatric asthma could be prevented in cities around the world by reducing air pollution," said Anenberg. "Improving access to cleaner forms of transportation, like electrified public transport and active commuting by cycling and walking, would not only bring down NO₂ levels, but would also reduce asthma, enhance physical fitness, and cut greenhouse gas emissions."

The researchers linked global datasets of NO₂ concentrations, pediatric population distributions, and asthma incidence rates with epidemiological evidence relating traffic-derived NO₂ pollution with asthma development in kids. They were then able to estimate the number of new pediatric asthma cases attributable to NO₂ pollution in 194 countries and 125 major cities worldwide.

Key findings from the study published in *The Lancet Planetary Health*:

- An estimated 4 million children developed asthma each year from 2010 to 2015 due to exposure to NO₂ pollution, which primarily comes from motor vehicle exhaust.
- An estimated 13 percent of annual pediatric asthma incidence worldwide was linked to NO₂ pollution.
- Among the 125 cities, NO₂ accounted for 6 percent (Orlu, Nigeria) to 48 percent (Shanghai, China) of pediatric asthma incidence. NO₂'s contribution exceeded 20 percent in 92 cities

located in both developed and emerging economies.

- The top 10 highest NO₂ contributions were estimated for eight cities in China (37 to 48 percent of pediatric asthma incidence) and for Moscow, Russia and Seoul, South Korea at 40 percent.

- The problem affects cities in the United States as well: Los Angeles, New York, Chicago, Las Vegas and Milwaukee were the top five cities in the U.S. with the highest percentage of pediatric asthma cases linked to polluted air.

- Nationally, the largest burdens related to air pollution were found in China at 760,000 cases of asthma per year, followed by India at 350,000 and the United States at 240,000.

Asthma is a chronic disease that makes it hard to breathe and results when the lung's airways are inflamed. An estimated 235 million people worldwide currently have asthma, which can cause wheezing as well as life-threatening attacks.

The World Health Organization calls air pollution "a major environmental risk to health" and has established Air Quality Guidelines for NO₂ and other air pollutants. The researchers estimate that most children lived in areas below the current WHO guideline of 21 parts per billion for annual average NO₂. They also found that about 92 percent of the new pediatric asthma cases that were attributable to NO₂ occurred in areas that already meet the WHO guideline.

"That finding suggests that the WHO guideline for NO₂ may need to be re-evaluated to make sure it is sufficiently protective of children's health," said Pattanun Achakulwisut, PhD, lead author of the paper and a postdoctoral scientist at Milken Institute SPH.

The researchers found that in general, cities with high NO₂ concentrations also had high levels of greenhouse gas emissions. Many of the solutions aimed at cleaning up the air would not only prevent new cases of asthma and other serious health problems but they would also attenuate global warming, Anenberg said.

Additional research must be done to more conclusively identify the causative agent within complex traffic emissions, said the researchers. This effort, along with more air pollution monitoring and epidemiological studies conducted in data-limited countries will help to refine the estimates of new asthma cases tied to traffic emissions, Anenberg and Achakulwisut added.

Story Source:

Materials provided by George Washington University.

Note: Content may be edited for style and length.

<https://www.sciencedaily.com/releases/2019/04/190410210003.htm>

Neither vitamin D nor omega-3 supplements can prevent inflammation



Share on PinterestOmega-3 supplements are not as beneficial for health as people once thought.

Are omega-3 supplements as beneficial as researchers once believed? Not when it comes to inflammation, a new study suggests.

Recent studies show that taking supplements to increase vitamin D and omega-3 levels may not reduce systemic inflammation.

The new research, which drew from the VITAL study, aimed to determine the biomarker levels of several inflammation indicators in people either taking or not taking vitamin D and omega-3 fatty acid supplements, or fish oil.

After 1 year, the study found no marked difference in levels between the two groups.

Dr. Karen Costenbader — the director of the Lupus Program in the Division of Rheumatology, Inflammation, and Immunity at the Brigham and Women's Hospital in Boston, MA — is the corresponding author of the study.

The results now appear in the journal *Clinical Chemistry*.

Why are markers of inflammation important?

Inflammation is a key prognostic marker of several life threatening conditions — especially those associated with aging and obesity.

These include cardiovascular disease, heart failure, osteoporosis, some neurodegenerative conditions (including Alzheimer's disease), diabetes, and some cancers.

