JOURNAL

ARMY MEDICAL COLLEGE CUMILLA

ISSN: 2663-158X

eISSN: 2663-1598

Vol 03 | No 02 | July 2020

JAMCCu

https://www.amccomilla.edu.bd/jamcu

Editorial

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Khanom T

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An offcial Journal of Army Medical College Cumilla

BM&DC Approved

Army Medical College Cumilla Journal

Vol-03. No-2, July-2020

An official Journal of Army Medical College Cumilla, Cumilla Cantonment, Cumilla, Bangladesh

Editorial Board

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Editorial

Evaluation of Testing Protocols Can Diminish the Dilemma of Imperfect Specificity of Covid-19 Rapid Antigen Test in Both Symptomatic and Asymptomatic Patient.

Khanom T

Direct detection of SARS-CoV-2 viral proteins (antigens) in nasal swabs and other respiratory secretions using lateral flow immunoassays (also known as rapid diagnostic tests, RDTs) offers a faster and less expensive method to test for SARS-CoV-2 than the reference method, RT-PCR.As the dilemma that most detected cases represent false positives rather than true infections might require a two-tier approach with molecular confirmation,affecting the practicality and acceptance of such a strategy, so more and more research is indispensable.

Who guidance offers recommendations on the priority uses of antigen-detecting rapid diagnostic tests (Ag-RDTs) in specific populations and settings, including (i) for primary case detection in symptomatic individuals suspected to be infected and asymptomatic individuals at high risk of COVID-19, (ii) for contact tracing, (iii) during outbreak investigations and (iv) to monitor trends of disease incidence in communities. Ag-RDTs meeting minimum performance requirements can be used outside of clinical and laboratory settings, including in communities, by trained operators in accordance with instructions. The guidance additionally provides recommendations on implementation, product selection and storage.[1]

A study by Rosanna Peeling and Colleagues shows, after the acute phase when viral load decreases, use of Ag-RDTs might lead to high rates of false negatives, suggesting that the tests should be replaced by a combination of molecular and serological tests. However, Ag-RDTs, when used appropriately, are promising tools for scaling up testing and ensuring that patient management and public health measures can be implemented without delay.[2]

Thomas weitze and colleagues suggest alternative strategies to optimise the use of Ag-RDTs in asymptomatic populations .They evaluated an Ag-RTD to screen asymptomatic individuals before surgery or childbirth. People were tested in parallel with Ag-RDTs and a commercial RT-PCR using separate nasopharygeal swabs. Those individuals tested negative by RT-PCR; however 8·7% were initially positive by the Ag-RDT . Then they examined alternatives to improve test accuracy. First, they repeated the Ag-RDT of positive samples using the same dilution buffer to calculate the average index, resulting in a reduction of false positives to 5·5%. Second, they raised the cutoff for positivity from 1·0 (recommended by the manufacturer) to 3·0, on the basis of a receiver operating characteristic (ROC) curve. To perform the ROC analysis, 30 RT-PCR-positive samples from patients with early COVID-19 from a previous study were included.This approach reduced false positives to 2·2%, and specificity increased significantly. The combination of both strategies showed the highest specificity (99·2%).[3]

The clinical performance of diagnostic tests largely depends on the circumstances in which they are used. Accumulation of data on the performance of antigen tests in different situations has helped to guide the use of these tests as screening tests in asymptomatic people to detect or exclude SARS-CoV-2 infection. [4]RAT is designed against the 'N' gene which is relatively well conserved in any of the variants and so is less likely to escape. [5]

A study conducted by monica pena and colleagues their results support the fact that RAT might have a significant impact on the identification of asymptomatic carriers in areas that lack suitable laboratories to perform SARS-CoV-2 real-time RT-PCR diagnostics, or the results take more than 24–48 h, as well as zones with high traffic of individuals such as border/customs, airports, interregional bus, train stations or in any mass testing campaign requiring rapid results.[6]

Thomas von ahnen and others shows that RAT can be an important tool for screening for SARS-CoV-2 COVID-19 at the point of care. With low cost and resource needs, high specificity, and high sensitivity, RAT are performed best during the early stages of SARS-CoV-2 COVID-19, when the viral loads are high.[7]

Last of all it is high time to emphasise that, more and more studies are necessary to confirm and suggest that the dilemma of

imperfect specificity of Ag-RDTs in both symptomatic and asymptomatic populations can be diminished significantly by evaluating testing protocols that maintain the capacity of getting rapid results while increasing the accuracy of the tests.

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Original Article

Life-Long Suicidal Ideation Among the Urban Adolescents of Bangladesh

Amin F [1] , Khan MBU [2] , Begum A [3] , Shakil M [4]

Abstract

Introduction: Worldwide, suicide is the second leading cause of death among 15-19 years age group. Suicidal behavior including Suicidal ideation, suicidal threats, and suicide attempts has been increasingly identified as an important clinical and public health problem among adolescents. Only a few studies have explored suicidal Ideation among the urban adolescents in Bangladesh. **Objective:** The objectives of this study were to gather comprehensive information about suicidal Ideation among the urban adolescents in respect of its nature and also to assess the part playing factors considering six important domains of adolescent life that is socio-demographic, individual, family, peer, school, and community characteristics domains. **Materials and Methods:** A Cross sectional descriptive study method was followed. Primary sampling unit (schools) was selected purposively, from which sections of the classes was selected by simple random sampling method and then cluster sampling technique was followed in the specific sections of classes to select the ultimate sample (n=294) and is representative of 8th to12th grade public and private school students in Dhaka city. **Results:** Life time Suicidal ideation was reported by 14.3% of the students. Female students constituted 72.8 of total population. Mean age was 15.5±1.6 and higher (16.1±1.6) among the adolescents having suicidal ideation. Nonphysical sexual harassment (p=0.049), possible depression (p=0.001), sometimes parental monitoring of school result (p=0.040), fewer (1 to 2) helpful close friend (p=0.013) were the main predictors for the life time suicidal ideation among the adolescents. **Conclusion:** One seventh of the total adolescents had life time suicidal ideation and those who had life time suicidal ideation were older than those who did not have the ideation. Nonphysical sexual harassment, possible depression, sometimes parental monitoring of school result, having few helpful close friends was found to be the main predictor for the suicidal ideation.

Key Words: Awareness, Suicidal Ideation, Urban Adolescents.

Introduction

Introduction

"Suicidal ideation" refers to thoughts of engaging in behavior intended to end one's life[1]; and suicidal behavior is a broad term used to encompass several aspects extending from thinking about killing one self ("suicidal ideation"), to developing a plan, obtaining the means to do so, and finally carrying out the plan[2]. Worldwide, suicide is the second leading cause of death among 15-19 years age group[3]. Suicidal ideation, suicidal threats, and suicide attempts among children and adolescents are more common than the completed act[4]. Consequently, Suicidal behavior has been increasingly identified as an important clinical and public health problem among adolescents[5]. It is estimated that some 804,000 people killed themselves in 2012 worldwide. It is the 15th most common cause of death and it is the second highest for young people age 15-29. Indeed 3/4th of these deaths come from low or middle-income countries[6]. WHO adopted the first-ever Mental Health Action Plan, suicide prevention is an integral part of the plan, with the goal of reducing the rate of suicide in countries by 10% by 2020[6]. Unfortunately, only 28 countries out of 194 nations that are member of WHO have national suicide prevention plan. And unless the issue is

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Received: March 2021 **Accepted:** June 2021

brought to the fore, the problem will remain largely unaddressed. The word 'suicide' came from the Latin word 'suicidium' meaning Kill oneself. Such actions or thinking of such actions are typically characterized as being made out of despair, or attributed to some underlying mental disorder which includes depression, bipolar disorder, schizophrenia, alcoholism and drug abuse. Financial difficulties, interpersonal relationships and other undesirable situations also play a significant role. This research is an effort to gather comprehensive information about suicidal Ideation among the urban adolescents in respect of its nature and also to assess what role health and social scientists may play in preventing suicide in our country.

Importance of suicidal behavior

Globally speaking, mortality due to suicide has increased by about 60%, in the last 45 years. This trend is observed in both developed and developing countries. During these 45 years, the highest suicide rates have shifted from the elderly towards younger subjects (35-45 year olds and even 15-25 year olds, in some places), to the point that for the latter, suicide is among the 5 top causes of death for both men and women[7].

Suicidal behavior in adolescents & its global trend

Recently studies using the Global School-based Health Survey (GSHS) have examined the occurrence and correlates of suicidal ideation and behaviors in the Seychelles, Kenya, Botswana, Namibia, Zimbabwe, Tanzania, and Uganda. These studies have found that 16%, and 11.2% of students had suicidal thoughts from the Seychelles, and Tanzania endorsed having suicidal ideation. This is comparable to the rates found in high income countries (HICs; 12.5%–16.7%). Other African countries, such as Kenya, Uganda, Botswana, and Zimbabwe, have rates that are noticeably higher than in HICs[8]. Global suicide rates have shown a steady increase over the last 50 years and are projected to increase to 1.53 million by the year 2020[9]. In countries like Finland and England suicide prevention programmes have successfully lowered suicide rates. But global suicide rates continued to rise. This may be due to the fact that while there have been gains in suicide prevention in developed countries it has been offset by huge increases in suicides in many developing countries, such as China and India[10].

Suicidal behavior developing country trend

A cross-national study in the developing countries comparing suicidal behavior among adults found life-time prevalence of suicidal ideation ranging from 2.1 to 18.5/100[11].A study from Delhi has reported an annual prevalence of 11.9% suicidal ideation among 12- to19-year-old school going adolescents. Studies from other developing countries shows varying prevalence of suicidal ideation (18.4% Guyana; 36 17% Brazil; 37 19.3% 6 months China 38) among adolescents[12]. Annual prevalence of suicidal ideation reported from the latest US Youth Risk Behavior Surveillance (YRBS) is 16.9%[13] which surveys a slightly younger age group (12–21). A recent cross national survey comparing prevalence rates for suicidal ideation, plans and attempts among adults has reported that estimates in low- and middle-income countries are similar to those in high-income countries[1].

Suicidal behavior Bangladesh trend

According to Yogeeta , there were an average of 600 suicides per month during 1972-1988 in Bangladesh and increased to 984 per month during 1992-1993[14]. Forensic Medicine Department of Dhaka Medical College indicated that committed suicides have been increased from 12 per month in 1989 to 18 per month in 1998. Study conducted by ICDDR,B (1980-1996) has shown that suicidal death is more common in adolescence (ESCAP, 1998). Consequently, deaths from suicide are only a small part of a much larger problem- suicidal behavior[15]. According to the Bangladesh Police the number of suicide deaths was 9,663; 9,642; 10,108 and 10,129 each year from 2010 to 2013 respectively. In the last seven months of the year 2014, the number recorded was 6503. All these records reflect the heightened trend of suicidal behavior in Bangladesh[16]. Suicide is estimated to contribute to 6% of all deaths worldwide among young people[3]. The growing incidence of suicide has heightened awareness for need of prevention, and prevention will require a greater understanding of its origins[17]. Identifying suicidal behavior and related factors represent a keystone in understanding and preventing suicides. The current study is one of the very few study in Bangladesh to examine aspects of suicidal ideation in school aged adolescent representative sample. It addressed the dearth of information about suicidal behavior among Bangladeshi adolescents, and contributes to understanding how related factors operate across multiple domains. It also offered a baseline for policy makers to undertake nationwide study and formulate an appropriate model for suicide prevention among Bangladeshi adolescents.

Aims & Objectives:

- To estimate the proportion of adolescents having suicidal behavior.
- To find out the relationship between suicidal behavior among adolescents and socio-demographic characteristics, individual characteristics, family domain, school domain, peers domain and community domain characteristics.

Material & Methods

Design

This cross-sectional study was designed to assess the extent of Suicidal Ideation and its related factors among the adolescents of urban area of Dhaka city. The twelve months study from July 2014 to June 2015 was conducted in three purposively selected schools, one from Hazaribag, one from Azimpur and one from Tejgoang area. Two Government schools and one Non-government school were selected to ensure both governmental and non-governmental representation. Adolescent students of class VIII to XII of selected schools, whom provided consent, agreed by their parents to be interviewed and who were present at the day and time of interview was the study population. Here the desired sample size by using appropriate statistical formula $n=Z^2pq/d^2$ [18] was 264 but due to following Custer sampling technique at the schools, sample size stood 294. Primary sampling unit (schools) was selected purposively. From primary unit sections of the classes was selected by simple random sampling method and then cluster sampling technique was followed in the specific sections of classes.

Instrument

A semi-structured self administered questionnaire was prepared by using the selected variables according to objectives including some scales related to study, and part of it was adopted from WHO recommended multisite suicidal prevention survey questionnaire[7].

Tools used

AAUW Sexual Harassment Survey Scale[18].

Illinois Bully Scale[19].

Kutcher Adolescent Depression Scale[20].

Analysis:

Data analysis was done by using SPSS (statistical package for social science) version 22 statistical software for windows. In descriptive analysis frequency, percentage, mean, standard deviation and 95% confidence interval were done. For Inferential analysis relationships of the categorical data were assessed using Chi-square test and Fisher's exact test and predictors of suicidal behavior were evaluated through using binary logistic regression model for multivariate analysis.

Figure 1: Distribution of the respondents according to their life time suicidal behavior

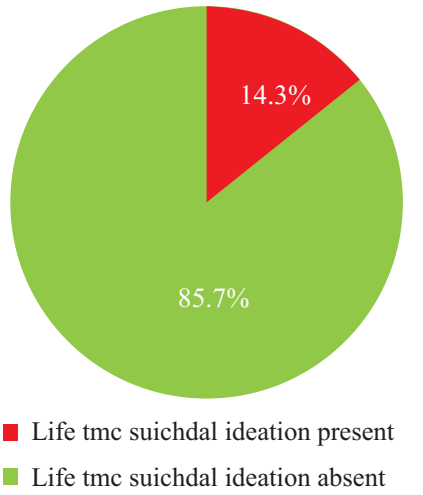

Table 1: Distribution and relationship of the respondents having life time suicidal ideation by socio- demographic characteristics

Variables	Life time suicidal ideation				Overall	
	Yes *(n=42)*		No *(n=252)*		*(n=294)*	
	%	95% CI	%	95% CI	%	95% CI
Sex						
Male	42.9	27.9, 57.9	24.6	19.3, 29.9	27.2	22.1, 32.3
Female	57.1	42.1, 72.1	75.4	70.1, 80.7	72.8	67.7, 77.9
$\chi2 = 6.056$, $p = 0.014$*						
Age *(Mean±SD)*	16.1±1.6		15.4±1.6		15.5±1.6	
School Grade						
Eight	19.0	7.1, 30.9	22.2	17.1, 27.3	21.8	17.1, 26.5
Nine	11.9	2.1, 21.7	13.5	9.3, 17.7	13.3	9.4, 17.2
Ten	26.2	12.9, 39.5	39.3	22.3, 45.3	37.4	31.9, 42.9
Eleven	26.2	12.9, 39.5	15.5	11.0, 20.0	17.0	12.7, 21.3
Twelve	16.7	5.4, 27.9	9.5	5.9, 13.1	10.5	7.0, 14.0
Religion						
Islam	92.9	85.1, 100.7	96.8	94.6, 98.9	96.3	94.1, 98.5
Hinduism	7.1	0.7,-14.9	3.2	1.0, 5.4	3.7	1.5, 5.9
$\chi2 = 1.574$ P 0.197						

Father's educational status

Illiterate	7.1	0.7,-14.9	3.6	1.3, 5.9	4.1	1.8, 6.4
Only sign	4.8	1.7,-11.3	18.7	13.9, 23.5	16.7	12.4, 21.0
Primary	23.8	10.9, 36.7	29.0	23.4, 34.6	28.2	23.1, 33.3
SSC	28.6	14.9, 42.3	34.9	29.0, 40.8	34.0	23.1, 33.3
HSC & above	35.7	21.2, 50.2	13.9	9.6, 18.2	17.0	12.7, 21.3

$\chi2 = 15.115$, $p = 0.003$*

Mother's educational status

Illiterate	2.4	2.2,-7.0	6.0	3.1, 8.9	5.4	2.8, 8.0
Only sign	16.7	5.4, 28.0	19.4	14.5, 24.3	19.0	14.5, 23.5
Primary	26.2	12.9, 39.5	31.3	25.6, 37.0	30.6	25.3, 35.9
SSC	33.3	19.0, 47.6	35.7	29.8, 41.6	35.4	29.9, 40.9
HSC & above	21.4	9.0, 33.8	7.5	4.2, 10.8	9.5	6.1, 12.9

$\chi2 = 7.068$, $p = 0.121$

Father's occupation (past and present)

Service	47.6	32.5, 62.7	45.6	39.5, 51.7	45.9	40.2, 51.5
Business	50.0	34.9, 65.1	52.4	46.2, 58.6	52.0	46.3, 57.7
Unemployed	2.4	2.2,-7.0	2.0	0.3, 3.7	2.0	0.4, 3.6

$\chi2 = 0.400$, $p = 0.946$

Mother's occupation (past and present)

Service	14.3	3.7, 24.9	15.5	11.0, 20.0	15.3	11.2, 19.4
Business	7.1	0.7,-14.9	1.2	0.1,-2.5	2.0	0.4, 3.6
Housewife	78.6	66.2, 91.0	83.3	78.7, 87.9	82.7	78.4, 87.0

$\chi2 = 5.142$, $p = 0.064$

Number of sibling

Single	4.8	1.7,-11.3	5.6	2.8, 8.4	5.4	2.8, 8.0
Two	31.0	17.0, 45.0,	33.7	27.9, 39.5	33.3	27.9, 38.7
Three or more	64.3	49.8, 78.8	60.7	54.7, 66.7	61.2	55.6, 66.8

$\chi2 = 0.167$, $p = 0.959$

Number of parents

Both parents	88.1	78.3, 79.9	93.7	90.7, 96.7	92.9	90.0, 95.8
Single parent	4.8	1.7,-11.3	4.8	2.2, 7.4	4.8	2.4, 7.2
Have step father/mother	7.1	0.7,-14.9	0.8	0.3,-1.9	1.7	0.2, 3.2
Orphan	N/A	N/A	0.8	0.3, 1.9	0.7	0.3, 1.7

$\chi2 = 6.688$, $p = 0.064$

Type of family

Nuclear Family	90.5	81.6, 99.4	84.5	80.0, 89.0	85.4	81.4, 89.4
Joint Family	4.8	1.7,-11.3	13.5	9.3, 17.7	12.2	8.5, 15.9
Without parents	4.8	1.7,-11.3	2	0.3, 3.7	2.4	0.7, 4.1

$\chi2 = 3.801$, $p = 0.156$

Monthly Family Income

<10000 Tk	10.5	0.8, 20.2	23.4	17.7, 29.1	21.5	16.4, 26.6
≥10000 19999 Tk	31.6	16.8, 46.4	30.1	23.9, 36.3	30.4	24.7, 36.1
≥20000 Tk	57.9	42.2, 73.6	46.4	39.6, 53.2	48.2	41.9, 54.4

$\chi2 = 3.456$, $p = 0.173$

Type of housing

Kachahouse	N/A	N/A	2.0	0.3, 3.7	1.7	0.2, 3.2
Tin-made	4.8	-1.7, 11.3	11.5	7.6, 15.4	10.5	7.0, 14.0
Semi pucca	14.3	3.7, 24.9	15.9	11.4, 20.4	15.6	11.5, 19.7
Pucca Building	81.0	69.1, 92.7	70.6	65.0, 76.2	72.1	67.0, 77.2

$\chi2 = 2.084$, $p = 0.534$

Duration of watching television daily

Not exposed	11.9	2.1, 21.7	7.5	4.2, 10.8	8.2	5.1, 11.3
Mild exposed	33.3	19.0, 47.6	34.9	29.0, 40.8	34.7	29.3, 40.1
Moderately exposed	40.5	25.7, 55.3	51.2	45.0, 57.4	49.7	44.0, 55.4
Highly exposed	14.3	3.7, 24.9	6.3	3.3, 9.3	7.5	4.5, 10.5

$\chi2 = 4.729$, $p = 0.193$

Duration of internet use daily

Not exposed	57.1	42.1, 72.1	72.2	66.7, 77.7	70.1	64.9, 75.3
Mild exposed	19.0	7.1, 30.9	17.1	12.5, 21.7	17.3	13.0, 21.6
Moderately exposed	11.9	2.1, 21.7	7.1	3.9, 10.3	7.8	4.7, 10.9
Highly exposed	11.9	2.1, 21.7	3.6	1.3, 5.9	4.8	2.4, 7.2

$\chi2 = 7.543$, $p = 0.056$*

Marital status

Yes	0.0	N/A	1.2	-0.1, 2.5	1.0	-0.1, 2.1
No	100.0	N/A	98.8	97.5, 100.1	99.0	97.9, 100.1

$p = 1.000$

Table 2: Distribution and relationship of the respondents having life time suicidal ideation by their individual domain characteristics

