DANC Journal of Diabetic Association Medical College, Faridpur

Vol. 2, No. 1, January 2018

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Official Journal of Diabetic Association Medical College, Faridpur (An Institution of Faridpur Diabetic Association)

Web Address: www.damcf.org; http://damcf.org/site/journal; E-mail: journal.damcf@gmail.com

Journal of Diabetic Association Medical College, Faridpur (JDAMC)

Vol. 2, No. 1, January 2018

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The Journal of Diabetic Association Medical College, Faridpur (JDAMC) is the official journal of Diabetic Association Medical College, Faridpur. The journal is published twice in a year i.e. January and July. It accepts original articles, review articles, and case reports. Complimentary copies of the journal are sent to libraries of all medical and other relevant academic institutions in the country and selected institutions abroad.

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Published by: Professor Dr. Jitesh Chandra Saha Editor-in-Chief, JDAMC

- Designed by : Nizam Khan
- Printed by : Radiant Printing & Packaging 27, Nilkhet Babupura, New Market Dhaka-1212. Phone: 01712571681

Address of correspondence: Editor-in-Chief, JDAMC

1st Floor, Room No-204, Diabetic Association Medical College, Faridpur. Jheeltuly, Faridpur-7800, Bangladesh. Cell: +8801711431902 Web Address: www.damcf.org; E-mail: journal.damcf@gmail.com

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From the Desk of the Editor-in-Chief

Congratulations

All praises to the Almighty. It is a great pleasure that Diabetic Association Medical College, Faridpur is the first private medical college in the South part of Bangladesh, going to publish it's third scientific journal. I solely praise our devoted researchers and doctors who contribute themselves to achieve this great task.

The aim of this journal is to enhance and upgrade the research work of our teachers in the field of medical science. It provides an integrative forum for medical researchers across the globe to exchange their knowledge and views. It also helps us to promote communication among fellow academicians and researchers worldwide. It provides an opportunity to academicians in exchanging their knowledge that is directly relevant to all domains of health sciences.

I would like to congratulate our journal committee and all concerned personnel for the publication of this issue. I hope this journal will develop a new channel for authors for disseminating their research findings. Honorable medical researchers are invited to submit their research paper for the next issues.

Lastly, I express my heartfelt gratitude to all the researchers for their cordial Endeavour. I expect regular publication of the biannual issues of this journal would brighten the academic and research environment of this institution. I am very much hopeful for the better outcome of this journal.

Professor Dr. Jitesh Chandra Saha Editor-in-Chief, JDAMC

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Information for Authors

General Information

Aims & Scope:

The Diabetic Association Medical College journal is a scientific journal dealing with clinical medicine, basic sciences, epidemiology, public health and various health care specialities. It is an official organ of Diabetic Association Medical College and going to be published biannually (January and July).

The journal publishes articles of authors from any part of the globe/country. It intends to publish the highest quality material on all aspects of medical science. It accepts original research articles, review articles, short communications, case reports and letters to editor. In addition, it provides readers with opinion regarding the articles published in the journal. Complimentary print copies of the journal are sent to libraries of all medical colleges and other relevant academic institutions in the country.

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Risk Factors of Asthma in Children

Biswas B K

Asthma is one of the most common chronic disease worldwide, affecting almost 300 million people with a continuously increasing prevalence¹. It is also the main chronic disease in childhood, affecting 10% of children. A great effort is currently being focused on the search of preventive strategies, which seems feasible based on evidence suggesting that the onset of atopy and asthma may be strictly connected to several events occurring in very early stages of life. In particular, exposure to antibiotics in fetal and neonatal period², being born by cesarean section³, formula feeding, maternal diet, and the variety of microbes one is exposed to may play a key role⁴.

Family and twin studies have indicated that genetics plays an important role in the development of asthma and allergy⁵, likely through several genes of moderate effect (i.e, genes associated with the relative risks in the range of 1.2-2)⁶.Genome-wide linkage studies and case-control studies have identified 18 genomic regions and more than 100 genes associated with asthma and allergy in 11 different populations. In particular, there are consistently replicated regions on the long arms of chromosomes 2,5,6,12 and 13⁷.A recent genome-wide association study, identified a new gene,ORMDL3,that exhibited a highly significant association with asthma ($p < 10^{-12}$)⁸.

Prenatal tobacco smoke, prenatal maternal smoking has been consistently associated with early childhood wheezing⁹, and there is a dose-response relation between exposure and decreased airway caliber in early life¹⁰. Studies have shown a clear prenatal effect of smoking and tobacco smoke: this effect is increased when combined with postnatal smoke exposure.