Many people use vitamin D supplements and fish oil to reduce systemic inflammation and help prevent the onset of such conditions.

However, the researchers behind the new study found that

neither vitamin D nor fish oil can reduce systemic inflammation, and in some cases, inflammation markers were actually higher in people taking these supplements than in those not taking them.

Dr. Costenbader and team looked at interleukin 6 (IL-6), tumor necrosis factor-receptor 2 (TNFR2), and high sensitivity C-reactive protein (hsCRP).

Individually, these markers have pivotal roles in the onset of inflammation. Being able to detect increased levels of these markers in the blood can be a prognostic tool to inform healthcare professionals about a person's levels of inflammation.

What was the purpose of the study?

Many people take vitamin D and fish oil supplements believing that they can help reduce inflammation. However, healthcare professionals may find it difficult to determine how to advise their patients about which supplements to take, and which dosages may be best.

This is because there is a lack of clinical trial data to inform treatment. The VITAL study aimed to provide the clinical data necessary to help healthcare professionals better inform their patients.

The ongoing VITAL study is a randomized, double-blind, placebo-controlled trial in which researchers investigate the effects of vitamin D, omega-3, or both on the levels of IL-6, TNFR2, and hsCRP in the blood.

For this research, the participants took 2,000 international units of vitamin D, 1 gram of omega-3, or both per day. Some received a placebo instead.

The scientists took an initial measurement at the beginning of the trial, which they compared with measurements they took a year later.

In the future, this trial will also investigate the effects of supplementation on the risks of cardiovascular disease and cancer.

What did the study find?

The results revealed that after 1 year of taking these supplements, blood levels of one type of vitamin D (25-OH) and one type of omega-3 (n-3 FA) were 39% and 55% higher in those taking the supplements, respectively, compared with those taking a placebo, in whom changes were minimal.

This suggests that the participants' bodies were successfully absorbing the supplements.

Surprisingly, in those taking vitamin D supplements, levels of IL-6 were 8.2% higher.

Levels of hsCRP were 35.7% higher in people with lower baseline vitamin D, suggesting that those who take supplements because they have low vitamin D levels may actually be increasing their levels of this particular inflammatory marker.

Also, among those receiving omega-3, the levels of hsCRP did decline in those with lower baseline n-3 FA, but not in those with higher fish oil intake.

Conclusively, over 1 year of the study, neither supplement decreased the levels of biomarkers of inflammation.

"While the bottom line is that we didn't see a reduction in markers of inflammation for those who took either supplement, we did see that people whose fish [oil] intake was low at baseline had a reduction in one of the biomarkers of inflammation."

Dr. Karen Costenbader

"It will be interesting and important to see the results of future VITAL analyses, especially those that look at risk of diseases rather than biomarkers."

Although these results seem to suggest no clinical benefit of taking supplementation to reduce systemic inflammation, there were a number of limitations to the trial.

For example, the cohort was a small snapshot of the initial recruits; the team tested only 1,500 of a potential 25,000. Had the cohort been larger, the results may have been clearer.

In addition, they only tested one form of vitamin D and one form of omega-3. Other formulations of these supplements could be more effective at decreasing systemic inflammation.

For these reasons, further investigation is necessary.

<https://www.medicalnewstoday.com/articles/327024.php#1>

New screening method identifies inhibitors of cancer cell metabolism

Date: November 18, 2019

Source: University of California - Los Angeles Health Sciences

Summary: A new screening system developed by scientists leverages redundancy in an important component of a cell - nucleotide metabolism - to help identify new drugs that specifically and potentially block processes that are essential for cancer cell growth.

A new screening system developed by scientists at the UCLA Jonsson Comprehensive Cancer Center leverages redundancy in an important component of a cell -- nucleotide metabolism -- to help identify new drugs that specifically and potentially block processes that are essential for cancer cell growth.

There are many small molecule kinase inhibitors, such as Gleevec, that have been developed to target cancers and other diseases. However, scientists still don't fully understand the full effects of these drugs. Current screening methods do not capture the effects these inhibitors may have on other components of cells, such as biochemical metabolic networks. Using their understanding of metabolism, the team designed a new high-throughput screening system that allows for identification of selective inhibitors of metabolic pathways.