Variables	Life time suicidal ideation				Overall	
	Yes *(n=42)*		No *(n=252)*		*(n=294)*	
	%	95% CI	%	95% CI	%	95% CI
Self perceived health						
Excellent	4.8	1.7, 11.3	6.0	3.1, 8.9	5.8	3.1, 8.4
Good	23.8	10.9, 36.7	26.6	21.1, 32.1	26.2	21.2, 31.2
Fair	71.4	57.7, 85.1	66.7	60.9, 72.5	67.3	61.9, 72.7
Poor	0.0	---	0.8	0.3,- 1.9	0.7	0.3, 1.7
$\chi2 = 0.413$, $p = 0.940$						
Frequency of somatic symptom						
Almost never	7.1	-0.7, 14.9	7.1	3.9, 10.3	7.1	4.2, 10.0
Occasionally	73.8	63.3, 89.1	74.2	68.8, 79.6	74.1	69.1, 79.1
Always	11.9	2.1, 21.7	17.9	13.2, 22.6	17.0	12.7, 21.3
All most always	7.1	-0.7, 14.9	0.8	0.3,- 1.9	1.7	0.2, 3.2
$\chi2 = 6.945$, p=0.057*						
Victim of bully						
Non victim of bully	23.8	10.9, 36.7	51.6	45.4, 57.8	47.6	41.9, 53.3
Victim of bully	76.2	63.3, 89.1	48.4	42.2, 54.6	52.4	47.7, 59.1
$\chi2 = 11.136$, $p = 0.001$*						
History of Nonphysical sexual harassment						
Never harassed non physically	21.4	9.0, 33.8	61.9	55.9, 67.9	56.1	50.4, 61.8
Harassed non physically	78.6	66.2, 91.0	38.1	32.1, 44.1	43.9	38.2, 49.6
$\chi2 = 23.951$, $p = 0.001$*						
History of physicasexual harassment						
Never harassed physically	38.1	23.4, 52.8	72.2	66.7, 77.7	67.3	61.9, 72.7
Harassed physically	61.9	47.2, 76.6	27.8	22.3, 33.3	32.7	27.3, 38.1
$\chi2 = 19.066$, $p = 0.001$*						
Sexual harassment by family members, relatives or neighbors						
Never	50.0	34.9, 65.1	87.3	83.2, 91.4	82.0	77.6, 86.4
1 to 2 times	23.8	10.9, 36.7	6.7	3.6, 9.8	9.2	5.9, 12.5
3 to 5 times	9.5	0.6, 18.4	0.8	-0.3, 1.9	2.0	0.4, 3.6
6 times and more	7.1	-0.7, 14.9	0.4	-0.4, 1.2	1.4	0.1, 2.7
Don't Know	7.1	-0.7, 14.9	2.0	0.3, 3.7	2.7	0.8, 4.6
Do not answered	2.4	-2.2, 7,0	2.8	0.8, 4.8	2.7	0.8, 4.6
Respondents smoking history last 30 days						
Never	78.6	66.2, 91.0	95.6	93.1, 98.1	93.2	90.3, 96.1
Once	9.5	0.6, 18.4	2.0	0.3, 3.7	3.1	1.1, 5.1
2 to 4 times	2.4	-.2.2, 7.0	0.8	0.3,- 1.9	1.0	-0.1, 2.1
5 or more times	9.5	0.6, 18.4	1.6	0.1,3.1	2.7	0.8, 4.6
$\chi2 = 14.496$, $p = 0.001$*						
Respondents alcohol taking history last 30 days						
Never	76.2	63.3, 89.1	98.8	97.5, 100.1	95.6	93.3, 97.9
Once	16.7	5.4, 27.9	1.2		3.4	1.3, 5.5
2 to 4 times	4.8	-1.7, 11.3	0.0	-0.1, 2.5	0.7	-0.3, 1.7
5 or more times	2.4	-.2.2, 7.0	0.0	---	0.3	-0.3, 0.9
$\chi2 = 29.915$, $p = 0.001$*						
Respondents illicit drug taking history last 30 days						
Never	95.2	88.7, 101.7	99.6	98.8, 100.4	99.0	97.9, 100.1
Once	4.8	-1.7, 11.3	0.4	-0.4, 1.2	1.0	-0.1, 2.1
$\chi2 = 6.792$, $p = 0.009$*						
Depression Status of the respondents						
Probably no depression	47.6	32.5, 62.7	86.9	82.7, 91.1	81.3	76.8, 85.8
Possible depression	52.4	37.3, 67.5	13.1	8.9, 17.3	18.7	14.2, 23.2
$\chi2 = 36.535$, $p = 0.001$*						

Table 3: Distribution and relationship of the respondents having life time suicidal ideation by their family domain characteristics

Variables	Life time suicidal ideation				Overall	
	Yes *(n=42)*		No *(n=252)*		*(n=294)*	
	%	95% CI	%	95% CI	%	95% CI
Family Rigidity						
Yes	50	34.8, 65.1	42.1	36.0, 48.1	43.2	37.5, 48.9
No	50	34.8, 65.1	57.9	51.8, 64.0	56.8	51.1, 62.5
$\chi2 = 0.924$, $p=0.336$						
Family Conflict						
Yes	21.4	9.0, 33.8	14.3	10.0, 18.6	15.3	11.2, 19.4
No	78.6	66.2, 91.0	85.7	81.4, 90.0	84.7	80.1, 88.8
$\chi2 = 1.417$, $p=0.234$						
Marital Conflict						
Yes	100.0	N/A	0.4	-0.4, 1.2	0.3	0.3, 0.9
No	0.0	N/A	0.8	-0.3, 1.9	0.7	0.3, 1.7
Not *answered*			89.8	86.1, 93.5	99.0	97.9, 100.1
$\chi2 = 0.770$, $p=1.000$						
Family history of smoking						
Never	50.0	34.9, 65.1	64.3	58.4, 70.2	62.2	56.7, 67.7
Occasionally	2.4	2.2, 7.0	4.8	2.2, 7.4	4.4	2.1, 6.7
Regular	47.6	32.5, 62.7	31.0	25.3, 36.7	33.3	27.9, 38.7
Family history of alcohol intake or illicit drug use						
Never	95.2	88.7,	96.0	93.6, 98.4	95.9	93.6, 98.2
Occasionally	2.4	-2.2, 7.0	1.2	-0.1, 2.5	1.4	0.1, 2.7
Regular	2.4	-2.2, 7.0	2.8	0.8, 4.8	2.7	0.8, 4.6
$\chi2 = 0.990$, $p= 0.638$						
Family History of Suicide						
Yes	9.5	0.6, 18.4	4.0	1.6, 6.4	4.8	2.4, 7.2
No	90.5	81.6, 99.4	96.0	93.5, 98.4	95.2	92.8, 97.6
$\chi2 = 2.450$, $p= 0.123$						

Table 4: Distribution and relationship of the respondents having life time suicidal ideation by their school domain characteristics

Variables	Life time suicidal ideation				Overall	
	Yes *(n=42)*		No *(n=252)*		*(n=294)*	
	%	95% CI	%	95% CI	%	95% CI
Grade repetition at school						
Yes	21.4	8.9, 33.8	13.5	9.3, 17.7	14.6	10.6, 18.6
No	78.6	66.2, 91.0	86.5	82.3, 90.7	85.4	81.4, 89.4
$\chi2 = 1.816$, $p=0.178$						
Score achievement at school						
Above *80%*	9.5	0.6, 18.4	9.1	5.5, 12.6	9.2	5.9, 12.5
60% to 80%	50	34.9, 65.1	49.6	43.4, 55.8	49.7	44.0, 55.4
40% to 60%	33.3	19.0, 47.5	37.7	31.7, 43.7	37.1	31.6, 42.6
Below 40%	7.1	-0.7, 14.9	3.6	1.3, 5.9	4.1	1.8, 6.4
$\chi2 = 1.643$, $p=0.665$						
Parental monitoring of school result						
Never or almost never	11.9	2.1, 21.7	5.6	2.8, 8.4	6.5	3.7, 9.3
Sometimes	21.4	9.0, 33.8	39.7	33.6, 45.7	37.1	31.6, 42.6
Almost always	66.7	52.4, 81.0	54.8	48.6, 61.0	56.5	50.8, 62.2
$\chi2 = 6.385$, $p=0.041$*						
Pro social involvement						
Never	33.3	19.0, 47.5	26.2	20.8, 31.6	27.2	22.1, 32.3
Almost never	2.4	-2.2, 7.0	3.2	1.0, 5.4	3.1	1.1, 5.1
Sometimes	35.7	21.2, 50.2	54.8	48.6, 60.9	52.0	46.2, 57.7
Almost always	11.9	2.1, 21.7	7.9	4.6, 11.2	8.5	5.3, 11.7
Always	16.7	5.1, 28.0	7.9	4.6, 11.2	9.2	5.9, 12.5
$\chi2 = 7.186$, $p=0.107$						

Table 5: Distribution and relationship of the respondents having life time suicidal ideation by their peer domain

Variables	Life time suicidal ideation				Overall	
	Yes *(n=42)*		No *(n=252)*		*(n=294)*	
	%	95% CI	%	95% CI	%	95% CI
Helpful close friend						
None	21.4	9.0, 33.8	8.3	4.9, 11.7	10.2	6.7, 13.6
1 to 2	31.0	17.0, 45.0	52.0	45.8, 58,2	49.0	43.3, 54.7
>3	47.6	32.5, 62.7	39.7	33.6, 45.7	40.8	35.2, 46.4
$\chi2 = 9.857$, $p=0.007$*						
Friends having smoking history last 12 months						
None	54.8	39.7, 69.8	83.3	78.7, 87.9	79.3	74.7, 83.9
One	9.5	0.6, 18.4	2.8	0.8, 4.8	3.7	1.5, 5.8

Two to four	16.7	5.4, 28.0	7.5	4.2, 10.7	8.8	5.6, 12.0
More than four	19.0	7.1, 30.9	6.3	3.3, 9.3	8.2	5.1, 11.3

$\chi 2 = 17.211$, p=1.000*

Friends with history of drinking alcohol or illicit drug use last 12 months

None	69.0	55.0, 83.0	90.9	87.3, 94.4	87.8	84.0, 91.5
One	7.1	-0.7, 14.9	3.2	1.0, 5.4	3.7	1.5, 5.8
Two to four	11.9	2.1, 21.7	3.6	1.3, 5.9	4.8	2.3, 7.2
More than four	11.9	2.1, 21.7	2.4	-0.03, 4.8	3.7	1.5, 5.8

$\chi 2 = 15.231$, p=0.001*

Separation from best friend or partner

Yes	50	34.9, 65.1	19.0	14.1, 23.8	23.5	18.6, 28.3
No	50	34.9, 65.1	81.0	76.1, 85.8	76.5	71.6, 81.3

$\chi 2 = 19.202$, p=0.001*

Table 6: Distribution and relationship of the respondents having life time suicidal ideation by their community domain characteristics

Variables	Life time suicidal ideation				Overall	
	Yes *(n=42)*		**No** *(n=252)*		*(n=294)*	
	%	**95% CI**	**%**	**95% CI**	**%**	**95% CI**
Feeling unsafe in community						
Yes	23.8	10.9, 36.7	12.7	8.6, 16.8	14.3	10.3, 18.3
No	9.5	0.6, 18.4	18.7	13.9, 23.5	17.3	13.0, 21.6
I don't know	66.7	52.4, 80.9	68.7	63.0, 74.4	68.4	63.1, 73.7
$\chi 2 = 4.621$, p= 0.90						
Presence of crime, drug, fights in community						
Not at all	4.8	-1.7, 11.3	16.3	11.7, 20.9	14.6	10.6, 18.6
Few	47.6	32.5, 62.7	28.6	23.0, 34.2	31.3	26.0, 36.6
Much	9.5	0.6, 18.4	5.2	2.4, 7.9	5.8	3.1, 8.5
Don't know	38.1	23.4, 52.8	50	43.8, 56.2	48.3	42.6, 54.0
$\chi 2 = 9.730$, p= 0.016*						
Presence of abandoned buildings In community						
Absence	33.3	19.0, 47.5	35.3	29.4, 41.2	35.0	29.5, 40.4
Few	35.7	21.1, 50.2	31.3	25.6, 37.0	32.0	26.7, 37.3
Much	11.9	2.1, 21.7	5.2	2.4, 7.9	6.1	3.4, 8.8
Don't know	19.0	7.1, 30.9	28.2	22.6, 33.7	26.9	21.8, 32.0
$\chi 2 = 4.047$, p= 0.256						
Availability of pesticide						
Easily available	50	34.9, 65.1	34.5	28.6, 40.4	36.7	31.2, 42.2
Not available	50	34.9, 65.1	65.5	59.6, 71.4	63.3	57.8, 68.8
$\chi 2 = 3.710$, p= 0.054*						
Availability of firearms or illicit drug						
Easily available	16.7	5.4, 28.0	7.1	3.9, 10.3	8.5	5.3, 11.7
Not available	83.3	72.0, 94.6	92.9	89.7, 96.1	91.5	88.3, 94.7
$\chi 2 = 4.197$, p= 0.04*						

Table 7: Predictors for the life time suicidal ideation from the binary logistic regression model

Variables	B	p-value	OR	95% CI for OR	
				Lower	**Upper**
History of Nonphysical sexual harassment			0.255	0.065	0.997
Never harassed non physically			ref		
Harassed non physically	-1.368	0.049*			
Depression St atus of the respondents			0.129	0.040	0.411
Probably no depression			ref		
Possible depression	-2.051	0.001*			
Parental monitoring of school result			9.499	1.111	81.231
Never or almost never			2.416	0.339	17.207
Sometimes	2.251	0.040*	ref		
Almost always	0.882	0.378			
Helpful close friend			6.838	1.509	30.981
None			3.406	0.828	14.012
1 to 2	1.922	0.013*	ref		
>3	1.225	0.090			
Constant	**2.338**		**0.301**		**10.364**

*P<0.05, Considered as a level of significance; *=represent significance*

Discussion

Suicidal behavior among adolescents has been increasingly identified as an important clinical and public health problem[4]. Studies among adolescent student populations published after 1985 suggest that between 3.5-52.1% of the students had suicidal thoughts or suicidal ideation[2]. As per reviewing literatures so far, only limited studied could be found identifying suicidal behavior among the Bangladeshi adolescents. Reports of Daily Newspaper, hospital and police records identified sharp rise of suicidal death from year 2010 (9,663) to year 2014 (10,129) reflecting sensitive trend of suicidal behavior in Bangladesh[16] and which represents a considerable number of teens at risk. In a sample of 294 school going adolescents, the current study demonstrated that non-physical sexual harassment, depression, parental monitoring of school result, fewer (1 to 2) helpful close friend were the main predictors for the life time suicidal ideation among the respondents. In the study the entire sample fell between the age groups of 12 to 19 years and the mean age of the sample was 15.5±1.6. Muslims covered almost all (96.3%) of the sample. Females formed approximately three quarter (73%) of the sample. Overall most of the father's and mother's education status was around SSC level. Slightly over half (52.0%) of the respondent's fathers were professionally business man and majority (82.7) of their mother's were housewife. The current study revealed nearly one-seventh (14.3%) of the adolescents had lifetime suicidal ideation (SI) in which about one-tenth (8%) were girls and one-sixteenth (6%) were boys. Tanuj Sidhartha at New Delhi found lifetime prevalence of suicidal ideation 21.7% much higher than the rate found in the current study[21]. Choquet et al reported the lifetime prevalence of SI in a community sample of adolescents in France to be 14% for boys and 23% for girls[22]. High rates of Non Fatal Suicidal Behavior (NFSB) in the US (YRBS study) reflected the breaking of families resulting in frequent change in parental figure and great number of single parent families on the other hand higher rate of suicidal behavior in context of Bangladesh could reflect loss of familial and community cohesion. Furthermore lack of practicing openness of mind inside the family is also demoralizing the adolescents[16]. Current study revealed that adolescents having life time suicidal ideation had higher mean age (16.1±1.6) than the adolescents not having life time suicidal ideation (15.4±1.6). This is probably due to the fact that younger adolescents are more sentimental than the older adolescents in case of taking devastating decision like attempting suicide. Female respondents had greater suicidal behavior, may be due to the fact that most of the respondent were female. Respondent's sex was found significant (P=0.014) for life time suicidal ideation by bivariate analysis but didn't sustain in multivariate analysis. Tanuj Sidhartha et al. at New Delhi found older age group (15-18 years), female sex and Hindu religion to be significant risk factors for NFSB in their study stated[21], Guyer observed that older adolescents were at greater risk for NFSB than younger ones in a univariate analysis, but did not reach significant level in multivariate analysis[23]. So gender is considered to be one of the most important predictors of suicidal behavior; risk factors for suicide. Our study also considered gender when evaluating suicidal behavior. It is significant (P<0.05) in bivariate analysis but overruled in multivariate analysis.

Among the tested individual characteristic, most strong predictor (P<0.05) of suicidal ideation was the presence of possible depression, non-physical sexual harassment. Approximately 18.7% (95% CI=14.2-23.2) of the students reported of having possible depressive symptom. And among the students having life time suicidal ideation more than half (52.4%) have possible depression. Depression have been identified as risk factors for suicidal behavior in some other studies by Joffe RT and Borowsky IW [4,24]. Depression, one of the most important risk factors for suicide, may be precipitated by social factors, such as disputes with parents, poor school performance, separation from best friends, failure in love affairs or by being victimized of bullying or sexual harassment. Alcohol intensifies depressive mood swings and reduces self-control, so it can predispose to suicidal acts. For sexual harassment findings of this study are well supported by large body of research particularly in western studies done by Aravind Pillai at 2009, where association between physical violence, sexual abuse and suicidal behavior in adolescents has been well established. They also found these associations to be strong for both males and females. In this study among the other individual characteristics which was found significant (P<0.05) in bivariate analysis are frequency of somatic symptom, victim of bully, physical and non-physical sexual harassment, respondents history of smoking, taking alcohol or illicit drug, depression Status of the respondents, but most were dropped out in binomial logistic regression model except non physical sexual harassment and depression Status of the respondents. A study by Randall JR among the Youth in the Republic of Benin also found similar result as this one for the variables

being bullied (RRR= 1.47; 95%CI: 1.00–2.15), alcohol misuse (RRR= 1.52;95%CI: 1.02–2.27), substance use (RRR=1.69; 95%CI: 1.05–2.72)[8] which were significantly associated with suicidal ideation. Alcohol use, has been found associated with suicidal behavior in several studies from some countries done by Swahn MH and Donald M [25,26], but dropped out as a risk factor from study conducted at Goa, India[12], final multivariable model for suicidal behaviors. This study found a low prevalence of alcohol use in their sample; this is similar to the findings of the study conducted at Goa, India which reported low prevalence of alcohol use among young people[12]. Bullying, particularly among school-age children, is a major public health problem both domestically and internationally. Current study revealed that a little more than half (52.4%) of the adolescents were victim of bully and had significant (P<0.05) relationship with suicidal ideation in bivariate analysis though overrule in binomial logistic regression model. The study identified bullying act as five times higher among the Bangladeshi adolescents than the Americans. Among the nationally representative sample of American adolescents, 11% reported being a victim of bullying. Studies indicate that bullying experiences are associated with a number of behavioral, emotional, and physical adjustment problems. Victims of bullying tend to report feelings of depression, anxiety, low self-esteem, and isolation; poor school performance; suicidal ideation; and suicide attempts. Evidence further suggests that emotional and behavioral problems experienced by victims, bullies, and bully-victims may continue into adulthood and produce long-term negative outcomes, including low self-esteem and self-worth, depression, antisocial behavior, vandalism, drug use and abuse, criminal behavior, gang membership, and suicidal ideation[19]. Results of this study have profound implications for current and future suicide prevention programs in the urban area pointing to the need for increased focus in addressing depression in adolescents and victim of sexual harassment. Depression was found one of the main predictor of all form Suicidal behavior in the current study. Routine screening for depression might result in improved recognition and early treatment of the condition, which might reduce the number of suicidal teens. Mental health promotion programs could be incorporated into the schools' curriculums as a prevention activity. As like as this study the role of family factors in suicidal behavior is not clear in many studies. Family factors appear to play a role in suicidal behavior by increasing the vulnerability of the adolescent. Poor family environment, one where dysfunction, discord or tension is present has been associated with suicidal ideation and in other studies conducted in USA by Joffe RT[4] and Borowsky IW[24]. Out-of-home and peer relationships have been suggested as factors that might precipitate suicidal behavior. The school is an important social space since adolescents spend more time within school than elsewhere. Discussing school and peer characteristics current study established parental monitoring of school result, helpful close friend, friends having smoking history, friends with history of drinking alcohol or illicit drug use, separation from best friend important predictor (P=0.05) of suicidal behavior. It could establish that the adolescents who were sometimes monitored by their parents for their school results have significant risk for life time suicidal ideation rather than those who were never or always monitored. Study by Randall JR (2014) among the Youth in the Republic of Benin also found similar result, parental support (RRR= 0.88; 95%CI: 0.80–0.96) which were significantly associated with suicidal ideation and planning in the regression model. Joffe RT[4] and Borowsky IW[24] found the opposite circumstances where lack of parental monitoring and family support has been associated with suicidal ideation. In short, community disorganization implies a state of inadequacy and disunity that gives free play to the forces of deterioration in community life which may be conceptualized by several indicators such as person feeling safe in the community, presence of amount of crime, drug, fight, presence of abandon empty building, availability of pesticide, availability of firearms or illicit drug in the community collectively. This study also tried to identify the role of these variables in suicidal behavior among the adolescents by discussing several characteristics and found feeling unsafe in the community, presence of crime, drug and fight, availability of pesticides, availability of firearms and illicit drug to be significantly associated with suicidal behavior through bivariate analysis but all were overruled by logistic regression model for multivariate analysis. This may happen due to not discussing the variables collectively as a scale rather each of them were discussed separately. Few studies have explored the association between suicidal ideation or attempts and community characteristics.