In the last decades, a possible role of gut microbiota in allergic disease pathogenesis has been demonstrated. Next generation sequencing techniques have allowed the identification of a distinct microbiome in the healthy lungs. The lung microbiome is characterized by the prevalence of bacteria belonging to the phylum Bacteroidetes (mostly prevotella and veilonella spp) in healthy subjects and to the phylum Proteobacteria in asthmatics (mostly Hemophilus, Moraxella, and Neisseria spp). In asthma and as well as in other diseases, the lung microbiome composition changes due to a disruption of the delicate balance between immigration and elimination of bacteria. The lung microbiome can interact with the immune system, thus influencing inflammation. Eary infections with viruses,

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Prof. Dr. Barun Kanti Biswas Professor and Head, Department of Paediatrics, Diabetic Association Medical College, Faridpur. Email:drbarun2008@yahoo.com such RSV, may alter the microbiome composition favoring the emergence of Protebacteria, a phylum which is also linked to the severity of asthma and bronchial hypersensitivity. Lastly, antibiotics may alter the gut and lung microbiota and potentially disturb the relationship between the microbiota and the host. Therefore antibiotics should be prescribed with increasing awareness of their potential harmful effects on the microbiota in young children with or without asthma¹¹.

Rapid urbanization and industrialization are also a contritubuting factors for increasing prevalence of asthma. Considerable evidence links exposure to air pollutants (such as particulate matter, mixed traffic-related air pollution, and polycyclic hydrocarbons to asthma in chidren. Polycyclic hydrocarbons (PAH) are a group of hydrocarbons with two or more fuse aromatic rings, are byproducts of incomplete combustion of tobacco, wood, coal, fossile fuels and other organic substances¹². PAH can readily be absorbed through skin, lugs and gastrointestinal tract. Underlying mechanisms o PAH-asthma association includes increasing oxidative stress, stimulating inflammatory response, enhancing sensitization to aeroallergens and epigenetic remodeling. In addition to asthma, vitamin D insufficiency (a circulating 25(OH)D level<30ng/ml) may modify the detrimental effects of PAH exposure on lung function¹².

Analysis of combined data collected between 1 to 15 years of age demonstrated that higher maternal vitamin D & E intakes during pregnancy were associated with a reduced likelihood of being diagnosed with asthma in the first 15 years :hazard ratio(95%CI)per quartile increase in vitamin intake of 0.87(0.78-0.98) and 0.88(0.78-0.98), respectively. Lower maternal vitamin D and E intakes during pregnancy are associated with increased risk of children wheezing and being diagnosed with asthma in the first 10 years but not after puberty, suggesting that postnatal exposure predominate in the etiology of incident asthma as children transition through puberty into adulthood¹³.

Asthma comprises a range of heterogeneous phenotypes that differ in presentation, etiology and pathophysiology. The risk factors for each recognized phenotype of asthma includes genetic, environmental and host factors. Along with above mentioned factors some other factors should also be considered. They are pollen, indoor air pollutants (like mosquito coils, parental smoking, hair-dye, powders, perfumes & scents etc), pets, cockroaches, house dusts (house-dust mite, dermatophagoides pteronyssinus, has now been implicated as the most important cause of allergenicity of the house-dust allergens). Foods like cow's milk meat, eggs, wheat, nuts, chocolates and various food additives, and preservatives may be considered as risks factors in a good number of children.

Asthma continues to be a major health issue. Globally 300 million people have asthma and societies transition to a modern urban lifestyle, by 2025,an additional 100 million people will have asthma¹³. The overall disease burden of asthma remains high for those affected and healthcare systems. Investigation into asthma causation remains a key research priority.

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Sociodemographic Characteristics of Drug Abusers in a Selected Hospital of Dhaka City

Kabir S M H¹, Begum M², Ahmed J³, Kayum⁴, Mazumder A H⁵, Islam S S⁶, Sabbir A S M⁷

Abstract

Drug addiction is a social curse involving all classes of people for ages. Not only it increases individual's morbidity and mortality but also creates social unrest and reduces the national productivity frequent assessment surveys have provided insights into pattern and required responses. Respondents were interviewed to find out their various socio-demographic characteristics, reasons and patterns of drug abuse. This cross sectional descriptive study carried out on 158 admitted patients in "Thikana Hospital" of Dhaka city for de-addiction between the period of October 2015 - September 2016. A pretested and predesigned questionnaire was used in evaluating the patients by two or more sittings. Amongst 158 patients, studied 94.30% were male. Majority (62.02%) of patients were in the age group of 21-30 years with a mean age of 28.31 ± 8.45 year. 62.12% patients were married and 48.10% had education up to higher secondary level.