Working with the Molecular Screening Shared Resource at UCLA, the team performed a large scale analyses of 430 kinase inhibitors that have annotated targets within cellular signaling pathways and many of which are currently being used in the clinic. Unexpectedly, multiple inhibitors were found to block nucleotide metabolism and their targets were revealed using mechanistic studies.

This new metabolism-focused screening approach can be a powerful tool in getting new insight into how existing drugs impact metabolic networks and could potentially provide a new understanding into how these drugs are working in the clinic. In addition to characterization of existing compounds that are already being used for treating cancers and other diseases, this screening method could one day also be applied to identify new small molecule modulators of currently un-targeted metabolic pathways -- not only nucleotide metabolism -- which can help lead to new drug discoveries.

Story Source: Materials provided by University of California - Los Angeles Health Sciences.

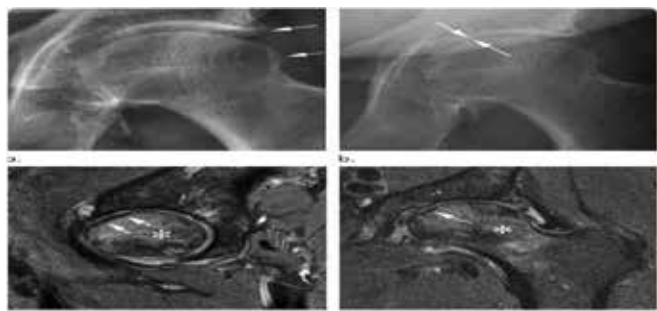
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<https://www.sciencedaily.com/releases/2019/11/191118190853.htm>

Steroid injections for osteoarthritis more may damage joints

Osteoarthritis (OA), also called degenerative joint disease, is the most common chronic condition of the joints. Since the disease is degenerative, it is the single most common cause of disability among older adults, with about 10 to 15 percent of all adults who are more than 60 years old have some degree of osteoarthritis, with more women affected than men.

Currently, osteoarthritis is treated with lifestyle changes, exercise, therapies, and medications, including steroid injections. However, a new study by researchers at Boston University School of Medicine found that steroid injections in the hips and knees of patients with osteoarthritis are more dangerous than previously thought.



Rapid progressive osteoarthritis joint space loss (type 1) & subchondral insufficiency fracture in a 53-year-old man who presented with hip pain. (a) Anteroposterior left hip radiograph shows mild osteophytic changes (arrows) and no joint space loss. This patient was referred for intra-articular corticosteroid injection. (b) Seven weeks after injection, he returned with worsening hip pain. Repeat anteroposterior left hip radiograph shows accelerated loss of joint space (arrows). (c) Sagittal intermediate-weighted fat-suppressed MRI obtained at the same time as b shows a linear subchondral hypointensity representing subchondral insufficiency fracture of the anterior superior femoral head with subtle flattening of the overlying articular surface (arrows). Extensive bone marrow edema extends to the femoral neck. (d) Corresponding coronal intermediate-weighted fat-suppressed MRI enables us to confirm the presence of a subchondral insufficiency fracture (arrow) and depicts the true extent of bone marrow edema. Image Credit: Radiological Society of North America

Potential risks of steroid injections into joints

They discovered that accelerated arthritis and joint damage could be one complication and unintended result of corticosteroid injections.

Steroid injections may lead to joint collapse and may speed up the need for total hip or knee replacement. Usually, corticosteroids are used to stem inflammation in arthritis, and they're usually injected into the joints to relieve pain and swelling.

The study, which was published in the journal *Radiology*, reveals how corticosteroids, though it can relieve pain and inflammation, is tied to complications that can potentially hasten the destruction of the joint.

"We are now seeing these injections can be very harmful to the joints with serious complications such as osteonecrosis, subchondral insufficiency fracture and rapid progressive osteoarthritis," Dr.

Ali Guermazi, chief of radiology at VA Boston Healthcare System and professor of radiology at BUSM, said.

"Intra-articular corticosteroid injection should be seriously discussed for pros and cons. Critical considerations about the complications should be part of the patient consent, which is currently not the case right now," he added.

The study authors reviewed existing literature on the complications of steroid injections. They have determined four main adverse effects of the treatment, namely rapid joint destruction with bone loss, complications from osteonecrosis or bone tissue death, subchondral insufficiency fractures like stress fractures, and accelerated osteoarthritis progression with loss of the joint space.

What doctors can do?