Conclusion

This study assessed proportion of urban adolescents having suicidal behavior and also assessed the relationship between

suicidal behavior among adolescents and socio-demographic characteristics, individual characteristics, family domain, school domain, peers domain and community domain characteristics. The study found lifetime suicidal ideation (LSI) among 14.3% of the adolescents. Suicidal behavior was more common among the girls than the boys. The study also revealed that adolescents having life time suicidal ideation have higher age (16.1±1.6) than the adolescents not having life time suicidal ideation (15.4±1.6). Study demonstrates that non-physical sexual harassment, depression, parental monitoring of school result, helpful close friend were the predictors of suicidal ideation. This study provides one of the base line analyses in Dhaka urban community to examine suicidal behavior in a representative sample of adolescent students. It is also one of the first studies to explore influencing factors of suicidal behavior. Hopefully the results of this study will contribute to the understanding of this phenomenon and should thus contribute to the development of effective prevention strategies and help safeguard the health of adolescents.

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Original Article

Knowledge, Attitude and Preventive Practices among Non Medical Students Towards the COVID-19 Pandemic: An Online Based Study

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Abstract

Background: COVID-19 is super spreading in the community of Bangladeshi population causing increasing morbidity and mortality amongst masses, affecting around 510 million people across the world with a massive rise in death toll. ***Objectives:*** The aim of this study is to find out the knowledge, attitude and preventive practices of non medical students towards the Covid-19 pandemic during lockdown situation. ***Methodology:*** This online cross sectional study was conducted from 01 to 31 May 2020 during the lockdown period in Bangladesh. A two page pre selected and pre tested questionnaire was uploaded on the Google forms and links were shared on different social platforms. Collected data was analyzed by using SPSS IBM version 20. 00. ***Results:*** A total of 419 responses were obtained , majority of the participants 221 (52.75%) were female , 252 (60.14%) participants were HSC pass, 263(62.76%) belonged to the age group of 15-20 years. Most of the participants 110(26.25%) believed COVID-19 affect all age group, 186(68.26%) thinks there is no specific available treatment , 239(57.04%) respondents say this infection may be preventable, 185(44.15%) opted for lockdown and 144(34.37%) answered physical distancing need to prevent spread, 291(69.45%) respondents think early supportive and symptomatic treatment may be helpful. Regarding 14 days quarantine period 191(45.58%) say it may be an effective procedure, 196(46.78%) think the situation may not be controlled soon, 199(47.49%) are not satisfied by current initiatives taken by the government, 383(91.41%) acknowledge the efforts of healthcare providers for their society, 255(60.86%) think there is need of more general awareness about COVID-19 pandemic and 196(46.78%) recommend washing hands must be for 20 seconds. Most of the participants 342(81.62%) think COVID-19 is caused by virus, 221(52.74%) opted for wearing masks as preventive measure. ***Conclusion:*** Since prevention is better than cure, so an increasing need of awareness amongst the mass population regarding COVID-19 is an urgent need.

Keywords: COVID-19, knowledge, attitude, preventive practice, Non Medical students.

Introduction

The first ever a viral outbreak was reported in 1918, which was known as Spanish flu with H1N1 influenza virus being the causative agent. The viral outbreak affected as many as 500 million people across the world with a massive rise in death toll shooting from 17 to 50 million[1]. A similar situation was faced in 2009 by the spread of H1N1 Swine flu during 2009-2010. in which around 6.8 billion people were affected and nearly 5 million people died. In recent times, COVID-19 outbreak is accounted as a global issue with a health emergency like situation. This has been closely associated with unprecedented outburst of pneumonia with an etiology previously not known well. The viral outbreak was first reported in Wuhan City, of Hubei province in the last month of year 2019. Following the findings of this disease, a novel corona virus was identified as the sole agent. Later the World Health Organization named it as COVID-19. This has shown

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Received: April 2021 **Accepted:** July 2021

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close association with previous outbreaks reported under, Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) [2,3].

Bangladesh is one of the top 20 countries in terms of confirmed cases of COVID-19, with a positive case rate of 19.09% - 22.91% as of June 1, 2020 [4]. However, regarding the actual number of cases and the scarcity of testing facilities a lot of question arises[5]. People also show concerns about Bangladesh's ability to mount an effective response to the COVID-19 pandemic[6]. Reports of different newspaper states that Bangladesh is a developing economy and is mainly dependent on remittances, ready-made garments, and small trades. The country is in mid-phase in a few financial megaprojects[7]. Natural calamities and COVID-19 pose challenges for the Bangladeshi government and its residents at home and abroad[8]. Due to economic concerns, Bangladesh did not impose a countrywide lockdown from the very beginning [9]. Newspaper and social media along with government news briefing helped a lot to improve the individual awareness and thereby alleviate unnecessary fears and social stigmas[10].

Materials and Methods

This online cross sectional study was conducted from 1st May to 31 May 2020 during the lockdown period in Bangladesh. At that time physical interaction for questionnaire distribution and filling was not possible to have the community based survey. For the purpose of sample collection, a two pages questionnaire was generated by consulting the recent published studies [11,12]. Further, sample collection proforma was uploaded on the Google forms and links were shared on different social platforms like WhatsApp, FaceBook, LinkedIn, Twitter etc. Authors have also sought help from their available reliable connections to distribute this sample collection form in order to get maximum response from the volunteer participants. Only participants who were sixteen years of age or above and students of different school, colleges, universities were allocated for the data collection based on their understanding. No area was confined to allow maximum data collection throughout the region. Respondents had to respond either in "Yes " or "No" or "May Be" in order to confirm their participation voluntarily. Once approval of voluntary participation was confirmed participants were navigated to the sample collection instrument. The sample collection form was divided into three parts. First section dealt with demographic information including: Name, age, gender, marital status, education. Second section broadly covered knowledge, attitude and preventive practice analysis which included various questions. Third section had some multiple choice answers. Collected data were analyzed by using SPSS IBM version 22. 00.

Results

A total of 419 responses were obtained from the students. The majority of the participants 221 (52.75%) were female , 252 (60.14%) participants were HSC pass, 263(62.76%) belonged to the age group of 15-20 years and 323(77.09%) are unmarried. (Table-I).

This study has revealed that most of the participants 110(26.25%) believed COVID-19 affect all age group, 180(42.96%) thought that it does not affect the elder people seriously, 186(68.26%) thought there is no specific treatment available for COVID-19, Greater part of respondents 239(57.04%) said COVID-19 infection may be preventable, 185(44.15%) said lockdown may be declared by government to avoid further spread of infection and 144(34.37%) answered physical distancing may be helpful to prevent spread of this disease. Majority participants 345(82.33%) complained there is absence of diagnostic facilities in their neighboring area, 237(56.56%) thought sign symptoms may include dry cough, fever, fatigue and difficulty in breathing, most 291(69.45%) of the respondents thought early supportive and symptomatic treatment may be helpful in cure of COVID-19 infection, 191(45.58%) gave opinion that isolation from the people who are infected with the COVID-19 virus may be an effective way to reduce the spread of the virus . Regarding 14 days quarantine period 191(45.58%) said it may be an effective procedure, 390(93.08%) said COVID-19 affects world economy very badly, 198(47.25%) gave negative response about COVID-19 pandemic affects mental health of population, 196(46.78%) thought the situation may not be controlled soon, majority 199(47.49%) were not satisfied by current practices and initiatives taken by the government, almost all participants 383(91.41%) acknowledge the efforts of researchers/healthcare providers for their society, 255(60.86%) of the participants thought there is need of more general awareness about COVID-19 pandemic and 196(46.78%) recommended procedure for washing hands must be 20 seconds, 153(36.51%) were in dilemma whether herbal medicine can cure CODID-19 disease. (Table-II)

Most of the participants 301(71.84%) heard about COVID-19 from news channel, 342(81.62%) thought it is caused by a virus, 221(52.74%) opted that wearing masks gives preventive measure and 128(30.54%) thought maintain personal hygiene can improve mental health during quarantine period (Table-III).

Table I: Demographic profile of the participants (n=419)

Gender	Male		Female		
	198(47.25%)		221 (52.75%)		
Educational qualification	SSC	HSC	Graduate	Post graduate	
	25 (5.97%)	252 (60.14%)	79 (18.86%)	63 (15.03%)	
Age	16-20 yrs	21-30 yrs	31-40 yrs	41-50 yrs	Above 50 yrs
	263 (62.76%)	62 (14.80%)	51 (12.17%)	34 (8.12%)	9 (2.15%)
Marital status	Married		Unmarried		
	96 (22.91%)		323 (77.09%)		

Table II: Questionnaire regarding knowledge, attitude, practice of the participants (n=41

Q N	Questions	Yes	No	May Be
1	Do you think COVID-19 affect all age group?	211 (50.36%)	98 (23.39%)	110 (26.25%)
2	Only elder people are affected seriously	175 (41.77%)	180 (42.96%)	64 (15.27%)
3	Specific treatment is available for COVID-19 Virus	32 (7.64%)	286 (68.26%)	101 (24.10%)
4	COVID-19 infection is preventable	81 (19.33%)	99 (23.63%)	239 (57.04%)
5	Government has declared lockdown to avoid further spread of infection	151 (36.04%)	83 (19.81%)	185 (44.15%)
6	Physical distancing is helpful to prevent spread of disease	141 (33.65%)	134 (31.98%)	144 (34.37%)
7	Is there any diagnostic facilities available in your neighboring area?	38 (9.07%)	345 (82.33%)	36 (8.60%)
8	Dry cough, fever, fatigue and difficulty in breathing are the symptoms of COVID-19 infection	101 (24.10%)	81 (19.33%)	237 (56.56%)
9	Early supportive and symptomatic treatment can be helpful in cure of COVID-19 infection	107 (25.54%)	21 (5.01%)	291 (69.45%)
10	Isolation from the people who are infected with the COVID-19 virus is an effective way to reduce the spread of the virus.	146 (34.84%)	82 (19.57%)	191 (45.58%)
11	People who have interaction with someone having this infection should be immediately isolated for 14days as an quarantine period.	148 (35.32%)	80 (19.09%)	191 (45.58%)
	COVID-19 pandemic affects the world economy badly	390 (93.08%)	6 (1.43%)	23 (5.49%)
13	In prevailing scenario people are facing trouble in getting their basic necessities (food/rations etc)	192 (45.82%)	44 (10.50%)	183 (43.67%)
14	COVID-19 pandemic affects mental health of population (depression, anxiety, loss of interest etc.)	125 (29.83%)	198 (47.25%)	196 (46.78%)
15	Do you think this infection can be controlled soon?	102 (24.34%)	196 (46.78%)	121 (28.88%)
16	Are you satisfied by current practices and initiatives taken by the government?	90 (21.48%)	199 (47.49%)	130 (31.02%)

17	Herbal plants can be used treat COVID-19	144 (34.37%)	122 (29.12%)	153 (36.51%)
18	People are serious about present situation and following preventive measures advised by authorities	107 (25.54%)	120 (28.64%)	192 (45.82%)
19	You acknowledge the efforts of researchers/ healthcare providers (doctors, pharmacist, nurses, allied health professionals and paramedical staff) for their society	383 (91.41%)	—	36 (8.59%)
20	There is need of more general awareness about COVID-19 pandemic	255 (60.86%)	—	164 (39.14%)
21	Do you wash hands for 20 seconds and follow recommended procedure for washing hands	196 (46.78%)	72 (17.18%)	151 (36.04%)

Table III: Questionnaire with multiple choice answer regarding knowledge, attitude, practice of the participants (n=419)

From where you heard about this disease?	
News Channels	301 (71.84%)
Social Media	102 (24.34%)
Family	9 (2.15%)
Others	7 (1.67%)
In your opinion, reason of COVID-19 is	
Caused by a virus	342 (81.62%)
By eating infected food	7 (1.67%)
Public gathering	37 (8.83%)
Poor immunity	33 (7.87%)
What preventive measures you have taken to avoid or spread the COVID-19 infection	
Social/physical distancing	101 (24.10%)
Wearing mask	221 (52.74%)
Hand wash for 20 seconds	97 (21.96%)
Healthy activities adopted during quarantine to improve mental health	
Exercise, yoga and walk	80 (19.09%)
Reading	46 (10.98%)
Cooking	21 (5.01%)
Indoor games	45 (10.74%)
Avoid junk food, eating fresh fruits and healthy diet	23 (5.49%)
Maintain personal hygiene	128 (30.54%)
Sleep	76 (18.15%)

Discussion

This study was targeted for the non medical students of different school, colleges, Universities who could manage some time to go through the questionnaire during lockdown period. Hence all the population in this study were educated. Number of female students were slightly more than male. Current study indicates that the student community is well informed and has fair knowledge about the COVID-19 situation. News channels and social media like facebook, whats app, twitter, viber etc have played a significant role in this regard 11-13. However, this study had several limitations i.e. only students were accessible through online portals and to fill the form. Participants needed to have an account to access the questionnaire and dissemination of the sampling instrument only through an online platform 14. Opinion of mass population who are not students and non educated could not be obtained.

Majority of the population thought that COVID-19 affect all age group and only older people are affected seriously. Greater part of participants were not sure whether it is preventable or not. Most of them also responded that there is no specific treatment. They were aware that COVID-19 is transmitted through respiratory droplets and can affect all age groups. This coincides with findings of previous study 15,16. The students community were well aware about the signs and symptoms of the COVID-19 infection which included dry cough, fever, fatigue and difficulty in breathing. Many participants of this study were unsure if early supportive treatment and isolation of the infected patient is helpful in controlling the spread or not. Quarantine or social distancing is helpful in reducing the number of COVID-19 cases. In the prevailing scenario, the government deemed that lockdown could be a best option which may prove beneficial in controlling the infection and declared countrywide lockdown. A number of students respect this decision and keep themselves under the lockdown while

others who didn't take this health emergency seriously were often found roaming here and there without wearing masks. They were at high risk to have infection and become a source of spreading COVID-19 infection which may result into a hindrance in achieving the goal i.e. controlling the infection 17, 18. This survey indicates that a small percentage of the respondents admire government initiatives and practiced in order to cope with the current situation while remaining were not satisfied. This is the first time authority have faced such a calamity, so there is lot of mis-communication, lack of proper and timely decision. The present study has also highlighted that the public is facing troubles while getting basic necessities (food/rations etc). Hence it is quite difficult to sustain this lockdown for a longer period otherwise it is supposed that mass population may face issues to have basic necessities 19, 20. Although government took initiative to distribute relief , but it is quite impossible to serve food to millions of people during lockdown only by the administration. However government agencies tired their best to help the population in crisis. There is lack of diagnostic facilities in different parts of the country other than the capital city Dhaka. Many people also imply herbal medicines to treat various ailments with strong belief for COVID-19 cure. An investigation has suggested that cure of H1NI and SARS through Chinese traditional medicine is well documented, based on human evidence and historical data and such medicine could be an alternative approach to prevent COVID-19 in high risk communities 21. COVID-19 also poses challenges to the mental well-being. This current global health emergency has badly impacted the psychological health (i.e. depression, anxiety, boredom, frustration etc.) of the individuals. To deal with it the students have adopted healthy activities which include maintaining personal hygiene, indoor exercise, yoga, playing indoor games, reading, writing, cooking etc. 22, 23 Launching of many new free online courses in this duration of crisis is also an effective way to keep them busy and has opened new doors of learning 23. The internet bill is very high in our country, the good network connection is not available everywhere and there is no subsidy for students or educational institutes like medical colleges or universities. It should be brought under consideration of concerned authorities. Worldwide frontline heroes including the health care providers (doctors, pharmacists, nurses, allied health care professionals and paramedical staff) and researchers are working tirelessly to fight against the COVID-19 by putting their lives at risk. Students community acknowledge their efforts and struggle. Result of this study coincides with findings of similar studies done before 24, 25,26, 27.

Conclusion

Present study concludes that non medical students are fairly informed about COVID-19 however still there is need of awareness amongst masses regarding this pandemic to counteract the spread. People need to wear mask when go outside and quarantine themselves other time in order to prevent infection, catering this as a health emergency. Physical exercises during the lockdown are also needed to keep a mental and physical balance of health. More hospitals for COVID-19 tests and managements are required.

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Original Article

Management of Acute Appendicitis in Corona Pandemic- Study of 50 Cases

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Abstract

Background: Acute Appendicitis is a surgical emergency. Patients present with pain in right lower abdomen, with other symptoms like nausea/vomiting, fever, diarrhoea, urinary symptoms. Diagnosis is based on a multimodality approach that includes, clinical, radiological and pathological findings. Management is either conservative with antibiotics or surgical depending on severity. However approach to surgical management has changed with the ongoing Covid-19 pandemic. It has necessitated categorization of surgical procedures into essential and non essential to limit risk to both patient and surgical team and also for prioritization of resources to the rising, continued spread of Covid-19. Materials and methods: It is a prospective multicentre study conducting from the April to June 2020 in CMH Cumilla and Cantonment General Hospital (CGS) Cumilla, during the outbreak of COVID pandemic in our country, Patients 18 years or older, diagnosed clinically and/or radiologically as acute appendicitis were included in this study. And included: patient demographics, COVID status; initial management (operative and conservative); length of hospital stay, complications and outcome. Analysis was performed on selected 50 cases with 30-day follow-up. Results: 50 patients evaluated, mean age of 30.45±9.71 years. Tenderness in RIF was the commonest finding followed by fever and rebound tenderness. Leucocytosis was seen in 90%. Alvarado score of 5-6 was present in 18% whereas 7-10 was present in 78% patients. USG was suggestive of appendicitis in 84.50% patients. Conservative treatment was successful in 70% patients with no treatment failure. Overall recurrence was seen in 10% cases that were successfully managed during primary admission. Operative interventions were performed in open method in 20% (10/50). Median length of hospital stay was significantly reduced in the conservatively managed group (3 [2–5] days vs. 5 [3–7] days, $p < 0.001$). Complications were significantly lower in conservative group. All patients were tested for COVID -19 on admission and found positive for 02 (20%) patients in operated group and 05 (12.5%) patients non operated group. Conclusion: With the emergency situation of COVID-19 the management of acute appendicitis has shifted from operative to conservative approach like other surgical procedures to conserve medical resources and prioritize the surgical needs from essentials to non essentials and non-operative management has shown to be safe and effective in the short-term. Antibiotics should be considered as the first line during the pandemic.

Keywords: Appendicitis, COVID-19, Non-operative, Antibiotics, Appendicectomy

Introduction

Acute appendicitis is a surgical emergency. it is the most commonly performed operations done by a General surgeon. The diagnosis is usually made by clinical ground but radiology and pathological support helps to confirm the diagnosis. Alvarado Score is used to predict the severity of appendicitis, and uses clinical symptoms, signs and laboratory markers and negates the need for radiation exposure. Management of appendicitis is either

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Received: October 2020 **Accepted:** December 2020

conservative or surgical. Conservative management can be tried for non complicated appendicitis, whereas presence of complications like perforation, fecolith, abscess dictate surgical management. However, the Covid-19 pandemic changes routine surgical management. Operating theatres are high risk areas for transmission, additional strain on the team and resources due to increasing prevalence of Covid-19, risk to operating team has called for a change in protocols to determine essential vs non essential procedures. Proper education of surgical staff regarding use of PPE and decreased exposure of healthcare staff is the key to minimising risk of infection in the team. Uncomplicated appendicitis can be managed with antibiotics and monitored for improvement in symptoms, signs and hemogram for leucocytosis. Complicated cases that cannot be otherwise conserved can be operated taking all the necessary precautions such as pre operative COVID-19 testing, including Personal Protective Equipment (PPE) for operating team, limiting the members of operating team, proper operating room ventilation and air purification, dedicated Covid-19 positive and Covid-19 suspect wards, clear path for transport with limited traffic are the need of the hour . Laproscopic surgeries carry higher risk over open surgeries due to the risk of aerosol transmission

Material and methods

A Prospective study was done from April to June 2020, all patients presenting to Combined Military Hospital (CMH),Cumilla. Mainamati Cantonment General Hospital, Cumilla with clinical features of acute appendicitis during covid pandemic.

Inclusion Criteria

1. Age above 18 years
2. Patients presenting with clinical features of acute appendicitis, diagnosed clinically and supported by ultrasonography and evident as leucocytosis in blood picture were included in the study.
3. Patients willing to participate in the study.
4. Patients who followed up for 30 days after discharge.

Exclusion Criteria

1. Patients not willing to participate in the study.
2. Patients who did not follow up after discharge.
3. Recurrent appendicitis
4. Cases presenting with complications of acute appendicitis like abscess, perforation and lump formation. All patients presenting with features of acute appendicitis during the above stated period were evaluated. Following parameters were noted for all patients and compared. Patients above 18 years of age were included in the study. Thorough history taking and examination was done for the patients. Presenting symptoms of pain in abdomen, nausea/vomiting, fever, loss of appetite, loose stools, urinary frequency were evaluated. History of recent travel, contact with covid positive or covid exposed patients was asked for. Any significant comorbidities and past surgical histories were noted. Covid swab was sent for all patients on admission. Complete physical examination was done for the patients. Pulse rate, Blood Pressure examination, Per abdominal examination was done to look for tenderness and its site, presence of any guarding or rigidity. Chest Xray was done for all the patients to rule out features of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). CBC was done for all patients to see neutrophilic leucocytosis. Ultrasound examination was done for all patients, including diameter of appendix, periappendiceal fat stranding or collection with other features such as presence of appendiculoliths, gas within the lumen of appendix, loculated collection and appendicular phlegmon were noted. Based on ultrasound findings, patients were classified into Group A and B, Group A had cases of uncomplicated appendicitis that were conserved, whereas Group B had cases of Complicated appendicitis including, appendiculolith, appendicular perforation, appendicular abscess etc. Patients of group A who did not respond to conservative management within 24-48 hours were operated and included in group B. Conservative management included, keeping the patient nil per oral for 48 hours with intravenous antibiotics for 3-5 days, then switched over to oral antibiotics. These patients were regularly examined for worsening of clinical signs including change in abdominal examination findings, with repeat leucocyte count being done at 48 hours. Patients operated were treated with all precautions and use of PPE and open appendectomy was done. Laparoscopic appendectomy was not done due to increased risk of aerosol exposure to operating team. Postoperatively patients were kept nil per oral for two days as the bowel sound returns, then shifted to orals. Suture removal was done on POD 9. All patients were tested for Covid-19, and turned out to be negative. All patients were followed up for 30 days after discharge, with plan to follow up if symptomatic in the future. Patients with appendicular lump were asked to follow up after 4 weeks, and before that if symptomatic.