Most of the patients were either unemployed (29.11%) or student (27.21%). 36.70% were spending 101-500 Tk/day .Moreover their (38.60%) family income was 15001 - 30,000 Tk/month. 62.82% were dependent of self to arrange money for purchasing drugs. The reason behind starting drug abuse were mainly peer pressure (49.37%) followed by curiosity (26.58%). The mean age of starting drug was 19.42 ± 7.68 years and majority (68.35%) were addicted to drug for the period between 1-5 years. Only 4.43% had positive family history of drug abuse. Regarding route of drug abuse ingestion was most popular (54.43%). 10.76% patients were using injectable route. Amongst abused drugs tablet Yaba was most popular equal to multiple drug abusers (21.52%) followed by heroin inhalation (14.56%) and phensidyl intake (13.92%).

As revealed in this study younger generation are vulnerable to abuse drug because of personal familial social reasons complicated by factors like poor law enforcement and national economy. Apart from strict anti-drug trafficking policy government should promote and support the public and private de-addiction centres so that patients of all classes can afford the modern management and return to normal social life.

Keywords: Socio-demographic Profile, Drugs Abusers.

Introduction

Drug addiction or substance abuse is a chronic, often

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Colonel (Dr.) S M Humayun Kabir. MBBS, MPH, MPhil Assistant Director of Health and Pathology. Medical Directorate, Army Headquarters, Bangladesh Army E-mail: relapsing brain diseases that cause compulsive drug seeking and use despite harmful consequences to the individual who is addicted and to those around them. Although the history of substance abuse is as old as mankind itself, recently it has become a global problem that is influenced by social, economic, political and psychological factors. The problem is not merely that of an individual or a community and a drug but involves interactive between tried. As hemmed between largest opium producing zone 'Golden Triangle' and 'Golden Crescent'. Bangladesh is a natural transit zone of drugs. But with socioeconomic development over the past few decades, the drug abuse scenario in the region has changed rapidly. The changes are seen in terms of availability, choice of psychoactive drugs, users and their sociodemographic characteristic. As of recent investigation, Bangladesh has 7 million drug addicts, 'over half of them are addicted to yaba and this number is rising in alarming speed irrespective of class or region¹.

This study aims to assess the socio demographic profile of drug addicts admitted in a prominent drugs DE addiction centres of Dhaka capital of Bangladesh.

Materials and Methods

This cross sectional descriptive study was carried out in a private drug de-addiction hospital named 'Thikana" (3/6, B

Block, Humayun Road) in Mohammadpur, Dhaka 1207, which is almost situated at the centre of Dhaka city. This centre has one full time consultant psychiatrist, three medical officers, one clinical psychologist, one social workers and four staff nurses and other supporting staffs.

Over a period of one year (Oct 2015- Sep 2016) 158 substance users who were admitted in the hospital were included in the study after obtaining consent from the patients in cases of adults and from parents in cases of minors. Patients who were mentally retorted, intoxicated, seriously ill or unwilling to participate in the study were exchanged. Two or more sitting were carried out to build a rapport and confidence amongst the patients. Which helped in extracting more information's

A pretested and predesigned questionnaire was used in evaluating the patients. The questionnaire covered details regarding age, education, occupation, substance (s) used duration of addiction and relevant family history. Data were also obtained regarding reasons for starting drugs, source and amount of money spent for procuring drugs etc.

Descriptive analysis (Percentage, mean and standard deviation) was performed using software package and social sciences (spss) 19.0 version.

Results

After analysis results was published as follows

Table 1: Distribution of respondents	by	age,	Sex,	religion
& marital status (n=158)				

Variables		Frequency	Percentage
Age (in years)	16-20	07	4.43
	21-30	98	62.02
	31-40	39	24.68
	41-50	11	6.96
	>50	03	1.90
	Range	16	-59
	Mean <u>+</u> SD	28.31	<u>+</u> 8.45
Sex	Male	149	94.30
	Female	09	5.70
Religion	Muslim	146	92.41
	Hindu	10	6.39
	Buddhist	-	-
	Christian	02	1.26
Marital Status	Unmarried	52	32.91
	Married	95	60.12
	Separated divorced	11	6.96

Table 1 shows that among all the respondents 149 (94.30%) were male and 9(5.70%) were female. The mean(\pm SD) age of the patients was 28.31(\pm 8.45) years, with a range of 16-59 years. Majority 98(62.02%) patients were in the age group of 21-30 year followed by 31-40 years 39(24.68%). Regarding religion 146(92.41%) patients were Muslim and 10(6.39%) were Hindu. Most 95(60.12%) of the respondents were married, 52(32.91%) were unmarried whereas 11(6.96%) were separated or divorced.