The researchers recommend that when physicians prescribe steroid injections, there should be consent forms that include injection-associated risks. The consent should include that the injection may lead to rapid progressive osteoarthritis and joint collapse. This way, patients are aware of the risks involved in the treatment.

They also suggest that the radiologic community should participate in research on the topic. This way, they can improve practice and understand the potential at-risk conditions before the patient receives treatment.

Moreover, physicians should carefully inspect and examine patients with mild or no osteoarthritis on radiology results, who were referred to receive these injections. The physician should also consider telling younger patients of potential risks of the injections, and should opt for other therapies and lifestyle changes first.

"Physicians do not commonly tell patients about the possibility of joint collapse or subchondral insufficiency fractures that may lead to earlier total hip or knee replacement. This information should be part of the consent when you inject patients with intra-articular corticosteroids," Dr. Guermazi said.

What is osteoarthritis?

Osteoarthritis (OA) is the most common form of arthritis, and it's more common in women than in men. It is one of the most frequent causes of physical disability among seniors.

The condition happens when the cartilage, which works by providing cushion at the ends of the bones in the joints, wears away and breaks down. As a result, the bones rub against each other, causing severe pain and swelling.

The most common signs and symptoms of osteoarthritis include pain, decreased range of motion, decreased flexibility, swelling, and stiffness. The common risk factors include obesity, old age, and family history.

Treatment of osteoarthritis focuses on increasing physical activity, muscle strengthening exercises, taking pain killers and anti-inflammatory medicines, supportive devices, and surgery.

In the United States, about 30 million adults are living with osteoarthritis.

Journal reference:

Kompel, A., Roemer, F., Murakami, A., Diaz, L., Crema, M., and Guermazi, A. (2019). Intra-articular Corticosteroid Injections in the Hip and Knee: Perhaps Not as Safe as We Thought? *Radiology*.

<https://pubs.rsna.org/doi/10.1148/radiol.2019190341>

Stressed to the max? Deep sleep can rewire the anxious brain

A sleepless night can trigger up to a 30 percent rise in emotional stress levels, new study shows

Date: November 4, 2019

Source: University of California - Berkeley

Summary: Researchers have found that the type of sleep most apt to calm and reset the anxious brain is deep sleep, also known as non-rapid eye movement (NREM) slow-wave sleep, a state in which neural oscillations become highly synchronized, and heart rates and blood pressure drop.



When it comes to managing anxiety disorders, William Shakespeare's Macbeth had it right when he referred to sleep as the "balm of hurt minds." While a full night of slumber stabilizes emotions, a sleepless night can trigger up to a 30% rise in anxiety levels, according to new research from the University of California, Berkeley.

UC Berkeley researchers have found that the type of sleep most apt to calm and reset the anxious brain is deep sleep, also known as non-rapid eye movement (NREM) slow-wave sleep, a state in which neural oscillations become highly synchronized, and heart rates and blood pressure drop.

"We have identified a new function of deep sleep, one that decreases anxiety overnight by reorganizing connections in the brain," said study senior author Matthew Walker, a UC Berkeley professor of neuroscience and psychology. "Deep sleep seems to be a natural anxiolytic (anxiety inhibitor), so long as we get it each and every night."

The findings, published today, Nov. 4, in the journal *Nature Human Behaviour*, provide one of the strongest neural links between sleep and anxiety to date. They also point to sleep as a natural, non-pharmaceutical remedy for anxiety disorders, which have been diagnosed in some 40 million American adults and are rising among children and teens.

"Our study strongly suggests that insufficient sleep amplifies levels of anxiety and, conversely, that deep sleep helps reduce such stress," said study lead author Eti Ben Simon, a postdoctoral fellow in the Center for Human Sleep Science at UC Berkeley.

In a series of experiments using functional MRI and polysomnography, among other measures, Simon and fellow researchers scanned the brains of 18 young adults as they viewed emotion-

ally stirring video clips after a full night of sleep, and again after a sleepless night. Anxiety levels were measured following each session via a questionnaire known as the state-trait anxiety inventory.

After a night of no sleep, brain scans showed a shutdown of the medial prefrontal cortex, which normally helps keep our anxiety in check, while the brain's deeper emotional centers were overactive.

"Without sleep, it's almost as if the brain is too heavy on the emotional accelerator pedal, without enough brake," Walker said.