Table I: Age distribution was as follows

Age distribution(in years)	Number of patients (n=50)
15-25	33 (66%)
26-35	10 (20%)
36-45	06 (12%)
46-55	01 (02%)
>55	00

Mean age was 30.45years with standard deviation of 9.71 and range between 18 – 61 years. male was 35, female 15 and male: female ratio was 2.3:1.

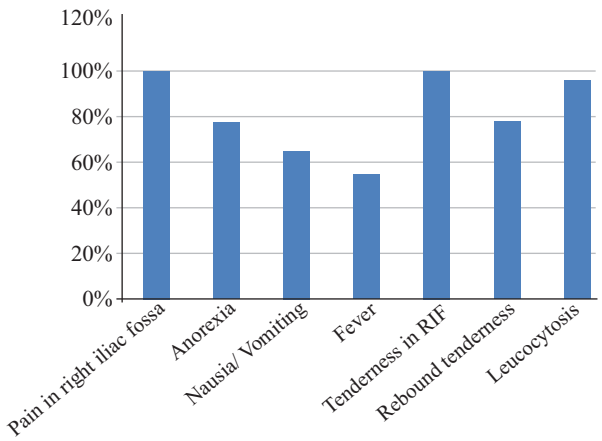
Table II: Duration of symptoms were compared

Duration of symptoms (in hours)	Number of patients (n=50)
<24 hr	20 (40%)
24-48hr	15 (30%)
8-72 hr	10 (20%)
>72 hrs	5 (10%)

30% patients had a 24-48 hrs history of pain in abdomen, 20% patients had a 48-72 hrs history 10% had a history >72 hrs and 40% <24 hrs history of pain abdomen.

Table III: Clinico-pathological factors at the time of presentation

Symptoms and signs	Frequency(n=50)	Percentage
Pain in right iliac fossa	50	100%
Anorexia	37	74%
Nausia/ vomiting	35	70%
Fever	27	54%
Tenderness in RIF	50	100%
Rebound tenderness	36	72%
Leucocytosis	45	90%



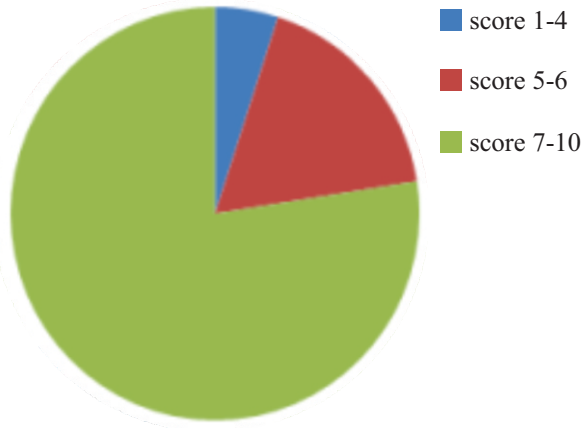
.**Fig 1**: Clinico-pathological factors

In the 50 patients, pain and tenderness was present in all the patients with symptoms of nausea/vomiting in 35 (70%) patients followed by anorexia in 37 (74%) patients. Fever (>99 degrees F) was present in 27 i.e. (74)% patients and rebound tenderness was present in 36 (72%) patients in this study. Leucocytosis was present in 45 (90%) patients

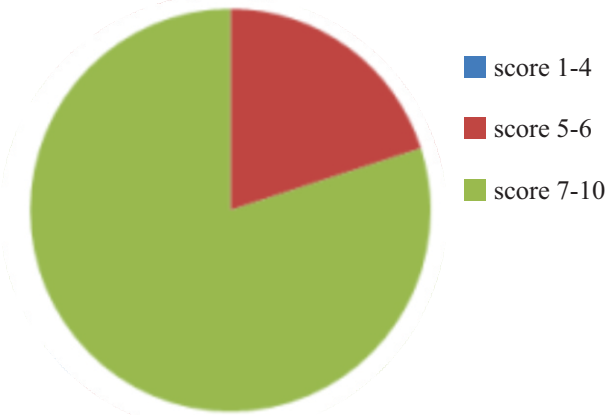
Table IV: Alvarado score for the patients in both group were compared. Group A (Conservative management)- 40 patients

Alvarado score	Number of patients (n-40)
1-4	02 (05%)
5-6	07 (17.5%)
7-10	31 (77.5%)

Alvarado score Group A
(Conservative) =40 patients



Alvarado score Group B
(Operative) =10 patients



Group B (Operative management)- 10 patients

Alvarado Score	Number of patients (n=10)
1-4	0
5-6	2 (20%)
7-10	8 (80%)

In group A 77.5% had an Alvarado score of 7-10 , 17.5% had a score of 5-6 and were conserved . Group B that underwent surgical management had an alvarado score of 7-10 in 80% patients and a score of 5-6 in 20% of patients.

Table V: Number of patients operated versus conserved

Treatment	Number of patients (n=50)
Conservative	40 (80%)
Operative	10 (20%)

Fig 3. Number of patients operated vs conserved

Out of 50 patients 10 patients who underwent operative management had adverse clinical signs on presentation with leucocytosis or worsening after admission or appedicular perforation as presentation.

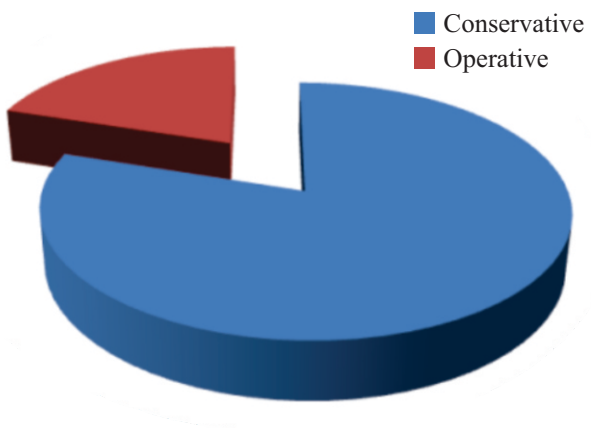


Table VI: Out of 10 operated patients indications for surgery was as follows:

Number of patients	Indications
01	Guarding on presentation, elevated leucocytocyte count , failed to improve clinically.
6	Worsening of symptoms , abdominal examination findings and leucocytosis, failed to progress clinically.
03	Not responding to conservative treatment. Deterioration of symptoms.

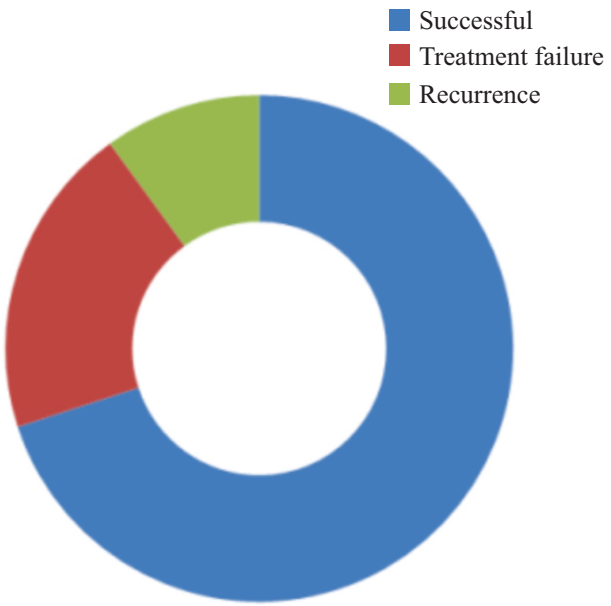
Table VII: Duration of hospital stay

Group	Mean duration of hospital stay
Group A (Conserved)	3 Days
Group B (Operated)	5 Days

Table VIII: Outcome of treatment

Outcome of conservative treatment	Frequency (n= 50)	Percentages
Successful	35	70%
Treatment failure (Operation)	10	20%
Recurrence	05	10%

Fig 4. Outcome of conservative treatment In this study, 50 cases of uncomplicated acute appendicitis were included and among them 40 cases were managed successfully by conservative treatment on admission and among them 5 patients readmitted with recurrence after discharge from hospital. and 10 patients progress to operative treatment as conservative treatment were unsuccessful.



Discussion

Acute appendicitis is a common cause of acute abdominal pain and appendectomy has been the mainstay for the treatment for acute appendicitis since it was first reported by McBurney in 1889.Prompt diagnosis is rewarded by a marked decrease in morbidity and mortality. Routine history and physical examination both remain the most effective and practical diagnostic modality. Typically the patients presents

with a H/O periumbilical pain which later shifts to Right iliac fossa may be associated with nausia and or vomiting with low grade fever. Diagnosis is made on clinical assessment supported with USG or CT scan and blood pictures. Alvarado score is commonly used to confirm the diagnosis and predict the severity of appendicitis.

Alvarado (MANTRELS) score .

Features	Score
Migratory Rt ilaic fossa pain	1
Anorexia	1
Nausia	1
Tenderness in RIF	2
Rebound tenderness	1
Elevated temperature	1
Leucocytosis	2
Shift to left	1
Total	**10**

Score 1-4: Acute appendicitis, very unlikely, keep under observation. Score 5-6: Acute appendicitis, may be, for regular observation. Score 7-8: Acute appendicitis, probable, Score 9-10: Acute appendicitis, definite.

While surgery remains the standard teaching there is an emerging body of literature to support a trial of conservative management in patients with uncomplicated (absence of appendicolith, perforation or abscess) appendicitis. The viable data indicate initial successful outcome in more than 90% of patients with CT confirmed appendicitis: however one quarter of patients initially treated conservatively will require surgery within 1 year for recurrent appendicitis. Subsequent surgery if needed tends to be uncomplicated.

In our study all patients were admitted under surgical ward and initial attempt was made to treat them conservatively. The treatment protocol was keeping nothing per oral with Intravenous fluid and antibiotics. Third generation cephalosporin specially Inj ceftriaxon and Inj Metronidazole were given to all for 48 to 72 hrs with antispasmodic and anti ulcerant drugs. Close monitoring was made to see the clinical parameters including the vitals such as pulse, BP, temp, pain complaints, local tenderness, muscle guard, and rigidity and lump formations were recorded in the history sheet. Those who have showed improvements clinically were given oral diet and switch over to oral medications from day 48-72 hrs . In our study we successfully treated 40 patients and were discharged among them 05 patients readmitted with recurrence of symptoms and ultimately operated within the follow up period.10 patients conservative treatment were failed and open appendicectomy was done maintaining standard covid protocol. Postoperative period was uneventful and stitch was removed on 9th POD and was discharged on 10 th POD. All patients were followed up after 01 month.

Covid-19 is caused by SARS-COv-2, known commonly as coronavirus. It is responsible for an outbreak beginning in Wuhan in December 2019, then spreading to majority of the countries of the world. Bangladesh exposed this pandemic from mid March and accordingly the healthcare facilities ware equipped by the Government prioritizing the maximum concentration to face the corona load in the hospitals.The surgical facilities are cut short as routine operations are abandoned and only emergency surgeries are ongoing maintaining all the precautions for corona. The existence of this pandemic makes surgical management a challenge as it risks exposing the surgical team to known, suspected or asymptomatic Covid-19 cases. Surgical management has to be limited to cases, that cannot be otherwise conserved or postponed, to limit unnecessary exposure of both the surgical team and the patient to Coronavirus. It also allows diversion of members of the team towards management of Covid-19 pandemic associated increased admissions. One of the main actions taken was surgical prioritization with delaying and deferring hospitalization of non urgent procedures. For that reason, we investigated the effects of implementing conservative approach and compare it to the classical surgical approach in the treatment of confirmed acute appendicitis and its impact on patient's outcome during COVID-19 pandemic. Our results showed that the implementation of the non-surgical approach resulted in a significant improvement in the clinical presentation and the inflammatory profile of patients, in addition to the reduction in the length of hospital stay (LOS) indicating high success rate. Furthermore, short term follow up of those patients showed that the majority (90%) did not need further operative intervention or develop serious complications. Indeed, this correlates well with other reports implementing conservative management in acute appendicitis to be associated with shorter hospital stay and a low risk of late recurrence. This clearly demonstrated that the conservative approach for the management of acute appendicitis represents a feasible, safe and effective alternative to the surgical approach. In addition, our finding revealed that the mean cost of conservative management was around half of the cost of the surgical management. This compares well

with other reports that also showed less financial cost of conservative approach compared to the surgical one. It helped in reducing the financial burdens on patients as well as the healthcare system. For those who were operated the COVID principle were strictly followed keeping in mind that all patients to be considered as COVID-19 positive unless proven otherwise, and operated with proper precautions that need to be exercised for positive patients. Patients were explained the risk of acquiring covid-19 during procedure and hospitalization.

Conclusions

Acute appendicitis, with prevalent Covid-19 and its associated morbidity to the patient undergoing surgical procedures and risk to the operating team can be managed conservatively, even with a higher Alvarado Score on presentation, unless complicated with fecolith, appendicular perforation or abscess or failure to resolve after conservative management. Conservative management decreases the burden on the already overwhelmed hospital resources, medical team due to Covid-19 and limits unnecessary exposure for both patient and the operating team.

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PTB Cast and Low Impact Aerobic Physical Training Enhances Early Recovery from Stress Fracture Tibia in Military Recruits- Study of 81 Cases

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Abstract

Background: Stress fracture occurs due to repetitive micro trauma on the bone over a period of time. Lower limb stress fractures are common and troublesome injuries of military recruit training. Stress fractures are not a single consistent entity, clinical behavior varies by location and causative activity, and have a long spectrum of impact on training cost, training schedule, individual and group psychology of recruits. In this study I have added low impact aerobic physical training along with PTB castand shortened the period to six weeks and rehabilitation time to return to pre-injury level was assessed prospectively. They walked on PTB cast and participated in low impact aerobic physical training both in training ground and gymnasium. Materials and methods: This was a descriptive longitudinal study conducted in Combined Military Hospital, Cumilla Cantonment, Cumilla, Bangladesh, from January 2018 to June 2019. Purposive and consecutive sampling was done. Out of 2635 recruits 81 were diagnosed as case of stress fracture tibia during the period.They were allowed to participate in low impact aerobic physical training for 06 weeks with PTB and 2 weeks after removal of PTB. Their treatment and rehabilitation to pre-injury level (follow-up) were recorded prospectively. Results: 94 patients were clinically suspected to have stress fracture tibia, out of them 81(86.17%) patients were finally diagnosed. Prevalence of stress fracture was 3.07%. 62(76.54%) patients developed stress fracture within 0-8 weeks of training, mean rehabilitation time to return to pre-injury level was 10.31(9-14) weeks, there was no recurrence of stress fracture and all the patients completed 6 months training, none of them was relegated or withdrawn from training on medical ground. Conclusion: Low impact physical training enhances stress fracture union of tibia treated by Patellar tendon bearing cast. PTB cast with low impact physical training is an effective, technically simple method for treating stress fracture of tibia in military recruits with excellent outcome. This method not only treats the fracture but also prevents depressive disorders.

Key words: PTB cast and low impact aerobic physical training

Introduction

Stress fractures are overuse injuries of bone and may be defined as, partial or complete fracture that results from repetitive application of stress of less strength than that required to fracture a bone in a single load.[1] With repeated stress osteoblastic bone formation cannot keep pace with osteoclasticresorption resulting in a zone of relative weakness leading to cortical breach of bone. Cancellous bones are affected by repeated compressive forces leading to impacted fracture.[2] Stress fractures are not a single consistent entity, occurs along a spectrum of severity which have impact on treatment and prognosis.[3] Clinical behavior varies by location and causative activity. Stress fractures predominantly occur in weight bearing bones. Repeated stresses of runners and jumppers are the typical precipitating activities.Lower extremity stress fractures are common

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Received: January 2020 **Accepted:** April 2020

among participates in endurance, high load bearing activities such as running, military recruits and soldiers, athletes.[4] Lower extrimity stress fractures accounts for 80-90% of all stress fractures. The most common stress fractures occurs in tibia (23.6%).[5] Stress fractures are well recognized in military training and athletes and was first reported in 1855 by Breithaupt.[6] The incidence of stress fractures in military recruits can be as high as 12%[7], as compared with a rateof 21.1% of elite athletes[8] and 1% of the general population[9]. Causes of increased stress normally relate to a sustained increase in training and more commonly present in athletes who are female, have suffered prior osseous injury and in military recruits. Symptoms are usually of insidious onset, occurring on exertion; however if allowed to progress, pain can be present at rest or on weight bearing. High index of suspicion and early recognition is the optimal goal to minimize the potential for micro fracture to become macro fracture. Clinical findings include localized tenderness and indirect pain produced by tibial percussion and provocative Hop test.

Background

Stress fractures are the most common cause of loss of training days , this is among the more severe form of injuries of lower extremity musculoskeletal system and needs prolong period of refraining from physical activities for recovery.[10] Conventionally stress fracture in tibia of recruits are treated by long leg back slab for 6-8 weeks , they take complete rest for the said period, which make them depressed due to apprehension of losing job.In India the recruits are treated as hospital admitted case for 7 days followed by leave on medical certificate for 04 weeks and gradual rehabilitation for 6-12 weeks depending upon the severity of their symptoms.[10] This makes others reluctant to report sick early in fear of withdrawal from training,ultimately these cases come in advance stage leading to complications and takes prolonged rehabilitation time.They may also develop disuse muscle wasting and osteopenia.No two stress fractures behave exactly alike .treatment protocol should be individualized to the patient , the causative activity, anatomical site , severity of fracture , individual and group psychological impact should be considered in treatment protocol when dealing with military recruits.[3] In my previous study (Jan 2015 to Dec 2016) stress fracture tibia among military recruits of 03 training centers of Bangladesh Army were treated with Patellar Tendon Bearing (PTB) cast for 8 weeks and rehabilitation time to return to pre-injury level was assessed prospectively. Patients were allowed to participate in training program except physical activities to avoid depression and fear of losing job. In this study I have added low impact aerobic physical training along with PTB cast in the treatment protocol of stress fracture tibia management in military recruits. PTB cast was applied on Recruits with stress fracture tibia, they joined all the training activities except high impact weight bearing physical training (running, jumping etc.) for6 weeks and rehabilitation time to return to pre-injury level was assessed prospectively. They walked on PTB cast and participated in low impact physical training both in ground and gymnasium. Cross low impact training allows rest from inciting activity, maintains cardiovascular fitness while decreasing stress at fracture site.