Table	2:	Distribution	of	the	respondents	by	education,
occupa	itio	n and econom	nica	ıl sta	tus (n=158)	-	

Varia	ables	Frequency	Percentage
Educational	Illiterate	08	5.06
Status	Primary	11	6.96
	Secondary	29	18.35
	Higher Secondar	76	48.10
	Graduatio or More	34	21.52
Occupation	Student	43	27.21
	Employe	22	13.92
	Unemployed	46	29.11
	Business	36	22.78
	Day labor/ farmer	11	6.96
Monthly	\leq 5000	18	11.39
Family Income	5001-15,000	38	24.05
(15,001-30,000	61	38.60
	30,001-50,000	21	13.29
	>50,000	20	12.66

Table 2 shows that 76(48.10%) respondents had education up to higher secondary level followed by graduation or more 34(21.52%) and secondary level 29(18.35%). Regarding occupation 46(29.11%) respondents were unemployed followed by students 43(27.21%) and business 36(22.78%). About 61(38.60%) respondents had monthly family income Tk. 15001-30,000 followed by 38 (24.0\%) had Tk. 5001-15000 and 21 (13.29\%) had Tk. 30001-50000.

Variab	les	Frequency	Percentage
Amount spent	≤ 50	41	25.95
per day (in Tk)	51-100	39	24.68
	101-500	58	36.70
	501-1000	16	10.13
	>1000	04	2.33
Source of	Self	104	65.82
money to	Family	17	10.76
purchase drugs	Friends	09	5.70

Table 3: Distribution of the respondents by daily expense for drugs and their sources (n=158)

Table 3 shows that majority of the respondents 58(36.70%) were spending between 101- 500 Tk/ day followed by \leq 50 Tk/day by 41(25.95\%) and 51-100 Tk/day by 39(24.68\%). To arrange money for purchasing drugs 104(65.82%) were dependent on self, 17(10.76%) were dependent on family and 28(17.72%) were involved in some sorts of crime like thief/hijacking etc.

28

17.72

Thief

Table 4: Distribution of the respondents by reasons,duration and family history of drug abuse (n=158)

Varia	ables	Frequency	Percentage
Reasons for	Peer pressure	78	49.37
starting drug	Curiosity	42	26.58
	Unemployment	18	11.39
	Familial disharmony	12	7.59
	Failure in love	08	5.06
Duration of	<5	108	68.35
drug abuse (vears)	5-10	39	24.68
())	10-15	10	6.33
	>15	01	0.63
Mean age of starting		19.42 +	7.68 years
Family history	Yes	07	4.43
of drug abuse	No	151	95.57

Table 4 shows that the reasons behind starting drug abuse were mainly peer pressure 78(49.37%) followed by curiosity 42(26.58%) and frustration due to unemployment 18(11.39%), familial disharmony 12(7.59%) and failure in love 8(5.06%). Most of the respondents 108(68.35%) were addicted for the period between <5 years followed by between 5-10 years 39(24.68%). The mean(±SD) age of starting drug was $19.42(\pm7.68)$ years. Only 7(4.43%) had positive family history of drug abuse.

Varial	oles	Frequency	Percentage
Route of drug	Ingestion	86	54.43
abuse	Inhalation	30	18.99
	Injectio	17	10.76
	Multiple	25	15.82
Type of drug	Sedatives	15	9.49
abused	Phensidy	22	13.92
	Cannabis	07	4.43
	Heroin	23	14.56
	Pethidine	14	8.86
	Alcohol	09	5.70
	Yaba	34	21.52
	Multiple	34	21.52

 Table 5: Distribution of respondents by route and type of

Table 5 shows that drug abuse by ingestion was the most popular 86(54.43%) followed by inhalation 30(18.99%) and multiple routes 25(15.82%). 17(10.76%) were using injectable route 34(21.52%) were addicted to tablet Yaba (Methamphetamine) which is equal to multiple substances abuses. Heroin 23(14.56%) and phensidyl 22(13.92%) were next popular amongst addicts.