After a full night of sleep, during which participants' brain waves were measured via electrodes placed on their heads, the results showed their anxiety levels declined significantly, especially for those who experienced more slow-wave NREM sleep.

"Deep sleep had restored the brain's prefrontal mechanism that regulates our emotions, lowering emotional and physiological reactivity and preventing the escalation of anxiety," Simon said. Beyond gauging the sleep-anxiety connection in the 18 original study participants, the researchers replicated the results in a study of another 30 participants. Across all the participants, the results again showed that those who got more nighttime deep sleep experienced the lowest levels of anxiety the next day.

Moreover, in addition to the lab experiments, the researchers conducted an online study in which they tracked 280 people of all ages about how both their sleep and anxiety levels changed over four consecutive days.

The results showed that the amount and quality of sleep the participants got from one night to the next predicted how anxious they would feel the next day. Even subtle nightly changes in sleep affected their anxiety levels.

"People with anxiety disorders routinely report having disturbed sleep, but rarely is sleep improvement considered as a clinical recommendation for lowering anxiety," Simon said. "Our study not only establishes a causal connection between sleep and anxiety, but it identifies the kind of deep NREM sleep we need to calm the overanxious brain."

On a societal level, "the findings suggest that the decimation of sleep throughout most industrialized nations and the marked escalation in anxiety disorders in these same countries is perhaps not coincidental, but causally related," Walker said. "The best bridge between despair and hope is a good night of sleep."

Co-authors of the study are Aubrey Rossi and Allison Harvey, both at UC Berkeley.

<https://www.sciencedaily.com/releases/2019/11/191104124140.htm>

Diabetes: Why some anti-inflammatories may increase risk

Doctors prescribe anti-inflammatory drugs long or short term to treat a range of conditions from allergies to arthritis. But could some of these drugs actually increase the risk for another chronic condition — diabetes?



Regular doses of glucocorticoids may increase the risk of diabetes, some researchers argue.

Glucocorticoids^{Trusted Source} are a type of anti-inflammatory drug that doctors often prescribe for the treatment of various conditions, including allergies, asthma, and rheumatic conditions.

As with most medications, glucocorticoids can also have some adverse effects. In the case of these drugs, possible unwanted effects that people report include skin dryness and discoloration, shortness of breath, and problems with sleep.

At higher doses, some individuals have also reported depressive moods and high blood pressure. Now, new research from Sapienza University of Rome in Italy and the University of Oxford in the United Kingdom suggests that these anti-inflammatory drugs could have long-term consequences for health.

In a poster presentation at The Society for Endocrinology Annual Conference — which this year takes place in Brighton, U.K. — study authors Dr. Riccardo Pofi and Prof. Jeremy Tomlinson have explained that glucocorticoids may increase a person's risk of diabetes.

Drugs impact blood sugar regulation

For their study, Dr. Pofi, Prof. Tomlinson, and team recruited 16 healthy male participants. To these participants, they administered either 10- or 15-milligram doses of a glucocorticoid (prednisolone) for 1 week.

These doses, the researchers explain, are the doses that doctors

usually prescribe to their patients.

At the end of a week of treatment, the investigators measured both regular biomarkers, such as fasting blood sugar levels and weight, and metabolic markers in the participants.

They found that while most biomarkers — including blood sugar levels — remained unaffected by the drug, the treatment appeared to impact blood sugar regulation mechanisms negatively. In the long term, the investigators note, this may lead to a heightened risk of diabetes.

"This is the first study to examine the very short-term metabolic effects of commonly prescribed doses of glucocorticoids on healthy men and indicates that, even at these lower doses, glucose metabolism is impaired, suggesting an increased risk of diabetes with continued treatment," says Dr. Pofi.

The researcher argues that the current findings point to a stringent need to consider anti-inflammatory drug dosage very carefully, to make sure that the benefits outweigh the potential risks.

"This [research] suggests that we need to more accurately assess [glucocorticoid] use in patients to prevent and reduce the undesired effects, especially in patients for which steroid treatment is essential for life."

Dr. Riccardo Pofi

Going forward, the investigators point to a need to conduct larger, more conclusive studies to confirm the validity of the current findings.

Moreover, Dr. Pofi is planning to investigate whether there are any ways of reducing or preventing the metabolic impact of glucocorticoid treatment.