Biomechanics

In tibia the fracture position can vary according to sporting activity, runners usually have mid to distal 1/3, dancers mid 1/3 and jumping athletes (e.g. tennis, basketball and volleyball) proximal 1/3 injuries.[11] The mid and distal diaphysis of the tibia are the most vulnerable region as this is the narrowest cross-sectional area of the bone and has relatively little surrounding musculature to dissipate applied forces. Compressive forces causes fracture in medial cortex and tensile force causes fracture in anterolateral cortex with high risk of nonunion, specially if the fracture is longitudinal.[12]

Pathophysiology

Stress fractures are material fatigue failure of bone. Repetitive, excessive and intensive weight bearing training of military recruits are well recognized for stress fracture. This unaccustomed training leads to acceleration of bone remodeling that exceeds the bone's intrinsic ability to repair itself. Due to insufficient time for the bone to heal micro fractures subsequently creates a bone stress injury or reaction that eventually results in stress fracture.[13] Poor Nutrition, women with female athlete triad comprising eating disorder, functional hypothalamic amenorrhea and osteoporosis, smoking, alcohol intake are at higher risk of stress fracture.[14] Stress fractures has three stages 1. Crack initiation 2. Crack propagation 3. Complete fracture. Crack initiation typically occurs at site of concentration during bone loading, continuation of loading at a frequency on intensity above the level to which new bone can be laid down and micro crakes are repaired will lead to crack propagation. Continued

loading and propagation allows to coalescence of multiple cracks and the fracture becomes clinically symptomatic. Propagation of a micro crack to a size of 1-3 mm is believed to be large enough to be symptomatic. If the loading episodes are not modified. Bone is able to respond to crack initiation and propagation through adaptive process of remodeling to combat future loading and structure failure. Risk factors for stress include hormonal status, nutritional status, neuromuscular function and genetic factor, abnormal bony alignment. Modifiable risk factors- improper technique / biomechanics, poor running form, improper or worn out footwear, hard training ground.pre-participation condition of the bone and the frequency, duration and intensity of causative activity.[3]

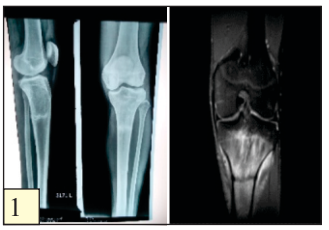
Diagnosis

Stress fracture should be suspected in athletes or military recruits with a recent increase in physical activity or repeated excessive activity with inadequate rest. Insidious onset of pain, particularly on movement is the most common presenting symptom (81%) usually there is no specific inciting event or injury.[13] The classical clinical examination findings are focal tenderness,swelling and rise of temperature at the site of fracture.[15] Sometimes diagnosis become challenging. Medial tibial stress syndrome or shin splints which is characterized by diffuse non localized tenderness along the posteromedial, mid to distal part of tibia and lack of oedema. Other differential diagnosis includes tendinopathy, nerve or artery entrapment syndrome, compartment syndrome and malignancies like osteosarcoma or Ewing's sarcoma.[16] Radiographic films supplements to clinical findings by exhibiting information related to periosteal new bone formation, cortical margin and fracture line. Plain radiography is the first imaging modality for clinically suspected case of stress fracture.Initially plain radiograph often appears normal, initial sensitivity of plain radiograph is 10-20% and after 3 weeks 30-70%. As radiographs fails to determine acute stress fracture other imaging modalities are suggested if urgent diagnosis is required.[4] If fracture is evident in plain radiograph further imaging is not required. Other imaging modalities are bone scintigraphy which is highly sensitive (74% -100%) but nonspecific. MRI is more sensitive and specific than bone scan.[13] Regardless of stress fracture location MRI is the gold standard , MRI can display both bone and soft tissue oedema . Bone oedema is the earliest sign of stress fracture which is not visible in plain x-ray.[4]

Materials and methods

This is a descriptive and longitudinal study conducted in Combined Military Hospital, Cumilla Cantonment, Bangladesh, from January 2018 to June 2019. All the recruits who were diagnosed as stress fracture tibia during this period was treated by PTB cast for 06 weeks and their treatment and rehabilitation follow-up were recorded prospectively. Clinically suspected cases were screened by plain radiograph on initial reporting, symptomatic patients with negative radiograph underwent MRI scan to exclude stress fracture. Patients were kept exempted from physical training since first consultation until confirmation of diagnosis. Diagnosed cases were kept in hospital for 7 days, PTB cast was applied for 6weeks,and they were in training activities except high impact physical training, walked on cast, and participated low impact physical training events, after completion of 06 weeks PTB was removed. They were allowed to undergo gradual, progressive and individualized physical training for 2 - 4 weeks to achieve pre-injury level. Then clinical examination was done and on the basis of that they were allowed to resume regular training. Recruits having stress fracture other than tibia was excluded from the study.

1. X-ray and MRI of stress fracture tibia. 2. Application of PTB cast 3. Physical training in gymnasium 4. Morning physical training with other recruits, 5-6. Low impact physical training in ground.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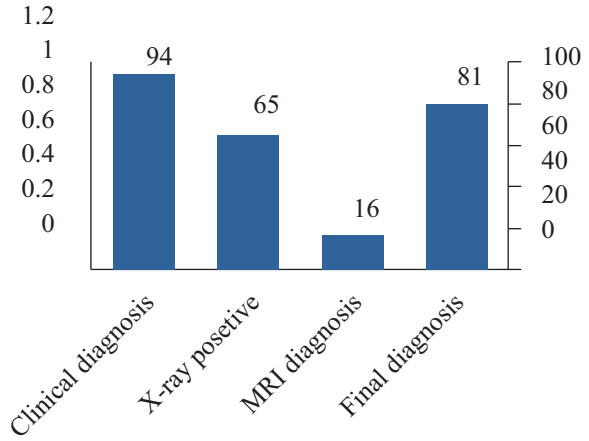
Results

Among 2635 military recruits, 94 were clinically suspected to have stress fracture tibia, of which 81(86.17%) were finally diagnosed as case of stress fracture.Overall prevalence of which is 3.07%.Within this 81 patients 65(80.25%) were diagnosed by x-ray and 16(19.75%) were diagnosed by MRI scan. Bone scan was not done in any patient.



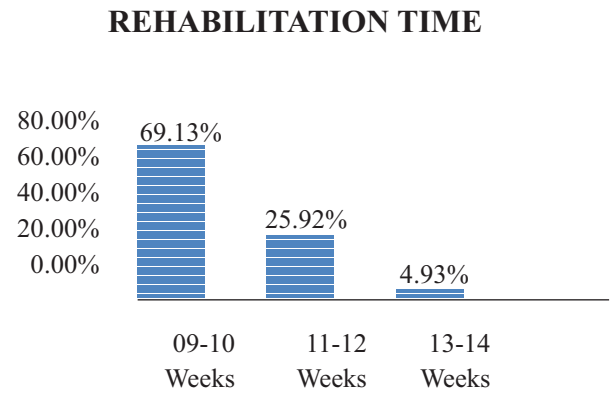


Fig: Diagnostic tool and rehabilitation time of stress fracture tibia patients treated by PTB cast.

In 81 patients, total 90 stress fracturestibia were detected as 9 patients had bilateral fractures. Two patients had associated distal femoral stress fracture and two had stress fracture in both tibia and fibula.Age range 17 to20 years,52 (64.20%) cases in age 17-18 years, 29(35.8%) cases in age 19-20 years, no case above 21 years. 22(27.16%) patients developed stress fracture within 0-1 month, 40(49.38%) patientsin 1-2 months, 06(7.40%) patients in 2-3 months,07(8.64%) patients in 3-4 months,06(7.40%) patients in 4-5 months of joining in military training, no case found after 05 months of joiningin military training.

100%ofthe patients complained of pain on exertion, 59(72.83%) patients had limping after exertion, 20(24.69%) patients complained of pain at rest and Clinical examination revealed local tenderness in all cases and they were positive in provocative Hop test. Local swelling was found in 48(59.24%) cases.

Stress fractures were more common in middle third of tibia. Distribution of fracture site were proximal third 27(33.33%) , middle third 39(48.14 %) , distal third 15(18.52%) , longitudinal fracture 06(7.40%), transverse fracture 75(92.60%), postero-medial cortex 73(90.12%) , anteromedial and anterolateral cortex 8(9.87%) . 45(55.55%) patients became symptom free within 0-2 weeks and 36(44.45%) patients within 2-3 weeks of application of PTB.56(69.13%) patients returned to pre-injury state within 9-10 weeks, 21(25.92%) in 11-12 weeks and 4(4.93%) in 13-14 weeks.Mean rehabilitation time was 10.31 weeks.

There was no recurrence of stress fracture in this series. They were followed up after 04 & 08 weeks and at the end of training, both clinically and radiologically. All the recruits completed 06 months training, none of them was relegated or withdrawn from training on medical ground.

Discussions

Stress fractures in military recruits are very common. Military recruits usually lead sedentary lifestyle before joining in basic training unlike athletes, putting the recruits at higher risk for fractures. When new recruits join in military training, running becomes the primary physical training activity and the majority of stress fractures occur in tibia.[17] During the study period 2635 military recruit of 3 training center of Bangladesh army were study population, 81 recruits were diagnosed as stress fracture tibia, and prevalenceis 3.07%.Incidence is reported in US military recruits to be around 5%.[18] Speculation on the precise reason is difficult. Stress fractures and overuse injuries typically occur after muscular fatigue or with sharp change in physical exertion or training, in these situations the capacity of muscles to protect bone from excessive overload is compromised.[18] History of regular exercise is protective against stress fracture. Longer history of exercise further decrease relative risk of fracture.[18] Physiologically progressive training schedule may be adopted to reduce stress fracture. In this study, patients who were suspected to have stress fracture tibia in clinical examination, radiograph was taken, positive case underwent treatment protocol and

negative cases were selected for MRI for exclusion of stress fracture. We did not wait for the second x-ray to be done after02 weeks, as this may cause worse consequences of delayed diagnosis. High index of clinical suspicion and early MRI for X-ray negative cases may enable prompt diagnosis, reduce rehabilitation time and in creasetraining efficacy. Giladi et al[19] in their study in1986also highly recommended for high index of clinical suspicion. The Director of Defense Rehabilitation (DDR), UK, Best Practice Guideline recommended the use of MRI, rather than X-ray as first line imaging when the clinical suspicion of stress fracture is high.[20] Initial X- ray negative patients were relatively early reporters and were confirmed by MRI. These patients had early recovery and returned to pre-injury state within 09-10 weeks period. Those who reported late , were in bad shape , 04 (4.93%) of them required 04 weeks initial long leg full plaster in addition to PTB for 06 weeks . So high index of clinical suspicion, early referral for orthopaedic consultation is very important for early diagnosis and recovery and for early return to routine training. Majority (76.54%) of stress fractures occur within 0-8weeks, during this early phase of bone remodeling bone resorption temporarily exceeds the ability to withstand increased force.[9] Training activities should be more physiologically progressive during this period. 56 (69.13%) patients returned to pre-injury state within 09 - 10 weeks, 21 (25.92%) in 11-12 weeks and 4(4.93%) in 13-14 weeks, mean rehabilitation time was 10.31 weeks. Gurmeet sing sarla conducted a study in a military Hospital in India in 2018 showed average healing time of stress fracture 5 weeks and return to pre-injury level 18 weeks.[21] He included only X-ray positive cases in his study, this may be one of the cause of increased time to return to pre-injury level .Study conducted at the Royal Marine Commando Training Center in Lympstone, Devon (2004-2008) showed rehabilitation time for stress fracture tibia 21.1 weeks.[9] Behrens et al recommended, patients with tibial stress fracture should be exempted from all high impact physical activities until they are asymptomatic when walking.[22] Regardless of the form of treatment, return to physical activity must be gradual and individualized for each patient to prevent subsequent injury.[23] Patients were followed up at 6, 8 and 10 weeks and at the end of training. Mean follow up time was 12.8 weeks. There was no recurrence of stress fracture in this series. Milgrom et al in their long time follow-up of soldiers with stress fracture found, recruits who suffered stress fracture during basic training are at higher risk of sustaining stress fracture during subsequent training.[24] It is recognized that cause of stress fracture is multi-factorial, prevention is difficult but prevalence canbe reduced by modification of training program. Fundamental of treatment remainsearly identification of symptoms, early diagnosis, sufficient long pause in physical training to prevent re-fracture.

Conclusion

Patellar tendon bearing cast with low impact physical training is an effective, technically simple method for treating stress fracture in tibia in military recruits with excellent outcome. This method not only treats the fracture but also prevents depressive disorders and apprehension to lose the job as they can join all the training programs except high impact weight bearing physical training in the 06 weeks treatment period.[5] Stress fracture is asignificant burden in recruit training, they account for long rehabilitation timeas well as costs of treatment and training. This warrants further research into early detection, prevention, recovery and rehabilitation time.

Conflicts of interest

There is no conflicts of interest regarding the publication of this paper

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Original Article

Development of Ovarian Hyperstimulation Syndrome (OHSS) Amongst Infertile Patients Treated in Fertility Centre, Combined Military Hospital (CMH), Dhaka

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Abstract

Background: Ovarian Hyper Stimulation Syndrome (OHSS) is an iatrogenic life-threatening condition following controlled ovarian hyper stimulation for assisted reproductive technique. **Objective:** The objective of this study was to identify and evaluate the OHSS among Infertile women treated in Fertility centre, Combined Military Hospital (CMH) Dhaka. **Materials and methods:** This retrospective study was done from June 2017 to December 2020. The cases were evaluated according to history, clinical examination, appropriate investigations and statistical analysis done using SPSS. **Results:** A total of 237 patients were treated during this period with 19 patient's developed OHSS. The majority were PCOS (55.7%), with lean body mass (87.7%), aged 25-39 years (84.6%), and 16 were hospitalised in a view to evaluate and treat them properly (95%). Life-threatening complications occurred in 4.4% of patients (deep vein thrombosis/pulmonary embolism, 2.2%; acute renal failure; acute respiratory distress syndrome, 0.9%). Patients 40 years old and those with comorbidities were more likely to develop life-threatening conditions. Patients who developed life-threatening complications had longer hospital length of stay. There was no case of mortality inspire of severe life-threatening complications in 5 of OHSS cases. **Conclusion:** Patients with higher ovarian reserve like PCOS, young age, chance of development of ovarian hyperstimulation syndrome is more. Those having comorbidities are at higher risk for life-threatening complications. Furthermore, these complications are associated with high hospital costs and hospital burden. Given the increasing number of in vitro fertilization patients with medical comorbidities, closer monitoring of at-risk patients may be indicated. As assisted reproductive technology changing from long protocol to antagonist protocol designed to reduce ovarian hyperstimulation syndrome risk, future studies are needed to assess the impact of these changes on hospitalization and complication risk.

Key words*:* Ovarian Hyperstimulation Syndrome, Severe morbidity

Introduction

Assisted Reproductive Technology (ART) is now an essential modality of treatment for infertile couples, which is why its popularity has been increased over the past 30 years. More than 1% of all pregnancies in developed countries are now occurring via ART[1]. For ART specially for in vitro fertilisation (IVF), controlled ovarian stimulation (COS) is a prerequisite because it allows for the development of multiple ovarian follicles at one time[2]. Although COS is generally a safe treatment modality, there is the possibility of serious side effects including ovarian hyperstimulation syndrome (OHSS)[3]. OHSS has a wide pathophysiologic spectrum that ranges from mild illness to severe morbidity and even death[4-6]. OHSS is an iatrogenic and a potentially fatal complication due to an exaggerated response to COH, affects 1-14% of all IVF cycles[1]. The severity of OHSS was diagnosed according to criteria proposed by Golan et al[7]. Mild OHSS was considered when ovarian size was up to 5 cm with laboratory changes only, moderate OHSS was diagnosed when ovarian size was 5-12 cm with nausea, vomiting and abdominal discomfort associated with haematological changes. OHSS was considered severe if the

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Received: June 2021 **Accepted:** September 2021

patients presented with clinical evidence of ascites or hydrothorax as well as abdominal discomfort and dyspnoea. Of the various grades of OHSS, it is the severe form which is life threatening and needs special attention after hospitalisation[2]. Due to the increase in the usage of ART to treat sub-fertility there has been a concomitant increase in OHSS also. The confidential enquiry into maternal and child health, revealed a figure of three maternal deaths due to OHSS in Netherlands and UK per 100.000 stimulated women and extrapolation of these figures to a global situation would give an even more grotesque number[5,6]. The syndrome has a variety of symptoms, including shortness of breath, abdominal distension, pleural effusion, ascites, and oedema[5]. The disease is thought to be a result of an increase in capillary permeability resulting in fluid shifts from intravascular to extravascular spaces that occurs due to increased ovarian secretion of cytokines and vascular endothelial growth factor[4]. Patients with mild disease often present with lower abdominal discomfort, mild nausea and vomiting, diarrhoea, and abdominal distention, which usually resolve in a few days. However, the more severe forms of the disease can be associated with life-threatening complications that can necessitate admission to the hospital for treatment[6]. Life threatening complications associated with OHSS include renal failure, ascites, electrolyte imbalances, hepatic failure, etc[1].

Materials and Methods

This retrospective study was done in fertility centre, CMH Dhaka between June 2017 to December 2020.Patients were selected for IVF and embryo transfer (ET) according to selection criteria of IVF. During this study period, total 237 patients got treatment in this centre and all are included in this study. A total of 19 cases of OHSS were hospitalised following COH among 237 IVF patients (8.1%). A contemporaneous control group was selected from the registry of our own IVF unit at the IVF Centre, CMH Dhaka, in an effort to reduce bias. For every single case of IVF complicated by OHSS, three contemporaneous cases were selected and matched for the maternal age group. The IVF outcome was blinded to the investigators during the selection process. The IVF records and gynaecological notes of all the participants were reviewed and recorded on a standard form. Diagnosis of ovarian hyperstimulation syndrome: OHSS was diagnosed according to history, clinical examination and Imaging.Biochemical evidence included haemoconcentration (haematocrit>50%), leucocytosis (count >25 000/L), increased viscosity, coagulation disorders and reduced renal/liver perfusion. Those who developed severe OHSS less than nine days after oocyte retrieval were considered as early onset, whereas late OHSS was diagnosed if it occurred later[12].Patients with OHSS were hospitalized and received supportive treatment according to their severity. Long protocol with gonadotropin release hormone analog (GnRH) down-regulation was used for controlled ovarian hyperstimulation. Subcutaneous Leuprolide 0.5 mg was given for two weeks prior to administration of gonadotrophin injection. Down-regulation was confirmed when serum oestradiol was less than 50 IU/mL or luteinizing hormone (LH) was less than 10 IU. 3 Recombinant follicle stimulating hormone 150/225/275 IU was initiated for ovarian hyper stimulation depending on patient's age, weight, AFC, AMH, FSH. Trans vaginal ultrasound scan and serum oestradiol were used to monitor the follicular growth from Day 7 onwards. The dosage of gonadotrophin was adjusted according to the ovarian response. The cycle was cancelled when more than 20 follicles or other evidence of severe OHSS was noted. Intramuscular hCG 10,000 IU was given when one or more follicles attained 18 mm and two others of 16 mm size. Oocyte retrieval was carried out 34,Äì36 hours later. Three to four embryos were transferred on the third day after oocyte retrieval depending on oocyte quality, age of patient. Progestogen injections/ suppositories and hCG injection were used for luteal supplementation. Pregnancy test was considered positive if serum beta hCG level eighteen days after embryo transfer was more than 10 IU/L. Pregnancy was defined as the presence of a gestational sac on an ultrasound scan 3-4 weeks after embryo transfer. Any pregnancy loss before the period of viability (28 weeks) was classified as a miscarriage. Ethical consideration: Approval was obtained from the Ethical Committee of CMH Dhaka. Statistical analysis: All the data were analysed using the SPSS 23 statistical package (SPSS, Chicago, IL, USA). Student's t-test, multiple mean comparisons and x^2 test were used with $P < 0.05$ being considered significant.

Results

The patient profile and IVF stimulation are summarized below. There was no significant difference between the two groups in terms of age, primary subfertility, duration of subfertility and the incidence of polycystic ovarian disease.

Table 1: Comparison of demographic characteristics betweenGroup A(patients who developed OHSS) and Group B(who did not develop OHSS)

Demographic characteristics	Group A	Group B	P-value
Age	27.5	29.5	>0.05
Primary subfertility	18/19	168/218	>0.05
Duration of subfertility	7.6	8.5	>0.05
PCOS status	52.63	49.48	>0.05

Table 2: Demographic characteristics of women admitted for IVF (n=237)

Age category	Agerange(years)	Total patients	Percentage
18-24	21		8.8
25-29	72		30.13
30-34	83		34.97
35-39	51		21.53
40-48	10		4.53

Table 3: Demographic characteristics of women admitted for OHSS

Demographic characteristics	Cases	Control	P value
Age (years)	28±3	29±2	>0.05
BMI (kg/m^2)	26±4	24±3	>0.05
FSH (miu/ml)	3.6±3	4±2	>0.05
LH (miu/ml)	2.3±4	3±3	>0.05
AMH (ng/ml)	3±2	2±3	>0.05

Table 4: Type of subfertility among patients treated for IVF(n=237)

Type of infertility	Total patients	Percentage	Case	Control	P-value
Primary	172	72.6	12	160	0.3033
Secondary	65	27.4	7	58	>0.05

Table 5: Socioeconomic status of patients treated for IVF (n=237)

Identity	Total	Number percentage
Officers	29	10.5
Soldiers	181	76.4
Civilians	13	5.5
Non entitled	18	7.6

Table 5: Cycle characteristics of the high-risk women (n=19)

Background variables	Mean±SD
Number of days of stimulation (days)	12±2
Total doses of gonadotropin (IU)	3000±600
Estradiol level on the day of trigger (pg /ml)	10000±2000
No of follicles (>18mm on the day of hCG)1	5±5
Retrieved oocyte	12±5
Mean ovarian size (after preventive measures)	12±4

The OHSS group used less gonadotropin but responded with more oocytes. The duration of stimulation was similar in both groups.

Although a higher number of oocytes were retrieved in the OHSS group, the fertilization rate was similar for both groups. There was also no difference in the number of fertilizations by intracytoplasmic sperm injection and total embryos transferred

Table 6: Grade of OHSS in the study group

Type of OHSS	Number of patients	%	Percentage among total patients
Mild	3	15.8	1.3
moderate	12	63.2	5.1
severe	4	21.1	1.7
total	19	100	8

Table 7: Comparison of pregnancy status between Group A and Group B

Characteristics	Group A	Group B	P-value
pregnancy	5/19	12/218	<0.05

Pregnancy was significantly higher compared with controls (26.3/5.50, P < 0.05). The likelihood of pregnancy was fivefold higher (OR4.78, 95% CI: 2.116,Äì13.238, P < 0.05) in IVF cases complicated by OHSS compared with controls. When the OHSS group was analysed for timing of onset, there were 6 (20.8%) cases of early OHSS, of which no embryo was transferred, so no pregnancy resulted in that cycle, thirteen (68.42%) of the cases were late OHSS and 5 of these were pregnant, making the pregnancy rate per embryo transfer 38.5%. The miscarriage rate was twofold higher but similar between the OHSS and controls (14.0% vs 7.3%; P > 0.05). The multiple pregnancy rate was higher in the OHSS group (59.5% vs 41.5%; P > 0.05) but not statistically significant.