Discussion

drug abuse (n=158)

In this study total 158 admitted patients of a private deaddiction centre of Dhaka city were included irrespective of their sex and age. The participants were predominantly male (94.30%). This findings simulates with the findings of Lucy et al² who found it to be 96.1% whereas it was 100% male in the study carried out by Gupta VK et al³. This may be due to economical dependency of females on males and also due to difficulty to procure the illegal drugs by themselves.

The range of age distribution in present study was 16-59 years with mean age of 28.31 ± 8.45 years. Majority (62.02%) of respondents were in age group of 21-30 years as also found in other studies. Regarding religion 92.41% patients were Muslim as Bangladesh is a Muslim dominating (90%) country. Most of the patients (60.12%) in the study were married followed by unmarried group (32.91%) and separated or divorced group (6.96%). So more of the married patients take treatment for de-addiction may be due to motivation or pressure of family members.

In this study 76 (48.10%) patients had education of higher secondary level followed by graduation or more (21.52%). And majority (38.60%) had monthly family income of Tk. 15001-30,000. This proportionately higher educational status and monthly income implies that this pvt hospitals are not affordable to patients of all classes of society and also the rising trend of addiction in upper class. This contradicts the findings of study carried out in government hospital by Singh et al⁴ who found that most of the drug abuses were educated up to primary (40.13%) and secondary level (41.10%). As most patients were from higher family income group in this study, daily spending for drug in majority of patient (36.70%) was 101-500 Tk similar to the Indian study by Gupta VK et al³ who found it to be average 170.63 Rs/day.

65.82% patients of this study group relied on self for spending on drugs. But still this causes problems to the family as major part of income is spent by addicts for obtaining drugs and other basic needs of family remains unfulfilled. At the same time a substantial percentage of addicts (17.72%) gets involved in thief, hijacking or in this study other antisocial or criminal activities to arrange money for procuring drugs.

Regarding reason to start drug abuse peer pressure was responsible for 49.37% patient followed by curiosity (26.58%), unemployment (11.79%), familial disharmony (7.59%) and failure in love (5.06%). Gupta VK et al³ found peer pressure to the causative factor in 79.2% patients whereas Desilva et al⁵ found that 74% initiated drugs as an experiment out of curiosity. This difference could be because of researchers or patients perception as most of the time peer pressure and curiosity overlaps. Familial disharmony has been found as major factor (62.6%) for initiation of drug abuse by Hossain et al⁶. This indicates the changing pattern or degradation of family values and social bondage. Duration of drug abuse as found in this study was less than 5 years in 68.35% patients and the mean age of starting drugs is 19.42 + 7.68 years. Venkatesan and Stelina⁷ found that the number of people getting initiated to substance abuse in early age (10-19 years) and showed and increasing trend.

In current study 4.43% patients had positive family history of drug abuse may be because of unavailability of drug and stronger social bondage in the past. This study revealed that amongst 158 addicted patients 86 (54.43%) were using oral route and 17 (10.76%) were using injectable route. This contradicts the findings of Islam SKN et al who found that injections to be the most popular (87%) route⁸. This difference may be changing pattern of drug availability and preference. Addicts on injectable drug are more vulnerable to communicable/infectious diseases like HIV, Hepatitis B, Hepatitis C abuse formation etc. Few years back phensidyl used to be the most popular drug for abuse. But now amongst the commonly abused drugs Yaba (methamphetamine) tablet predominates as it is easy to carry consume & 'high' in feeling. Unlike the findings of Kadri et al⁹ who found alcohol is most commonly (70.2%) abused drugs, it is only 5.70% in this study. This is because unlike India alcohol consumption is legally and religiously very restricted in Bangladesh.

This cross sectional study carried on patients who could afford relatively costly treatment of the deaddiction hospital of Dhaka. So along with limited number of study population this study couldn't cover the subjects of all corners of society or country. The sociodemographic profile of drug/ substance abusers vary from society to society country to country even time to time because of factors like economy, religion, rational policy social structure etc. The multiplicity of factors associated with drug abuse and their interrelatedness makes the problem a complex one¹⁰. Addicted patients from poor socioeconomic background usually remain unaccounted for and the failure of the nation and society to treat and reintegrate them into mainstream may prove disastrous in future.

Conclusion

Drug intake cripple the individual, the family, the society and finally the nation. Since younger generation are mainly affected by the drug abuse, it is prudent to evolve and apply preventive, curative and rehabilitative strategies before it is too late. Support for which must come from all sides including families, educational institutions, community or social groups, law enforcing agency, policy makers and health professionals. Periodic survey of ever-changing sociodemographic pattern of drug addiction can guide the policy makers to help eradicate or control this social 'cancer'.