<https://www.medicalnewstoday.com/articles/326999.php#1>

World Diabetes Day-2019

Orion Pharma Ltd. observed World Diabetes Day on 14th November, 2019 by launching a diabetes screening campaign at Orion House. The day long campaign followed random diabetes test, blood pressure monitoring, BMI categorization and lifestyle consultation to all concerns of Orion Group. All employees took service from the program through courteous care from the Medical Services Department team. Orion Pharma Ltd. is one of the oldest and most influential pharma companies of the country. The program was a ruminant of Orion towards all of its members. The diabetes program focused this year's theme –“Diabetes: Protect your Family”. The campaign faced immense success and appreciation from all spheres.



Medical Services Department (MSD) of Orion Pharma Ltd. successfully arranged momentous number of Scientific Seminar, Round Table Meeting & Clinical Meeting in different venues of Bangladesh.

SCIENTIFIC SEMINAR

Orion Renal & General Hospital, Kalabagan, Dhaka

A Scientific Seminar on “Fluid Management of Burn Patient” was arranged by the Orion Renal & General Hospital, Kalabagan on 09th November, 2019 in Hospital Conference Room. Dr. A. B. M. Borhan Uddin, Evaluator, Health Emergency Operation Centre & Control Room, DGHS, Mohakhali, Dhaka appeared as the Key Note Speaker & DR. (Lt. Col) Md. Rowshanul karim (Rtd.) adorned the seat of Chairperson. All Doctors are cordially attended the session & It was concluded with luscious refreshment sponsored by OPL.



Kamalganj Thana Health Complex, M.Bazar

A Scientific Seminar on “Impurities of Present Pharmaceuticals API” was arranged by the Kamalganj THC, M.Bazar on 21th October, 2019 at Hospital premises. Dr. Mohammad Eyahia, UHFPO were present as the Chairperson and he spoke about the topic. All Consultants are highly appreciated about the program.



Khulna Medical College & Hospital, Khulna

On 28th November, 2019 A Scientific Seminar was arranged by the Gastroenterology Department of Khulna Medical College & Hospital, Khulna at the Conference Room on “Hyperacidity & Its Management”. Prof. Dr. Abdul Ahad, Principal & Head, Department of Gastroenterology were present as the Chairperson and he spoke about the management of hyperacidity.

ROUND TABLE MEETING

Khulna Medical College & Hospital, Khulna

A RTM was arranged on 21th November, 2019 by the Department of Pediatrics of Khulna Medical College & Hospital, Khulna. Prof. Dr. A. K.M. Mamunur Rashid, Head, Department of Pediatrics enlightened the program as the Chairperson. All members of the departments were cordially attended the session. It was concluded with luscious refreshment sponsored by OPL.

AT A GLANCE



Orion Pharma Ltd. is proudly announcing the 20th glorious anniversary of its valuable publication **The Orion Medical Journal**. On behalf of Orion Pharma Ltd. Dr. Md. Abu Kausar is handing over the Medical Journal to honorable Chief advisor **Prof. Dr. ABM Abdullah**. Former Chairman, Department of Medicine, Bangabandhu Sheikh Mujib Medical University.

Dr. Khalid Husain Haque

MBBS (Calcutta) DTCD (Dhaka)
D Card (Dhaka)
Chest Physician & Cardiologist

*It's a good endeavor with a very
impressive and competent team. Keep
it up my good wishes*

*Dr. Khalid Husain
Haque
Dharan, Nepal*

Address: 95, Chataraline, Dharan-12, Sunsari, Nepal



Dr. Khalid Husain Haque, a Chest Physician and Cardiologist from Nepal is receiving **The Orion Medical Journal** from Mr. Md. Ahshan Sharif, Assistant Manager, International Marketing Department of Orion Pharma Ltd.



On behalf of Orion Pharma Ltd. Bijayata Giri is handing over **The Orion Medical Journal** to Dr. Santosh Shah, Associate Professor, Universal College of Medical Science (UCMS) in Nepal.



Dr. Mala Banik, Associate Professor, Department of Obs & Gynae, Sir Salimullah Medical College is receiving The Orion Medical Journal from Mr. Abdullah Al Arafat, Senior Officer, Medical Services Department of Orion Pharma Ltd.