Discussion

OHSS is an iatrogenic, potentially life-threatening complication after IVF treatment involving the use of ovulation induction agent and GnRH agonist. It is also often associated with poor IVF outcome. Despite efforts to prevent this complication, the incidence of severe OHSS at our centre was 1.7% compared with the general occurrence of 1%[13]. Most of the severe OHSS occurred later (10 or more days after oocyte retrieval) and were strongly associated with pregnancy. Other investigators had reported similar findings[4,5,9]. Ariel et al. attributed the high pregnancy rate partly pregnancy was achieved in 42/48 patients with severe OHSS, which gave a pregnancy rate per embryo transfer younger OHSS patients.4 In an attempt to explain the occurrence of OHSS, all the controls in the present series were matched for age to the OHSS group. The possible reason for the incidence of severe OHSS in the present study was the successful pregnancy rate at our centre. However, we caution that severe OHSS should not be advocated to improve IVF outcome. Mathur et al. had distinguished the two distinct forms of OHSS based on the interval after oocyte retrieval[12]. Severe OHSS, which occurs 10 or more days after oocyte retrieval, is considered ”Late” whereas early OHSS is diagnosed when the interval is less than 10 days. Early OHSS can be predicted by the high preovulatory serum estradiol level, indicating excessive ovarian response. This condition can be prevented by various measures, which include coasting, withholding hCG, abandoning the IVF cycle or freezing all the embryos. In contrast, late OHSS is not related to serum estradiol level and might not be predicted easily. Thus, prevention of this condition is difficult. Late OHSS is associated with successful IVF, that is, pregnancy, as compared with early OHSS, where overzealous stimulation or excessive response is a factor. At our centre, most of the OHSS occurred late (79.1%) with a high association of pregnancy (97.8%). This showed that pregnancy was the main reason for the high incidence of severe OHSS at our centre. On the contrary, early OHSS had a pregnancy rate of only 50% per embryo transfer. This observation seemed to suggest that the hemodynamic derangements and presence of high inflammatory mediators affected the implantation rate rather than the pregnancy. In our centre no embryo is transferred in early OHSS, so no pregnancy occurred in that cycle. We realised that some potential early OHSS cases were inevitably excluded because of cycle cancellation. It is our centre's policy to abandon cases identified as having a high risk of developing severe OHSS prior to hCG administration. Although some had advocated measures such as coasting or albumin infusion to prevent OHSS, the advantage of an improved pregnancy rate is yet to be proven[14,15]. Despite strict adherence to our protocol, there were 10 cases of early OHSS in the apparently low risk group. The lower pregnancy rateassociated with this group enabled prognostication of IVF outcome following the complication of OHSS. The incidence of multiple pregnancy was higher in the OHSS group as compared with controls (59.5 vs 49.5%)[1]. Initial reports described late OHSS occurring only in multiple gestations[16].Our results showed late OHSS occurred in both singleton and multiple pregnancies, with a higher incidence in the latter. This finding concurred with that of other investigators[4,12]. The higher endogenous hCG found in multiple pregnancies could explain the tendency to trigger late OHSS. In contrast, the occurrence of OHSS with singleton pregnancy suggests that the absolute level of hCG required to initiate this complication might vary from individual to individual and relates to each individual's unique cytokine profile[3]. Other explanations for increased susceptibility to OHSS included the mutation of the hCG/LH receptor[17] and a disproportionately lower serum Œ±2-Macroglobulin to vascular endothelial growth factor ratio[18]. The present study was not able to comment on the cytokines and molecular profile as they were not assessed. The miscarriage rate was not significantly different when compared with the age-matched, contemporaneous controls (14.3 vs 7.3%, P > 0.05). These findings were similar to that of Mathur et al.[9] and Chen et al[12], who also compared their results to a contemporaneous group. It appeared that when pregnancy (implantation) had occurred, the inflammatory response following late OHSS did not affect the miscarriage

rate. However, there were also other investigators who reported a higher miscarriage rate, ranging from 25 to 40% in the severe OHSS group[5,7]. These studies lacked controls except for that by Abramov et al[5], who used the national IVF registries of several countries as controls. As in most studies with OHSS, ours had the similar problem of small sample size. This was inevitable as complication of severe OHSS was uncommon. In the present study, we had taken measures to minimise other confounding variables. The uniformity in the management of IVF and OHSS were assured as all cases were managed by the same IVF team, in a single centre. We also included a contemporaneous control group, which were selected from our own IVF registry besides matching the age. The importance of the woman's age as the determinant of IVF outcome, including pregnancy, miscarriage and multiple gestation rates was also addressed in the present study. In spite of the above-mentioned facts, the incidence of OHSS is only 1% to 2%[8,9], it remains the significant source of morbidity and mortality in patients undergoing assisted reproduction technologies. The incidence and the duration of the syndrome are strictly related to the surge of pregnancy hormones and the number of implanted embryos[10,11]. Because no method of treatment has been able to eliminate OHSS from the practice of ART, prevention of such risk, non-transfer of embryo or cycle cancellation remain the best strategies. Cryopreservation of all derived embryos has been successfully adopted to reduce the onset of OHSS[8]. Avoiding fresh embryo transfer in patients at high risk of developing OHSS prevents the late onset of the syndrome by simply eliminating the rise of hCG associated with successful embryo implantation. In this manner, some papers highlighted the reduction in the pregnancy chances because frozen-thawed embryo replacement may be associated with a lower pregnancy rate[12]. Ours have the same cause of low pregnancy rate in early OHSS. Skaiker confirmed the results of intravenous albumin and transfer of fresh embryos with cryopreservation of all embryos for subsequent transfer in prevention of ovarian hyperstimulation syndrome[13].They did not observe significant differences between examined groups. Queen et al. showed that transfer of cryopreserved-thawed zygotes in 15 patients yields excellent pregnancy rates with reduction of OHSS symptoms[7]. For comparison between transfer of cryopreserved and fresh embryo, a prospective randomized study was designed by Ferraretti and et al[14].Their results suggest that elective cryopreservation of zygotes prevents the risk of OHSS and does notaffect live birth and pregnancy rates. The last study in which elective cryopreservation of all embryos was compared with fresh ET was done by Fitzmaurice et al[15].

OHSS at our centre were mostly of late onset and associated with a high pregnancy rate. Although multiple gestations and miscarriage showed a higher trend, these were not statistically significant when compared with the age-matched contemporaneous control group embryos reduced the risk of OHSS while achieving acceptable pregnancy rates[9,6,17], Cochrane review concluded that there was insufficient prospective evidence to conclude that cryopreservation prevented OHSS, compared with albumin administration or no cryopreservation[18]. One reason why the paper published on this topic reached different conclusions could be the fact that embryo cryopreservation practice varies widely among assisted conception units. The variation includes policies regarding identification of the specific stage and the protocol used to freeze embryos, identification of the stage for thawing and replacing them, and consequently significant differences in success rates. Our results showed that cryopreservation of embryos reduce the patient's risk of developing the severe form of OHSS, and conserves the pregnancy potential in the form of stored embryos. To explain the different outcomes between the fresh and thawed embryo transfers, multiple factors can be considered. First, the improved techniques of vitrification result in better survival and developmental potential after thawing Also, as we know, natural endometrial preparation is manipulated hormonally; several studies have revealed that ovarian stimulation severely decreased endometrial receptivity for embryo[19,20]. In Addition, embryo transfer during implantation window is a critical factor in the success of pregnancy but it is usually missed in most fresh cycles, although it is achievable through post-thaw embryo cycles[21]. Checa also explained that the multiple eggs generated by ovarian stimulation would increase the release of estradiol from the ovary, which affects the receptivity of endometrial tissue. Some recent studies have shown that ovarian stimulation causes changes to the endometrial DNA pattern, which are not evident in the normal receptive endometrium[22].Therefore, the developmental potential of cryo-thawed embryos is a concern due to synchronization of endometrial receptivity. It was shown that better synchronization was achieved between the embryo and endometrium in frozen thawed natural cycles than in stimulated cycles[19,21]. Our study correlates with these studies regarding increased pregnancy rate incryopreserved embryo transfer.

Conclusions

OHSS is a known complication of controlled ovarian stimulation. Ideally, women at risk for this disorder should be identified prior to stimulation, and stimulation protocols should be selected that minimise the risk of OHSS. The use of GnRH antagonist protocols with a GnRH agonist (with or without low-dose hCG) to trigger final maturation of oocytes is a particularly effective strategy. Other strategies that show some benefit include the use of cabergoline and cryopreservation of all embryos rather than transfer. If OHSS prevention strategies are not effective and a patient experiences severe OHSS, fluid resuscitation, supportive care, paracentesis, and prophylactic anticoagulation are recommended.

Recommendations

1. Women with PCOS, elevated AMH values, and elevated AFC may benefit from ovarian stimulation protocols that reduce the risk of OHSS. (Grade B)

2. Ovarian stimulation protocols using GnRH antagonists are preferable in women at high risk of OHSS. (Grade A)

3. Low-dose hCG co-trigger, luteal hormonal support, or cryopreservation of embryos are strategies that may improve pregnancy rates in this setting. (Grade B)

4. Dopamine agonist administration starting at the time of hCG trigger for several days also may be used to reduce the incidence of OHSS. (Grade A)

5. Additional strategies to prevent OHSS which may be helpful include the use of metformin in PCOS patients (Grade A), aspirin administration (Grade A), and cryopreservation of embryos (Grade B).

6. The mainstay of OHSS treatment includes fluid resuscitation and prophylactic anticoagulation.

7. Paracentesis or culdocentesis may be recommended for management of OHSS when a large amount of ascites is present. (Grade B)

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Original Article

Relationship of BMI and LH Level and LH/FSH Ratio in Sub Fertile PCOS Patient

Begum S [1] , Khan SH [2] , Alam MK [3] , Shakil M [4]

Abstract

Background: Polycystic ovarian syndrome is not a new disease. There is an association between bilateral enlarged ovaries containing multiple cysts and a clinical syndrome of amenorrhoea, hirsuitism and obesity. With the development of radio immuno assay (RIA) for the measurement of gonadotrophin and later that of circulatory sex steroids, a picture of endocrine imbalance emerged. Chronic hyperadrogenic anovulation related disease PCOS is a major cause of subfertility in women. **Objective:** To determine whether there is any impact of BMI on LH level and LH/FSH ratio in PCOS. To determine the BMI, LH level, LH/FSH ratio and to correlate the relationship among them in PCOS women. **Materials and Method:** This was a cross sectional study done on 58 cases from Jan 2013 to Dec 2013 in the department of Obstetrics and Gynaecology, Combined Military Hospital, Dhaka. Patients who were reported at CMH Dhaka with subfertility and USG proved PCOS .In all PCOS women detailed menstrual and obstetrical history, weight, height and WHR measurement, investigation results were included in pre-design structured questionnaire. **Results:** The characteristics of women recruited, showed that 77.6%of them were 20-30 years old. The overweight and subfertile cases were only included. Primary subfertility was in 60% and secondary subfertility in 39.7% cases. WHR was >.80 in 70.7% cases.LH/FSH ratio were >2in 46.6%cases. Correlation was done between BMI and LH level and LH/FSH ratio. BMI group and LH/FSH ratio cross tabulation was done. BMI group25-28 showed LH/FSH ratio > 2 in 21 cases, in 28-31 group 4 cases and in 31-34 group only 2 cases. LH/FSH ratio was inversely correlated with BMI for PCOS women (Υ= 0.21, p<0.009). **Conclusion:** The diagnostic value of LH determinations is retained of PCOS women with <30Kg/m^2. Their findings suggest that LH level is inversely dependent on BMI and negative relation between LH/FSH ratio and BMI. This result disproves the traditional concept about PCOS which regards that the heavier the patient is the higher the LH or worst manifestation.

Key wards: Polycystic ovarian syndrome, Luteinizing hormone, Follicle stimulating hormone, BMI

Introduction

Polycystic ovarian syndrome (PCOS) was previously known as Stein-Leventhal syndrome. It is the most common reproductive endocrinopathy of women during their child bearing age with are ported prevalence of 4-8%[1,2,3].

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Received: May 2021 **Accepted:** August 2021

Approximately 50% of PCOS women are overweight or obese and most of them have the abdominal phenotype. Body mass Index (BMI) is a simple index of Weight for Height that is commonly used to classify underweight, overweight and obesity in adults. Three endocrine findings are usually considered to be indicative of PCOS: elevated Luteinizing hormone/Follicle stimulating hormone (LH/FSH) ratio, abnormally high androgen value and persistent relatively high endogenous estrogen production[4,5]. LH-FSH ratio refers to the relative values of two gonadotrophine hormones produced by the pituitary gland. It is used to be believed that

an elevated LH-FSH ratio of greater than 2:1 or 3:1 was indicative of PCOS, but recently, researchers have discovered that many women with PCOS may not had high ratio, so levels are now an indicator that more testing is needed rather than a conclusive diagnostic tool.

The diagnosis of polycystic ovarian syndrome usually made on the basis of a combination of clinical criteria. Ultrasound is to be the gold standard[6]. The criteria for diagnosis of PCOS based on ultrasonographic data include bilateral ovarian enlargement (>9cm in maximum diameter), 10 or more follicles, 2-10 mm in diameter per ovary and increased density and area of stroma. Although the exact etiology is not clear, PCOS is an abnormality of the hypothalamic pituitary ovarian system. In PCOS LH is tonically elevated throughout the menstrual cycle, FSH is normal or low, the LH/FSH ratio is often greater than 3(three). In obesity where there is excessive fat tissue mass causes chronic hyperinsulinaemia and/or insulin resistance leading to stimulation of theca cells that causes a ovarian androgen production which in turn inhibit sex hormone binding globulin (SHBG) production. As a result there is increased free testosterone level which is changed to estrogen by peripheral conversion in fat or brown tissue. In clinical practice it is difficult to use a single measurement of LH to diagnose PCOS because LH is secreted in a pulsatile manner and the normal range of serum concentration decrease with increasing BMI. Nomograms for interpreting the impact of BMI on LH level are not widely available in clinical practice. Study suggests inverse relationship between LH and BMI in PCOS as LH modified by BMI[7].

Materials and Method

A cross sectional study was conducted among 58 respondents who had Polycystic ovarian syndrome with subfertility according to USG, attendant in GOPD, CMH Dhaka. Patients'age was 20-40 years with BMI ≥25 were included. Age group <20 years and >40 years, BMI <25 and non PCOS women were excluded from the study. Body mass index (BMI) was measured, for each, using the formula; wt (kg)/ht (m2) and the measurements were scored to classify their state of obesity. Blood samples were taken in 2nd day of cycle, those with regular cycles to measure their serum FSH & LH levels using Radioimmunoassay technique, then mean LH/FSH ratio obtained. Statistical analysis was carried out by using the Statistical Package for Social Science version 16.0 for windows. Correlation coefficient was calculated. Qualitative variables were expressed as mean and SD, t test, p value, correlation were measured. Hormone analysis was done by immunoassay.

Results

Table 1: Age distribution of the patients according to age (n=58)

Age in years	Frequency	Percentage (%)
25-30	24	41.4
30-35	28	48.3
35-40	6	10.3
Total	**58**	**100**

Table 1 Shows that majority of the respondents 28 (48.3%) were in the age group 30-35 year's age group, followed by 25-30 year's age group and 30-35 years age group. The mean age group was 26.81±4.78.

Table 2: Distribution of the patients according to their subfertility (n=58)

Subfertility of the respondents	Frequency	Percentage (%)
Primary subfertility	35	60.3
Secondary subfertility	23	39.7
Total	58	100

Figure 1: Percentage of study subject with BMI group

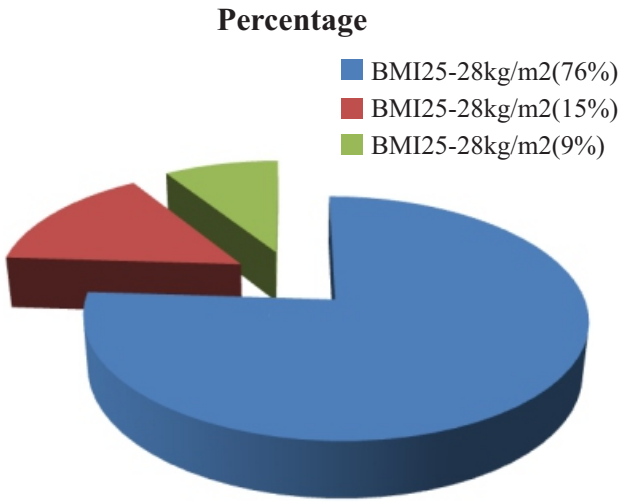


Figure 1 showed BMI in the range of 25-28Kg/m^2 BSA in highest frequency 44 cases (75.9%) and BMI 31-34 Kg/m^2 BSA in 5 cases (8.6%). Average BMI=27.48±2.25.Waist Hip Ratio (WHR) is one of the parameter to show whether obese or overweight. 41 cases out of 58 cases that are 70.7% had WHR > 0.80 that means obese/ overweight.

Table 3: Distribution of study subjects with LH level

LH level Group	Frequency	Percentage (%)
Normal LH Group	25	43.1
High LH Group	33	56.9
Total	58	100

Table 3 Shows 33 (56.9%) patients were with High LH Group and 25 (43.1%) were with Normal LH Group

Table 4: Distribution of study subjects with LH/FSH ratio

LH/FSH ratio	Frequency	Percentage (%)
up to 1	9	15.5
1 to 2	22	37.9
>2	27	46.6
Total	58	100

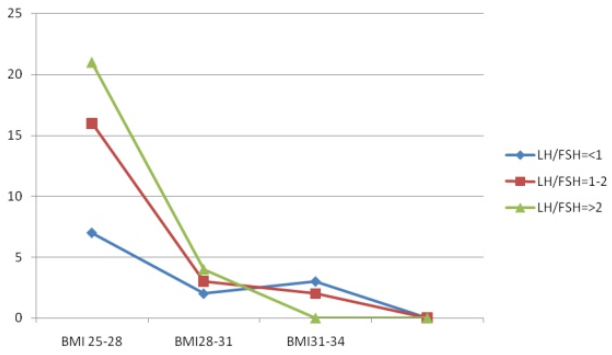
Table 4 Shows according to LH/FSH ratio it was >2 in 27 (46.6%) patients, 1 to 2 in 22 (37.9%) patients and up to 1 in 9 (15.5%) patients.

Table 5: Correlation between BMI group and LH/FSH ratio

BMI Kg/m^2	LH:FSH ratio <1	LH:FSH ratio 1-2	LH:FSH ratio >2	Total	Value(ϒ)
25-28	7	16	21	44	-0.21
28-31	2	3	4	9	
31-34	0	3	2	5	
	9	22	27	58	

LH/FSH ratio was inversely correlated with BMI for PCOS women (ϒ= 0.21, p<o.oo9).

Figure 2: Inverse correlation of BMI with LH: FSH ratio



The graph clearly showed the inverse correlation of BMI with LH: FSH ratio.

Discussion

This study was carried out to determine the relationship of BMI with LH level and LH:FSH ratio in subfertile women. Obesity was 100% in our study due to selection of the patients as an inclusion criteria. In our study all cases were subfertile. Primary subfertility was 60.3% and secondary subfertility was 39.7%. As a part of metabolic syndrome the waist to hip ratio was increased in the subjects with PCOS. In our study 70.7% cases had Waist : Hip ratio (WHR)> 0.80,which is consistent with the earlier study done in BIRDEM as 70.52%[8]. In another study WHR>0.80 was 64%[9]. Increased WHR appeared to have a more important effect than body weight gain alone. LH/FSH ratio is considered normal up to 1. In this study 46.6% cases showed LH/FSH ratio >2 which is consistent with many studies done in our country and abroad[11,12]. In our study about 84.5% of the subject had their LH level more than FSH level which is consistent with LH level more than FSH level 85%. In our study we included the subjects with BMI > 25 Kg/m^2 .Here 75.9% cases showed BMI in the range of 25-28Kg/m^{2}BSA and only 8.6% cases were in the range of 31-34 Kg/m^{2}BSA. The average was 27.10 Kg/m^2[12]. This finding is consistent with mean BMI was 27.10Kg/m^2[9]. The blunting effect of BMI on LH amplitude in PCOS women showed inversely related (ϒ=-0.218, p=<.003). This may explain the heterogeneity of inappropriate gonadotrophin secretion observed in previous studies[11,13]. Our study showed that a BMI of 25Kg/m^2, mean LH pulse amplitude was elevated approximately 27 fold than that BMI of 30 Kg/m^2 .Though single measurement was the limitation the result would have not appropriate. But the result is consistent with the previous studies. Insler et al reported that the nonobese women had significantly higher level of serum LH than obese counterpart and Yanira et al agreed that an inverse relationship between LH and BMI in PCOS[14].

Conclusion

Recently there has been uncertainly concerning the association of inappropriate gonadotrophin secretion and the polycystic ovary syndrome. BMI as an indicator of obesity had a significant impact on LH amplitude with increasing BMI resulted in a decline ratio of LH/FSH ratio seen in the PCOS patients. This result disproves the traditional concept about PCOS which regards that the heavier the patient is the higher the LH or the worst manifestation.