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Parental Social Relationship and Adolescent Depression

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Abstract

This cross sectional study was carried out among 141 randomly selected adolescents and their parents in four sectors of Uttara model town from January to December 2017 to assess the association between parental social relationship and adolescent depression. After taking informed written consent, data were collected by face to face interview with the help of a semi structured questionnaire. Then data were processed, cleaned and analyzed accordingly. Ethical issues were followed at every stages of this study.

Among the adolescents, males were higher (67.4%) than females (32.6%) and their mean(\pm SD) age was 15.35(\pm 0.98) years. Most (93.6%) of them had secondary level education and belonged nuclear family (83.7%). Average monthly family income was Tk 61141.84(\pm 33394.09). More than half (57.4%) adolescent had no or minimum depression whereas 22.0% had mild depression 14.2% had moderate depression and 6.4% had severe depression. More than four fifth (83.7%) of the adolescent's parents almost always had good relation with those around, whereas three fifth (58.9%) parents sometimes get emotional support that is needed and nearly two third (72.3%) parents sometimes give and receive affection. There was significant association between communication of parents with other (p<0.01), give and receive affection (p<0.01) and positive thinking mentality (p<0.01) with level of adolescent depression. In social relationship domain, mean(\pm SD) score was found among parents was higher 10.48(\pm 1.226) when adolescents had no or minimal depression and among severely depressed adolescents their parental mean(\pm SD) score was lower 7.56(\pm 2.404) (ANOVA, p<0.05).

Adolescent depression is significantly associated with parental social relationship. Effective measures must be taken to prevent adolescent depression by improving parental social relation. Which may contributes effectively to develop our nation.

Key words: Depression, Adolescent depression, Social relationship, Parental social relationship, Adolescent parent relation.

Introduction

Adolescent depression is regarded as a major hindrance for development of a country. Parental social relationship is one of the hidden determinants of adolescent depression which must be recognized to prevent adolescent health problem.

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Correspondence to: Dr. Akhiruzzaman (MBBS, CCD, MPH) Assistant professor, Department of Community Medicine Diabetic Association Medical College, Faridpur E-mail: akhiruzzaman.88@gmail.com The notion of the 1970s was that depression is an ailment of adulthood and that children and adolescents do not experience depression is now long gone. It has been estimated that depression is the form of mental illness affecting the greatest number of adolescents¹. World Health Organization remarks depression often start at young age. About 8.0% of adolescents meet the criteria for major depression every day². Depression may cause many consequences on victims, even they commit suicide. In fact, suicide is the third leading cause of death in adolescents. With more than half of adolescent suicide victims reported to have a depressive disorder at time of death³.

Adolescent depression is influenced by many interrelated factors, among them parental social relationship and lifestyle is one of the most important part. Both mother's and father's mental health and their daily social relationship may affect their child's mental health⁴. Evidence from different studies showed that adolescent depression is increasing day by day and most possibly it is influenced by the parent's social relationship. In different countries some few studies were done with this context but in our country it is rare. So this study will open a new window for thinking about adolescent depression and impact of parental social relationship on adolescents.

Materials and Methods

This was a cross sectional study conducted within a fixed time frame (January to December 2017). This study was conducted in Uttara model town, Dhaka, which is mainly a residential area having 14 sectors (Up to 2nd phase). Four sectors were selected randomly for data collection, as: Sector No- 7, Sector No- 10, Sector No- 12 and Sector No-14. Study population were adolescents aging from 10 to 19 years and their parents (Either father or mother). Systematic random sampling technique was used for this study. Data were collected from community level through face to face interview from adolescents and parents (either father or mother). A semi structured questionnaire was used for data collection which was prepared on the basis of Beck's Depression Inventory-II and social relationship domain of Lifestyle Assessment Sheet and sample size was 141. Information about socio-demographic characteristics and adolescent depression were collected from adolescents and information about parental Social Relationship was collected from parents.

Results

After analysis of the data results were described in different section as follows

 Table 1: Socio-demographic characteristics of the respondents (n=141)

Attribu	Frequency	Percentage	
_	Male	95	67.4
Sex	Female	46	32.6
Age of the	13-15	79	56.0
adolescent (Year)	16-19	62	44.0
	Mean (± S	SD)=15.35 (=	±0.98)
Educational	Secondary	132	93.6
adolescent	SSC	9	6.4
Family type	Nuclear family	118	83.7
	Joint family	23	16.3
Father's occupation*	Service	90	63.8
	Business	49	34.8
Mother's occupation	Service	9	6.4
	Housewife	132	93.6
Monthly family	20000-50000	79	56.0
income (Tk)	50001-100000	51	36.2
	100001-150000	11	7.8
Mean \pm SD= 61141.84(\pm 33394.09).			
*In case of fathers' of father was died due	occupation n=139 to disease	because 2 a	dolescent's