<http://journal-index.org/ISSN-validator/issn-validator.php>



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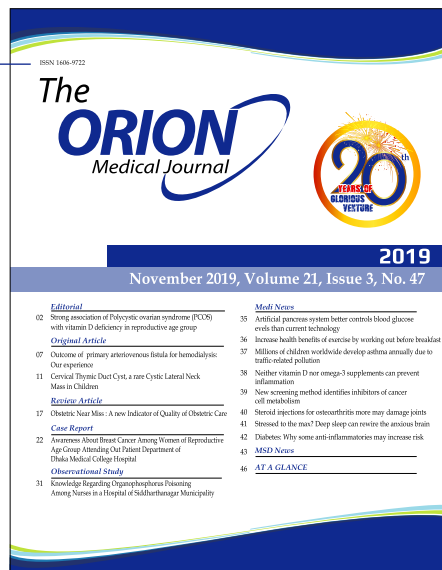
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A randomized & double blind clinical study was conducted on 414 Chinese patients for six weeks. In this trial, Rosuvastatin showed superiority to Atorvastatin for lowering LDL-C in high risk patients with dyslipidaemia.

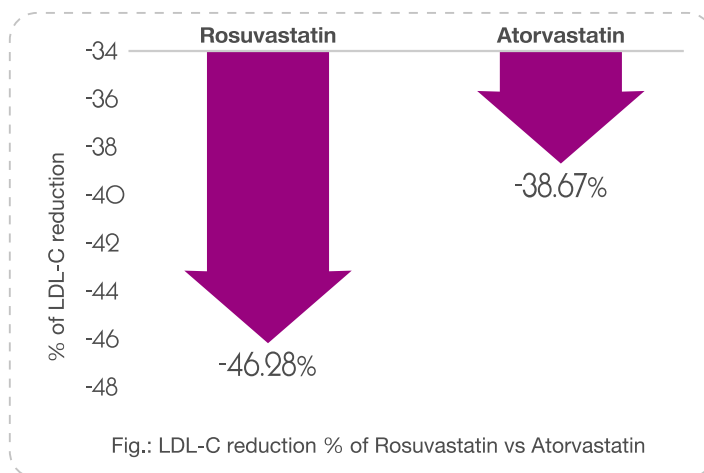
Ref.: Current Medical Research and Opinion, 2017

* High risk patients: LDL-C range ≥ 100 - <160 mg/dL

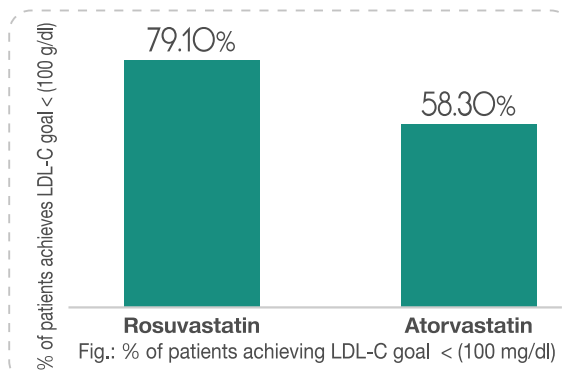
Rely On...
ROVEX
rosuvastatin 5 & 10 mg

More
Potent & Safer
3G Statin

Significantly reduces LDL-C than Atorvastatin¹



Better achievement of LDL-C treatment goal than Atorvastatin¹



Dosage & Administration:

Starting dose of Rosuvastatin is 5 mg once daily. If not controlled doses can be increased upto 20 mg/day.

Ref.: 1. Current Medical Research and Opinion, 2017, Efficacy and safety of rosuvastatin versus atorvastatin in high-risk Chinese patients with hypercholesterolemia: a randomised, double blind, active-controlled study

Prevalence of Dermatophytic infection in Bangladesh is **38.75%**.¹

Among them, Dermatophyte-infected cases,

- 21–40 years age group are **51.62%**
- 41–60 years age group are **29.03%**

Moreover,

- Males are affected **58.06%**
- Females are affected **41.94%**

Onychomycosis is a fungal infection of nail & it represents **50%** of nail diseases.²

- Adult population are affected about **10%**
- Males are affected more often than females



Terbinafine is approved by FDA for treatment of Onychomycosis³



BAD suggests Terbinafine as **the first option** for the treatment of Onychomycosis in both adults & children⁴

To ensure a perfect solution against fungal infections,

ORION
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Introduces

Terbiderm

Terbinafine 250 mg Tablet

SMART choice in difficult-to-treat fungal infections



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