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Original Article

Medical Record Keeping System in Combined Military Hospital Dhaka

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AbstractIntroduction: The medical record is a patient's record, consisting of sufficient data written in sequence of events to justify the diagnosis and warrant treatment and results. It must be adequately informative, highly scientific and legally protective. **Objective:** To assess the status of medical record keeping in Combined Military Hospital Dhaka. **Methods and Materials**: This descriptive study was conducted in Combined Military Hospital Dhaka from September 2018 to February 2019. A total of 200 patient's record was evaluated. Sampling was done by systematic random sampling technique. A total of 45 health care delivery personel were interviewed. Check list used for evaluation of patient's record and semi-structured questionnaire for face to face interview for healthcare delivery personnel. **Results:** Evaluation of the records indicated that all the information recorded satisfactorily in the patient's case sheet. **Conclusion:** The medical record benefits the patient, the doctor, the hospital and public health authorities and contribute to education and research. In this study it was found a satisfactory record keeping system, though no formal training in this aspect to any personnel, but they continuously practice it by their own service experience.

Key-words: Medical record, Medical record keeping system, Military hospital

Introduction

The history of medical records runs parallel with the history of medicine. The first medical record unit was established in 1767 at St. Bartholomew's hospital in England followed by the practice of maintaining patient's register in Pennsylvania hospital in USA in 1752 [1].The term 'Medical record' is used both for the physical folder for each individual patient and for the body of information which comprise the total of each patient's health history. Medical records are intensely personal documents and there are many ethical and legal issues surrounding them such as the degree of third party access and appropriate storage and disposal [2].

Patient care includes a chronological record of care and treatment, namely medical records. Medical Record Department (MRD) has become an essential department of every hospital. The principle is "People forget, but records remember"[3]. The human mind is not a computer that it will always printout documents on pressing the button. So, there may require something in writing or otherwise for the purpose of preserving memory. The medical record may be defined as a clinical, scientific, administrative and legal document relating to patient care in which are recorded sufficient data written in sequence of events to justify the diagnosis and warrant treatment and end results[1].

It is true for the patient care also where medical record is very important and vital. It is a compilation of scientific data derived out of coordinated document and available for various uses either personnel or impersonal to serve the patient, the physicians, the hospital, science of Medicine as well as the society as a whole.

Medical records are perhaps the most useful source of information for quality care rendered. They detail the patient's condition, document all significant interaction between the patient and the care providers, contain

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Received: September 2021 **Accepted:** December 2021

information regarding response to treatment, and have the data in an easily accessible form. It serves as a basis for the planning and evaluation of individual patient care [4].

The medical record in a hospital plays an important role for the benefit of the patient. It has got vital significance clinically for the immediate diagnosis and treatment; for future welfare of the patient and in some cases becoming the deciding factor between life and death. The WHO expert committee on statistics recommended that hospital records and statistics be regarded in all countries as an integral and basic part of the national statistical program [5].

In our country Medical record keeping system has not yet developed to same extent as good as in developed countries. Since no organization can run perfectly without record, like wise medical record should be of great interest to everybody working in the hospital. It may be unpleasant to state that may of our doctors, nurses and other concerned staff does not take adequate interest to maintain medical records. Moreover they are neither being given any formal training for it nor any definite format has been developed in our hospital. There is no definite standard of medical record keeping system in our country.The practice of medical record keeping mainly done from experience. Medical personnel and record keeping personal do not have any formal training on this matter. This study will endeavor in assessing the existing medical record keeping system in Armed forces hospital to improve better patient care in peace and war.

The medical record benefits the patient, the doctor, the hospital and public health authorities and contribute to education and research [3]. The contents of medical records are Demographics, which include information regarding the patient, not medical in nature. It is often information to locate the patient including identifying numbers, addresses and contact numbers. Medical history, Surgical history, Obstetric history, medications and medical allergies, family history, orders, progress notes, test results, administrative issues, production, ownership and accessibility [6].

Medical records may assume many shapes and forms. Classically the medical records of a patient's illness is primarily a written document consisting of entries made by physicians, nurses and other hospital personnel noting observations made on the patient, Conclusions based upon the observations, treatment and services rendered to the patient [7].

The stages of medical records are Formation stage, Collection, indexing and preservation stage, Retrieval stage [8] .The length of the time for how long the medical records will be preserved depends on the hospital or the government policy. Clinicians want records to be kept for indefinite periods. One senior medical record officer considers it is desirable to retain these as for need of the patient up to 10 years, medico-legal inpatient 10 years, outpatient 05 years. Training and research purpose 05-10 years.

The characteristics of good medical records are Complete –that is sufficient data should be written to identify the patient, justify the diagnosis and warrant treatment and outcome, adequate and accurate [3].

Medical record keeping is not developed much in our country. A very few research work so far conducted on it. This study will reflect the prevailing system of Medical record keeping in Armed Forces together with lapses. Attempts will be made for putting some suggestions for improvement. So this study is very important and timely one as records are not only essential for patient care but valuation of hospital services also.

Methods and Materials

This descriptive study was conducted at Combined Military Hospital Dhaka from September 2018 to February 2019. The study was carried out by reviewing the documents of patients who were already discharged and also interviewing the medical persons. Medical records of discharged cases of Surgical, Medical, Gynecological and Obstetric, ENT, EYE and Children ward from September 2018 to November 2018 were the study population and the total number was 10000. Sample size was 200, taking every fiftieth(50^{th}) discharged case sheet. A total of 200 patient's record was evaluated. Sampling was done by systematic random sampling method. A total of 45 (15 doctors+ 15 nurses+ 15 medical assistants) health care delivery personnel were interviewed. Confidentiality was duly ensured to all participants and informed consent was obtained. Check list used for evaluation of patient's record and semi-structured questionnaire for face to face interview for healthcare delivery personnel. Data were processed and analyzed by computer software SPSS version 23 and expressed in frequency and percentage.

Results

Evaluation of the record was based on patient's personal information, medical history, physical examination, physician's initial note, laboratory report, follow up note, discharge note and discharge certificate. Evaluation of the records indicated that personal information was satisfactory

in the patient's sheet. The diagnosis at the time of admission, sex and marital status of the patient had not been mentioned in 25.5%, 30.5% and 42.0% of patient's personal information sheet. While in medical history, family history was not recorded in 25.5% of case sheet. However, satisfactory record of chief complains, history of present and past illness were recorded. Regarding physical examination, all case sheet recorded satisfactory except time of examination and provisional diagnosis not recorded in 2.5% and 3.0% of case sheet respectively. About follow up note 5.5% of medical sheet not recorded with time of examination. (Table-I)

Regarding laboratory reports recorded satisfactorily except short history of illness, which not recorded in 100.0% of case sheet. All points in discharge note recorded satisfactorily other than summary of the case, which was not recorded in 32.5% of medical record sheet.Everything in discharge certificatewere recorded quiet well but description of treatment and results of investigation were not recorded in 32.0% and 36.5% of case sheet respectively (Table-II).

It was revealed that more than half of the respondents (51.5%) were ≥ 30 years of age. Among the respondents 70% were male and 30% were female. A formal interview with the health care personnel such as doctor, nurse and other support service provider revealed that they did not get any formal training on record keeping; however, they continuously practice it by their own service experience.

Table 1: Distribution of records

Distribution of records by	Variables	Recorded		Not recorded	
		Frequency	Percent	Frequency	Percent
Personal information	Admission and discharge number	200	100.0	0	0.0
	Rank of the personnel	200	100.0	0	0.0
	Name of the patient	200	100.0	0	0.0
	Age of the patient	200	100.0	0	0.0
	Address of the patient	200	100.0	0	0.0
	Signature of the physician	200	100.0	0	0.0
	Name of the ward	195	97.5	5	2.5
	Date of admission	195	97.5	5	2.5
	Address of next of kin	195	97.5	5	2.5
	Time of admission	181	90.5	19	9.5
	Diagnosis at the time of admission	149	74.5	51	25.5
Medical history	Rank of the personnel	200	100.0	0	0.0
	Name of the patient	200	100.0	0	0.0
	Age of the patient	200	100.0	0	0.0
	Address of the patient	200	100.0	0	0.0
	Signature of the physician	200	100.0	0	0.0
	Sex of the patients	139	69.5	61	30.5
	Marital status	116	58.0	84	42.0
	Chief complaints	198	99.0	2	1.0
	History of present illness	194	97.0	6	3.0
	History of past illness	189	94.5	11	5.5
	Family history	149	74.5	51	25.5
Physical examination	Date of examination	200	100.0	0	0.0
	Findings of physical examination	200	100.0	0	0.0
	Signature of the physician	200	100.0	0	0.0
	Time of examination	195	97.5	5	2.5
	Provisional diagnosis	194	97.0	6	3.0
Physician's initial	Treatment order	200	100.0	0	0.0
	Date of examination	198	99.0	2	1
	Signature of the physician	197	98.5	3	1.5
	Time of examination	195	97.5	5	2.5
	Diet order	119	59.5	81	40.5
Follow up note	Condition of the patient at the time of admission	200	100.0	0	0.0
	Date of examination	200	100.0	0	0.0
	Signature of the physician	200	100.0	0	0.0
	Follow up note	196	98.0		4 2
	Time of examination	189	94.5	11	5.5

Table II: Distribution of records Distribution of records by Variables Recorded Not recorded

Distribution of records by	Variables	Recorded		Not recorded	
		Frequency	Percent	Frequency	Percent
Laboratory reports	Rank of the personal	200	100.0	0	0.0
	Name of the patient	200	100.0	0	0.0
	Result of test	200	100.0	0	0.0
	Name of the ward	197	98.5	3	1.5
	Type of examination required	197	98.5	3	1.5
	Signature of the requesting physician	197	98.5	3	1.5
	Date of examination	197	98.5	3	1.5
	Signature of the pathologist	197	98.5	3	1.5
	Date of requisition	194	97.0	6	3.0
	Pathological record number	193	96.5	7	3.5

Discharge note	Age of the patients	192	96.0	8	4
	Mention of specimen	176	88.0	24	12
	Sex of the patients	168	84.0	32	16
	Short history of illness	0	0.0	201	100.0
	Diagnosis on discharge	196	98.0	4	2.0
	Signature of the physician	196	98.0	4	2.0
	Advice for further treatment	193	96.5	7	3.5
	Date of discharge	193	96.5	7	3.5
	Time of discharge	187	93.5	13	6.5
	Summary of the case	135	67.5	65	32.5
Discharge certificate	Name of the hospital	200	100.0	0	0.0
	Admission and discharge number	200	100.0	0	0.0
	Rank of the personnel	200	100.0	0	0.0
	Name of the patient	200	100.0	0	0.0
	Date of admission	200	100.0	0	0.0
	Date of discharge	200	100.0	0	0.0
	Diagnosis on discharge	200	100.0	0	0.0
	Recommendation/disposal	200	100.0	0	0.0
	Signature of physician	200	100.0	0	0.0
	Name of husband/father	196	98.0	4	2.0
	Unit/Address of patient	195	97.5	5	2.5
	Name of the ward	196	98.0	4	2.0
	Description of treatment	136	68.0	64	32.0
	Result of investigation	127	63.5	73	36.5

Table III: Distribution of respondents (Doctors, Nurses and Medical personnel)

Variables		Frequency	Percent
Age in years	<25	4	12.1
	25-29	12	36.4
	≥30	17	51.5
	Total	33	100.0
Sex	Male	23	70.0
	Female	10	30.0
	Total	33	100.0
Length of service in years	<10	11	33.3
	10-14	18	54.5
	≥15	4	12.1
	Total	33	100.0
Problem associated with record keeping system	Yes	11	33.3
	No	22	66.6
	Total	33	100.0

Discussion

In this study it was revealed that about the personal information of record keeping all patient sheets found recorded with admission and discharge number, rank of the personnel, name of the patient, age of the patient, address of the patient and signature of the physician. Name of the ward, date of admission and address of the next of kin recorded in 97.5% of the medical record. Time of admission recorded in 90.5% of medical record. Diagnosis at the time of admission, Sex of the patient and marital status of the patient were recorded in the medical record 74.5%, 69.5% and 58.0% respectively. The important 'not recorded information' were marital status 42.0%, Sex of the patients 30.5% and diagnosis at the time of admission 25.5% (Table-I). The finding of the present study was almost similar with the study conducted by Sharif SH[9] with difference in the following findings. In his study not recorded information about marital status 26.6, sex of the patient 23.3%, diagnosis at the time of admission 100.0% . The present study revealed that 99.0% of the patient's chief complaints were recorded in the patient's record sheet followed by history of present illness, history of past illness and family history recorded in the record sheet 97.0%,94.5% and 74.5% respectively. Not recorded information was 25.5% family history.(Table-II). The findings of the present study similar with the finding of the study conducted by Sharif SH[9] except family history which was 33.3%. But dissimilar with the study conducted by Alam MJ [10], where it was found that not recorded information were chief complain 26.0%, history of present illness 51%, history of past illness 43.5%, family history 25%. The present study revealed that regarding the physical examination of the patient Date of examination, findings of physical examination and signature of the physician were recorded 100.0% but provisional diagnosis and time of examination not recorded 3.0% and 2.5% respectively. The findings of the study are similar with the study conducted by Sharif SH[9], where physical examination was recorded 100.0% but dissimilar with the not recorded provisional diagnosis which was 4.6%. In the study conducted by Hoque MA[11],where findings on physical examination was9.0% and provisional diagnosis was 5.0% **.** In this study it was evident that all documents had treatment order. Date of examination, signature of the physician and time of examination recorded in 99.0%, 98.5% and 97.5% document respectively. Diet order not recorded in 40.5% document.(Table-I), which is similar to the finding of the study conducted by Sharif SH[9],

where he found diet order not recorded in 66.0% document. In this study it was depicted that regarding laboratory reports, rank of the personnel, name of the patient, results of test were recorded 100.0% document. Name of the ward,type of examination required, signature of the requesting physician, date of examination and signature of the pathologist were recorded in 98.5% of documents. Date of requisition, pathological record number, age of the patients, mention of specimen and sex of the patient were recorded in 97.0%, 96.5%, 96.0%, 88.0% and 84.0% of documents respectively.(Table-II). Short history of illness was not recorded in 100.0% documents, which is similar with the study conducted by Sharif SH[9], where 1000.0% documents were not recorded. In this study it was shown that regarding discharge note, diagnosis on discharge, signature of the physician, advice for further treatment, date of discharge and time of discharge were recorded in 98.0%,98.0%,96.5%,, 96.5%,93.5% of documents respectively. Summary of the case, time of discharge and diagnosis on discharge was not recorded in 32.5%, 6.5% and 2.0% of documents respectively, which is nearly similar with the finding of study conducted by Sharif SH[9], where he found summary of the case was not recorded 37.3% and diagnosis on discharge was 6.67%documents. In this study it was revealed that regarding discharge certificate,description of treatment and results of investigation were not recorded in 32.0% and 36.5% of documents, which is dissimilar to the finding of the study conducted by Sharif SH[9], where he found that description of treatment and results of diagnosis were not recorded 83.3% and 80.0% respectively .

Conclusion

Hospital records reflect the quality of patient care. In this study it was revealed that Medical record keeping was satisfactory in CMH Dhaka. Here, recorded information was much higher than non-recorded information. It has also been revealed that there was no formal training among the medical personnel and also among personnel concerned with medical record keeping. They learned medical record keeping through continues practice and own service experience. Establishment of good medical record and hospital quality assurance program can ensure better patient care. So,it is the demand of time to develop a complete medical record keeping system in all Hospitals for ensuring quality of the patient care.

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Case Report

Rare Site of Tuberculosis in Bone- A Case Report

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Abstract

Isolated tuberculosis of greater trochanter is unusual and clinical presentation is often vague.Isolated fracture of greater trochanter is also rare.We are reporting a case of tuberculosis of greater trochanter in adult male with radiological presentation in form of erosion of greater trochanter which has not be reported in literature till now to our knowledge

Keywords: Tuberculosis greater trochanter

Introduction

Tuberculosis has been reported in almost all bones of body. Tuberculosis of greater trochanter is well eastablished but is comparatively rare site of invlovement . Greater trochanter tuberculosis is about 2% of musculoskeletal tuberculosis. The clinical presentation of tuberculosis of greater trochanter is often vague. Isolated fracture of greater trochanter is also rare. We are reporting a very rare presentation of tuberculosis greater trochanter as fracture of greater trochanter in an adult patient

Case Report

A 45 Year old male presented with pain over the lateral aspect of the proximal thigh, swelling and difficulty in walking. There was history of fall 2 years back after which he had pain over left trochanteric region. Patient had mild systemic features in the form of low grade fever , anorexia and wt loss. There was a diffuse fluctuating swelling over the greater trochanter which was extending into the thigh.Hip joint movements were mild painful. A complete blood count showed white blood cells to be 11000 /micro Lt with 74.3 % lympho-mononuclear predominance, and 9.5 gm/dl of Hb.

Erythrocyte sedimentation rate was 80 mm/h. On plain radiograph of left thigh with hip showed displaced fracture of greater trochanter with local osteopenia, there was no involvement of hip joint. A plain thoracolumber spine radiogram showed no any destructive changes. Aspiration of swelling revealed pus,surgical exploration was done for drainage and to fix the displaced fracture greater trochanter. Lateral incision based over the greater trochanter was taken around,350 ml of frank pus was drained on cutting the deep fascia.There was gross involvement of trochanteric bursa along with trochanter.Trochanteric fragment was found to be extremely friable and was not suitable for screw purchase.

Histopathological examination revealed an inflammatory granuloma with caseous necrosis and gaint Langerhans cell confirming the diagnosis of tuberculosis. Post operative recovery was uneventful. Following surgery, antituberculosis therapy was started with four antitubercular drugs given per day with divided dose for 2 months, followed by combination of isoniazid and rifampicin upto 16 months. At the end of the therapy, clinical,laboratory,and radiographic

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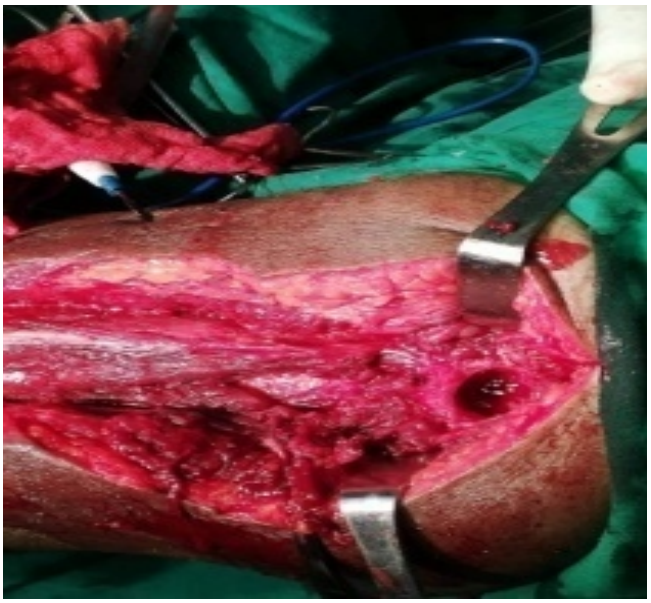
Received: January 2020 **Accepted:** May 2020

examinations showed recovery. Patient was non weight bearing for the next 6 wks. His constitutional symptom gradually decreases. Patient has slight limp on walking. There was no sign of recurrence till his recent follow up at the end of two years.

Figure 1: Xray pelvis A/P view showing erosion of greater trochanter on left side

Figure 2: Picture on exploration of swelling over greater trochanter, showing pus and cheesy material



Discussion

Incidence of tuberculosis of greater trochanter have been reported 1.8%-2.3% of musculoskeletal tuberculosis[1,4,5]. Teale in 1870 first describe tuberculosis of greater trochanter. Clinical presentation is usually vague and usually there is delay in diagnosis. There are many report of tuberculosis of greater trochanter with various presentations. Wassersug in 1940 described eighteen cases of tuberculosis of greater trochanter with incidence of 1.8%. pain in hip was the most common presentation in fourteen cases in rest four cases lump/swelling was mode of initial presentation Ahern in 1958 described thirty two patients; common presentation was pain swelling and sinus. Radiological presentation in these cases were in form of erosion, cavity and sequestrum of Greater trochanter[6]. Lynch 1982 reported clinical details of eight tuberculosis of greater trochanter in past six cases presented initially as a swelling and in one of them it was confused as Lipoma and in two cases sinus was presenting symptom[2]. Mc Neur and Pritchard in 1955 reported thirty eight patients and described either lesion in some cases was tuberculous bursitis swelling of short duration or, it was osteitis of such an extent that it must have been present much longer. In radiograph the typical osseous lesion described was destruction, generalized rarefaction and sequestration, of greater trochanter[7]. In recent reports by Moushine E et al.[8], and Yuksel HY et al.[9], magnetic resonance image was done to see involvement
of greater trochanter and its bursa We have not gone for magnetic resonance image and CT scan as on aspiration of swelling there was frank pus so immediate exploration was planned and on histopathological examination there was confirmation of tuberculosis. There are no specific radiographic features that are pathognomonic of tuberculosis of bones or joints. Common findings that may arouse suspicion of joint involvement include osteopenia, soft-tissue swelling with minimum periosteal reaction, narrowing of the joint space, cysts in bone adjacent to a joint, enlargement of the epiphysis in children, and subchondral erosions involving both sides of the joint[10]. In most of tuberculosis of greater trochanter, radiological picture was in either in form of erosion, cavity, calcification. Till now, there is no case reported with radiological picture of avulsion fracture of greater trochanter. As such isolated fracture of greater trochanter are rare injury[3], these fracture are seen as two distinct types which occur in two different groups. First type is epiphyseal separation which occurs in adolescent group and second is communited fracture of greater trochanter seen in adult. In our case it was like avulsion of greater trochanter

which is rare in that age group. Greater trochanter tuberculosis radiologically might present like avulsion fracture of greater trochanter in elder population.