Table-1 shows that among all the adolescents, 95(67.4%) were male and mean (±SD) age of the adolescents was $15.35(\pm 0.98)$ years. Majority 132(93.6%) had secondary level of education and 118(83.7%) were belonged nuclear family. Regarding occupation of the adolescent's fathers, 90(63.8%) were service holders and among mothers 132(93.6%) were housewives. Average monthly family income was Tk. $61141.84(\pm 33394.09)$.



Figure 1: Response of the parents regarding social relationship (n=141)

Figure 1 shows that out of all, 78.7% parent's communication with others was almost always open honest and clear and 83.7% parents almost always had good relation with those around, whereas 58.9% parents sometimes get emotional support that is needed and 27.0% parents sometimes give and receive affection.



Figure 2: Distribution of the adolescents by level of depression (n=141)

Figure 2 shows that among all the adolescents, 81(57.4%) had no or minimal depression followed by 31(22.0%) had mild, 20(14.2%) had moderate and 9(6.4%) had severe depression.

Table-2: Level of adolescent depression according to sex (n=141)

Sex	No or minimal depression f(%)	Depression (Mild, moderate or severe) f(%)	Total f(%)
Male	57(60.0)	38(40.0)	95(100.0)
Female	24(52.2)	22(47.8)	46(100.0)

Table-2 shows that out of all adolescents male 57(60.0%) had no or minimal depression and 38(40.0%) had any sort of depression (Mild, Moderate or Severe). On the other hand among adolescent female 24(52.2%) had no or minimal depression and 22(47.8%) had any sort of depression (Mild, Moderate or Severe).

AttributesNo or minimal depression ($t^{(k)}$)Moderate depression ($t^{(k)}$)Severe depression($t^{(k)}$)Total ($t^{(k)}$)SignificanceCommunication with others is open-bonest and clear (n=141)Hardly ever0(0.0)0(0.0)2(100.0)2(100.0)Severe (10.0)2(100.0)Severe (10.0)2(100.0)Severe (10.0)2(100.0)Severe (10.0)2(100.0)Severe (10.0)2(100.0)Severe (10.0)2(100.0)Severe (10.0)2(100.0)Severe (10.0)2(100.0)Severe (10.0)2(10.0)Severe (10.0)2(10.0)Severe (10.0)2(10.0)Severe (10.0)2(10.0)Severe (10.0)2(10.0)Severe (10.0)2(10.0)Severe (10.0)2(10.0)Severe (10.0)2(10.0)Severe (10.0)2(10.0)Severe <b< th=""><th></th><th></th><th>Level</th><th>of depression</th><th></th><th></th><th></th></b<>			Level	of depression				
$ \begin{array}{ $	Attributes	No or minimal depression f(%)	Mild depression f(%)	Moderate depression f(%)	Severe depression f(%)	Total f(%)	Significance	
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Almost always 57(62.6) 19(20.9) 11(12.1) 4(4.4) 91(100.0) Total 81(57.4) 31(22.0) 20(14.2) 9(6.4) 141(100.0) Good relationships with those around (n=141) Hardly ever 0(0.0) 0(0.0) 0(0.0) 1(100.0) 1(100.0) Fisher's Exact=10.621 p= 0.068 Sometimes 10(45.5) 6(27.3) 3(13.6) 3(13.6) 22(100.0) p= 0.068 Almost always 71(60.2) 0(0.0) 0(0.0) 1(100.0) 1(100.0) 1(100.0) Total 81(57.4) 6(27.3) 3(13.6) 3(13.6) 22(100.0) p= 0.068	Sometimes	23(50.0)	10(21.7)	9(19.6)	4(8.7)	46(100.0)	Exact= 7.945	
Total 81(57.4) 31(22.0) 20(14.2) 9(6.4) 141(100.0) Good relationships with those around (n=141) Fisher's Fisher's	Almost always	57(62.6)	19(20.9)	11(12.1)	4(4.4)	91(100.0)	p 0.100	
Good relationships with those around (n=141)Hardly ever $0(0.0)$ $0(0.0)$ $0(0.0)$ $1(100.0)$ $1(100.0)$ Fisher's Exact=10.621 p= 0.068Sometimes $10(45.5)$ $6(27.3)$ $3(13.6)$ $3(13.6)$ $22(100.0)$ $p= 0.068$ Almost always $71(60.2)$ $0(0.0)$ $0(0.0)$ $1(100.0)$ $1(100.0)$ Total $81(57.4)$ $6(27.3)$ $3(13.6)$ $3(13.6)$ $22(100.0)$	Total	81(57.4)	31(22.0)	20(14.2)	9(6.4)	141(100.0)		
Hardly ever 0(0.0) 0(0.0) 0(0.0) 1(100.0) 1(100.0) Fisher's Exact=10.621 Sometimes 10(45.5) 6(27.3) 3(13.6) 3(13.6) 22(100.0) p= 0.068 Almost always 71(60.2) 0(0.0) 0(0.0) 1(100.0) 1(100.0) Total 81(57.4) 6(27.3) 3(13.6) 3(13.6) 22(100.0)	Good relationsh	ips with those aroun	id (n=141)		•			
Sometimes $10(45.5)$ $6(27.3)$ $3(13.6)$ $3(13.6)$ $22(100.0)$ $p=0.068$ Almost always $71(60.2)$ $0(0.0)$ $0(0.0)$ $1(100.0)$ $1(100.0)$ Total $81(57.4)$ $6(27.3)$ $3(13.6)$ $3(13.6)$ $22(100.0)$	Hardly ever	0(0.0)	0(0.0)	0(0.0)	1(100.0)	1(100.0)	Fisher's Exact=10.621	
Almost always 71(60.2) 0(0.0) 0(0.0) 1(100.0) 1(100.0) Total 81(57.4) 6(27.3) 3(13.6) 3(13.6) 22(100.0)	Sometimes	10(45.5)	6(27.3)	3(13.6)	3(13.6)	22(100.0)	p= 0.068	
Total 81(57.4) 6(27.3) 3(13.6) 3(13.6) 22(100.0)	Almost always	71(60.2)	0(0.0)	0(0.0)	1(100.0)	1(100.0)]	
	Total	81(57.4)	6(27.3)	3(13.6)	3(13.6)	22(100.0)]	