Conflict of Interest Statement

We declare that we have no conflict of interest.

Conclusion

Tuberculosis has been reported in almost all bones of body. Tuberculosis of greater trochanter is well eastablish but is comparatively rare site of invovement. Clinical presentation is usually vague and usually there is delay in diagnosis.

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Review Article

Addiction to Yaba Drug in Bangladesh: A Frightening Situation

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Abstract

Ya ba Thai:words literally "mad drugs" are tablets containing a mixture of methamphetamine and caffeine.Various logos (commonly "WY" or "R") adorn yaba tablets, which are the size of the end of a drinking straw. In Bangladesh it is uniformly known as "baba", guti, Laal, jinish, loppy etc. The crazy medicine is available everywhere -- from the capital city to remote villages, from slums to posh areas. It's a great concern for the parents and the society. It is estimated that there are about 4.6 million regular users of yaba in Bangladesh and the number is increasing alarmingly every day. Methamphetamine can be ingested, inhaled, snorted or injected intravenously. Commonly, it is available as small rounded pills of different colour e.g. red, orange or green. In all forms it is dangerous and has a high potential for addiction and physical harm. Moderate to chronic use of yaba may lead to physical and psychological dependence, even death. Those who coming off the drug are also at high risk of withdrawal symptoms including depression and suicidal tendency. Its action starts 5-6 minutes after ingestion and lasts for hours, even longer with higher dosages. Its effects depend on the route of use and dose. Effects include euphoria, increased alertness, wakefulness, irritability, aggression, decreased appetite, hot flushes, dry mouth etc. It's now a national concern. Law force agency starts killing operation for eradication. My review article focus on yaba uses, side affect and prevention from addiction. We must create awareness about it.

Keywords: yaba, uses, side effects & prevention.

Introduction

History: Methamphetamine was derived from amphetamine in Japan in 1919. Both of these chemicals were originally used in nasal decongestants and bronchial inhalers. During the 1950s in the United States, methamphetamine tablets were legally manufactured, and used non medically by students, truck drivers, and athletes[1]. From ya khayan (energy pill) in its early days to ya maa (horse medicine), the drug was named ya ba (crazy pill) in 1996[2]. It was given to horses when pulling carts up steep hills and for other strenuous work in Shan State[3]. Though Thailand is one of the largest distributors of yaba, Myanmar is one of the biggest producers of it[4]. The crazy medicine is available everywhere from the capital city to remote villages, from slums to posh areas[5]. It has

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penetrated the society's all strata, students and professionals, the poor and the rich. Methods of Use The most common method of using yaba is oral ingestion. Tablets can also be crushed into a powder and either snorted or mixed with a liquid and injected[6]. In addition tablets can be heated on aluminum foil to produce a vapor which is then inhalted[4].

Discussion

Yaba's effects: Yaba turns methamphetamine and caffeine, two powerful central nervous system stimulants, into a deadly combination. Yaba's effects depend on both the dose ingested and an individuals' metabolism. Within minutes or hours of ingestion, users feel the following effects[7]: Euphoria or a sense of incredible well-being, Wakefulness to the point of insomnia people report not being able to sleep for days, irritability and aggression, especially at higher doses or after the drug has taken full effect, increased strength or stamina, a feeling of physical competence and the ability to "do anything. Dry mouth., Tremors or trembling hands, Rapid heartbeat and raised blood pressure, Headache or "pulsing" feeling in the temples, Elevated body temperature. For those abusing yaba frequently, the damage done to the heart can be substantial. Yaba destroys small blood vessels throughout the body, but especially in the brain and the lining of the heart. This can lead to heart attacks or strokes among frequent yaba users. Chronic abusers may also experience[8]: High blood pressure, weight loss, constant trembling, anxiety, psychotic behavior, delusions and hallucinations, violent behavior, paranoia, symptoms that mimic schizophrenia. Like most central nervous system stimulants, the initial high can be followed by panic, anxiety and delusions, especially at higher doses. "Speed bugs" or "crank bugs," a phenomenon in which users feel like bugs are crawling all over their bodies, can also result from continued yaba abuse. Scans of methamphetamine addicts' brains indicate that these drugs damage critical centers used for logic and reasoning. Reduced dopamine activity in methamphetamine addicts impairs coordination, fine motor skills and areas of the brain devoted to emotion and memory. It isn't known if these changes in the brain can be reversed once an individual stops abusing yaba or methamphetamine.Yaba addiction symptoms include[9]: Yaba is extremely addictive, although the rate of addiction depends on the individual. Yaba addiction symptoms can begin with moderate or habitual yaba use. Tolerance begins building almost immediately, and addiction can occur with just moderate use. This includes increasing needs for greater amounts of the drug. Some addicts take 10 or more tablets a day to achieve their high, shakiness, anxiety and tremors, sleeplessness, loss of appetite and weight loss, pacing or restlessness, poor dental hygiene, missing teeth or blackened teeth, yaba abusers suffer from "meth mouth" or severe dry mouth that leads to tooth and gum disease, red, flaky skin. Many yaba abusers pick at their skin unconsciously, creating red, open wounds that can easily become infected, schizophrenic behavior, unlike what the movies portray, schizophrenia doesn't mean a split personality, but instead a series of delusions and hallucinations[10]. A yaba binge is another sign of addiction. During a yaba binge, users barely eat and do not sleep. Users have been known to take great quantities of yaba for 3 to 10 days, hoping to achieve a high. This usually occurs when abusers have reached a tolerance level and can't easily obtain a high with the previously used quantity of yaba. Massive amounts of meth and caffeine flood the system, causing sleep deprivation. The lack of sleep leads to psychosis, hallucinations and paranoia, compounded by the quantities of yaba ingested during a binge. Yaba users struggle to sleep, but they often forgo eating as well. Like many central nervous system stimulants, yaba acts as an appetite suppressor. Many users stop eating, and over time, develop a skeletal appearance. Some users find that they cannot achieve the same high that they used to get when they started taking yaba because tolerance develops. The human body is an incredibly adaptable organism, and it can even adapt to an onslaught of yaba or other chemicals to maintain homeostasis. Yaba abusers often become violent when they reach this stage. Withdrawal from high amounts of yaba can be deadly, both physically and mentally. The flip side of yaba euphoria is depression and some yaba users who try to quit on their own end up suicidal. Other withdrawal symptoms include seizures, uncontrollable tremors and twitches and high anxiety. For those injecting yaba intravenously, there is a risk of HIV/AIDs and hepatitis B and C[7].The rise of Yaba in Bangladesh According to the Department of Narcotic Control the main consumers of the drugs are students[11]. According to the Director General of the Narcotics Control Board, 7 million drug addicts in Bangladesh of whom 5 million are addicted to Yaba.[7] The trade in Yaba increased during the Rohingya refugee crises, the influx of Rohingya refugees from Myanmar also increases the influx of Yaba into Bangladesh. Yaba bought in Myanmar for 40 cent a pill can be sold for 3-4 dollar in Dhaka, Bangladesh[12]. To procure money for buying drugs, addict make himself associate of criminal group and commit crimes[13]. In a statistics it is shown

that among 253 drug abusers 31% is addicted to cannabis, 26% to alcohol, 24% to phensidyl, 10% to heroin and 9% to diazepam, antihistamine, methamphetamine etc. The male: female ratio is 20:1 and 58% is between 18-35 yrs, 20% is between >35-50 yrs, 5% is between 10-15 yrs and remaining is >50 yrs of age[14]. In May 2018, Bangladesh launched a massive anti-narcotics crackdown that was modeled on the Philippines drug crackdown in which more than 211[15] people were killed in shootout with law enforcement[16],[17]. While yaba abuse is a relatively recent phenomenon in Bangladesh, its widespread availability on the nation's streets has quickly become a national health concern. Just 10 years ago it was considered a niche drug for the well-to-do, but has quickly become a drug of choice among many young Bangladeshis. It is difficult to pinpoint just how serious Bangladesh's yaba problem is, though some estimates suggest there could be well over half a million users in Dhaka alone. The problem is thought to be particularly serious among students and the middle class. “Students consume yaba while lower-income people smoke marijuana. High-income people drinks alcohol,” reported by the Bangladesh Department of Narcotics Control last year. There are three forms of Yaba in Bangladesh, they are R-7, Controller, and Champa[12]. The rise of yaba, locally known as 'baba', in Bangladesh can be attributed to a number of factors, not least it's extremely porous border with Myanmar, the chief producer and exporter of the drug.

Some reports suggest as many as 3 million yaba pills cross the Myanmar-Bangladesh border every day, through as many as 33 land and sea smuggling routes. While reports of drug seizures by police and customs officials are commonplace, authorities seem ill equipped to effectively stem the tide of the illicit drug flowing into the country. The massive volume of yaba entering Bangladesh ensures that the drug is widely available and cheap, often selling for as little as US$2.50 per pill. This accessibility has caused a massive spike in the use of the drug, with yaba trading and use rising by 700 percent between 2010 and 2014, by some estimates[18]. It's now a national crisis. The influx of deadly yaba appears to have gone beyond control despite efforts by law enforcement agencies to contain it. The crazy medicine is available everywhere -- from the capital city to remote villages, from slums to posh areas. It has penetrated the society's all strata -- students and professionals, the poor and the rich. Now yaba is epidemic in Bangladesh. Last year, law enforcers seized department of narcotic control (source) 4crore pieces of the pink tablets, which was shown table -115. But the catch crossed three crore only in the first four months of this year.It gives just a rough estimate of the pervasiveness of yaba as it is believed that only 10 percent of the drug is seized and 90 percent flows into the market[19]. The busting of more and more consignments of the crazy medicine has made the top brass of law enforcement agencies worried as the forces are struggling to stop the invasion of yaba through traditional measures. Over 52 percent of the population falls in the age bracket of 15 to 35 and it is the same prime group that is now getting addicted to the deadly drug, which gives them temporary happiness but in the long run destroys them both psychologically and physically. It causes anxiety and aggression and damages kidney, heart, liver and brain as well[6].

Table 1: Year wise seize of Yaba by Law Enforcing Authority in Bangladesh

Year	Pieces of Yaba in
2008	36,543
2009	1.2 9 lakh
2010	8.12 lakh
2011	13.60 lakh
2012	19.51 lakh
2013	28.21 lakh
2014	65.12 lakh
2015	2.02 Crore
2016	2.94 crore
2017	4 crore

Recommendations

Several fieldwork studies found that many people, especially the youths are eager to get rid of drugs.But unfortunately they can hardly find any way out. The departments of narcotics control, police, BGR etc. either do not work or/and even somehow are related to drug smuggling/business11. According to the discussion with the concerned people such as drug abusers, guardians, teachers, policemen. It is clear that behavioral modification of the abusers is not enough to check the spread of drug and drug trafficking. The concerned people gave the following suggestions6 as destroying the supply chain putting the maximum coordinated efforts at the entry points, ensuring strict punishment for involvement of officials in yaba trade, engaging intelligence agencies under direct supervision of the PMO (there is suspicion that below the PM, hardly anyone is trusted because so much money is involved), holding accountable the political leader and public representative of yaba infested locality, strengthening

intelligence gathering at the entry points, dope test before job requirements, rewards for anti-yaba drive herores, creating awareness through the media, TV channels in particular.

Conclusion

In recent years, drug addiction has significantly increased in the whole world, especially in the South Asian countries like Bangladesh. It is a growing national concern. It destroys the economical and social growth of a country and has threatened the lives of the many youth. Day-by-day the most productive youth segment of our country are getting involved in drug addiction. It is obvious that drug addiction is strongly correlated with age of respondents, their education level, unemployment condition, drug addiction within the family, easy access to drugs, source of money etc.Yaba has gained popularity and has become a "fashionable" drug. Cannabis and Cough syrup (Phensedyl) remains the most popular among the masses because of its low price and easy availability[20]. Physicians say weaning someone off drug addiction is difficult, but not impossible. Support from family members and their monitoring, professional help from doctors, and will power of the patient during inpatient or outpatient drug addiction treatment may help to end dependence on drugs. Although, achieving this goal is not an easy task. It may take a long period to bring change in our society, but as it said truly “where there is a way there is a will”[21]. If we all stand together for this cause, it would definitely bring a ray of hope in saving children's future and brightening the future of the children and the nation.

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Army Medical College Cumilla Journal

Vol-03. No-2, July-2020

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INSTRUCTION TO AUTHORS

The Journal of Army Medical College Cumilla (JAMCCu) is a peer reviewed journal will be published biannually in January and July by Army Medical College Cumilla, Cumilla Cantonment. Manuscript should be prepared in accordance with the *Uniform Requirements for Manuscripts Submitted to Biomedical Journals* recommended by the International Committee of Medical Journal Editors (ICMJE).

Conditions for submission of manuscript

- All manuscripts are subject to peer review.
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- Ethical aspect of the study will be very carefully considered at the time of assessment of the manuscript.
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Preparation of manuscript: Criteria

Information provided in the manuscript are important and likely to be of interest to an international readership.

Preparation

- Manuscript should be written in English and typed on one side of A4 (290 x 210cm) size white bond paper.
- Typing font shall be Arial of 12 size. Double spacing should be used throughout.
- Margin should be 5 cm for the header and 2.5 cm for the remainder
- Style should be that of modified Vancouver
- Each of the following section should begin on separate page:
  a. Title page
  b. Summary/abstract
  c. Text
  d. Acknowledgement
  e. References
  f. Tables and legends

- Pages should be numbered consecutively at the upper right-hand corner of each page beginning with the title page.

Title Page

The title page should contain:

- Title of the article (should be concise, informative and self-explanatory)
- Name of each author with highest academic degree

the Introduction section or the Results section. Relate the observations to other relevant studies. Link the conclusions with the goals of the study, but avoid unqualified statements and conclusions not completely supported by your data. Avoid claiming

- Institutional affiliation of each author
- Name of the department and institute where the work was carried out
- Name and address of the author to whom correspondence regarding manuscript to be made and email address

Abstract

- All articles must have a structured abstract.
- It should not exceed 200 words and should state the purpose, basic procedures, main findings and principal conclusions of the study.

Text

The text should be divided into sections with the following headings: Introduction, Materials and Methods, Results, and Discussion.

Introduction: The purpose(s) of the study should be clearly stated. Summarize the rationale for the study or observation. Give strictly pertinent references only, and do not review the subject extensively. Do not include data or conclusions from the work being reported.

Materials and methods:

It should include the place of the study, period, the subjects (number and type), the treatment or intervention and the type of statistical analysis.

Results: Present results of your study in logical sequence in the text, tables, and illustrations. Do not repeat in the text all data in the tables or illustrations, or both: emphasize or summarize only important observations.

Tables

During preparation of tables following principles should be followed:

- Tables should be simple, self-explanatory and should supplement, not duplicate the text.
- Each table should have a title and typed in double space in separate sheet.
- They should be numbered consecutively with roman numerical in order of text. Page number should be in the upper right corner.
- If abbreviations are to be used, they should be explained in footnotes.

The figures and photographs

- Should be used only where data cannot be expressed in any other form
- Should be unmounted, glossy print in sharp focus, 12.7 x 17.3 cms in size.
- Should bear number, title of manuscript, name of corresponding author and arrow indicating the top on a sticky label and affixed on the back of each illustration.

Legend

- Must be typed in a separate sheet of paper.
- Photomicrographs should indicate the magnification, internal scale and the method of staining.

Units

- All scientific units should be expressed in System International (SI) units.
- All drugs should be mentioned in their generic form. The commercial name may however be used within brackets.

Discussion: Emphasize the new and important aspects of the study and conclusions that follow from them. Highlight the important/major findings first, then highlight the less-important findings. Do not repeat in detail data or other material given in priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such. Recommendations, when appropriate, may be included.

References

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Acknowledgements

Individuals, organizations or bodies may be acknowledged in the article and may include:

- Name (or a list) of funding bodies.
- Name of the organization(s) and individual(s) with their consent.

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Manuscript should be submitted to the Executive Editor and must be accompanied by a covering letter and following inclusions:

- A statement regarding the type of article being submitted.
- A statement that the work has not been published or submitted for publication elsewhere.
- A statement of financial or other relationships that might lead to a conflict of interests.
- A statement that the manuscript has been read approved and signed by all authors.
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- A letter from the head of the institution where the work has been carried out stating that the work has been carried out in that institute and there is no objection to its publication in this journal
- If the article is a whole or part of the dissertation or thesis submitted for diploma/degree, it should be mentioned in detail and in this case the name of the investigator and guide must be specifically mentioned.
- The authors have followed the official secret act.Submissions must be in triplicates with three sets of illustrations. Text must be additionally submitted in a CD.

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Example of Title Page

The title of the article :

A. Author's names and institutional affiliations:

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G. A running head:
H. Word counts of abstract:
I. The number of tables:
J. The number of figures:

Disclosure of Contribution of Authors

Corresponding author

As principal investigator Dr

had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design .....

Acquisition of data .....

Analysis and interpretation of data .....

Drafting of the manuscript.....

Critical revision of the manuscript for important intellectual content .....

Statistical analysis .....

Administrative, technical, or material support .....

Supervision.....
.

Covering Letter for Article Submission

Date .....

To

The Editor

Journal of Army Medical College Cumilla (JAMCCu)

Sub: **Submission of manuscript**

Dear Sir,

We are submitting our manuscript titled .....

by.....1.....

2.....3.....4 etc.
for publication in your esteemed journal. This article has not been published or submitted for publication elesewhere.

We believe that this article may be of value to health professional engaged physiology/biochemistry/ pharmacology/— We are submitting 2 copies of manuscript along with an electronic CD.

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1.x 2.x 3.x

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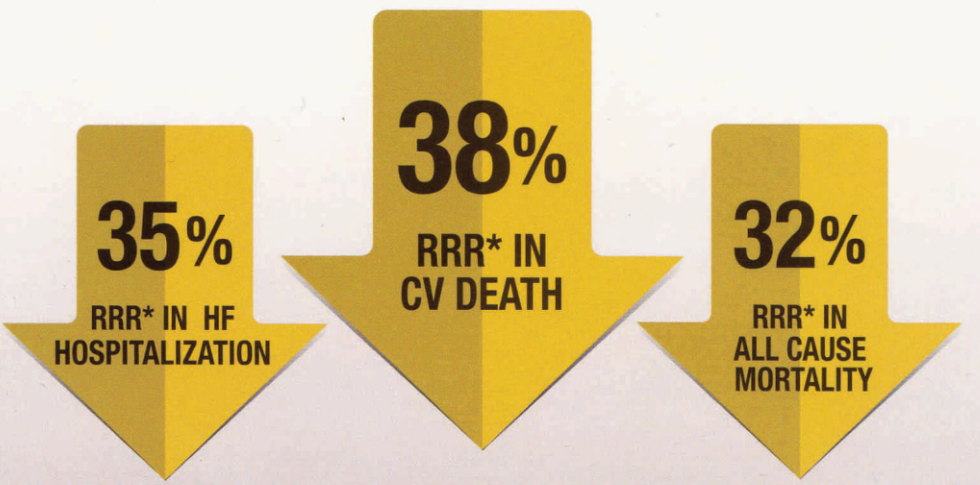

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*RRR= Relative Risk Reduction
**Prescribing information will be available upon request.

Reference:
1. Zinman B, Wanner C, Lachin JM, Fitchett D, Bluhmki E, Hantel S, et al. Empagliflozin, Cardiovascular Outcomes, and Mortality in Type 2 Diabetes. N Engl J Med. 2015;373(22):2117-28.

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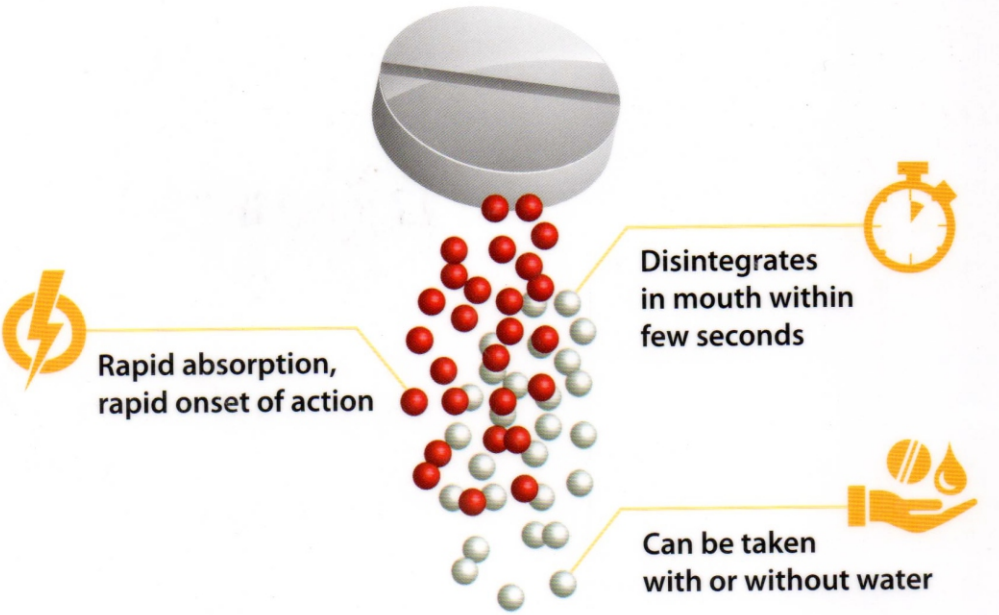

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