Table-3: Parental social relationship and level of adolescent depression

Table-3 shows that among all the adolescents 70(63.1%) had no or minimal depression and only 3(2.7%) had severe depression when parents communication is almost always open, honest and clear with others, on the other hand 2(100%) adolescents had severe depression when parents communication is hardly ever is open, honest and clear with others. This association was statistically significant (p<0.01).

It revealed that 1(100.0%) adolescents had severe depression when their parents hardly ever give and receive

affection and 66(64.7%) had no or minimal depression when parents almost always give and receive affection. This association was statistically significant (p<0.01).

Among all the adolescents 2(40.0%) had moderate depression when parents were hardly ever positive thinker on the other hand 71(64.5%) had no or minimal depression when parents were almost always positive thinker. This association was statistically significant (p<0.05).

Table 4: Mean score of social relationship by level of adolescent depression (n=141)

Attributes	Mean(±SD) score of social relationship	Significance (ANOVA)
No or Minimal Depression	10.48 (±1.226)	F= 13 477
Mild Depression	9.42(±1.587)	df=3
Moderate Depression	9.70(±1.525)	p= 0.001
Severe Depression	7.56(±2.404)	

Table-4 shows that in social relationship domain, mean(\pm SD) score was found among parents was higher 10.48(\pm 1.226) when adolescents had no or minimal depression and among severely depressed adolescents their parental mean(\pm SD) score was lower 7.56(\pm 2.404). This difference was statically significant (ANOVA, p<0.01).

Discussion

In this study among all the adolescents, males were higher (67.4%) in number than female (32.6%) and the mean(\pm SD) age was $15.35(\pm0.98)$ years and similarly mean(\pm SD) age $16.0(\pm1.25)$ was found by another study conducted by Hassan, H.E. 2015^5 . In this study Muslims were higher (96.5%) in number than Hindus (3.5%) because of majority of our population are Muslims.

Among all the adolescents, 83.7% were belonged nuclear family and this finding was consistent (77.5%) with the study conducted in India⁶.

It revealed that 91.5% lived in pucca house and only 8.5% lived in semi pucca house. This difference was found because study was conducted in urban area.

Out of all, 80.1% families had 3 to 5 members and the mean(\pm SD) family members were 5.06(\pm 1.72) because, most of them were lived in nuclear family. Similar 5.81(\pm 2.0) findings were shown by another study⁷.

In this study average monthly family income was Tk. $61141.84(\pm 33394.09)$ which was quite similar with average monthly family income (Tk. 55086) for resident of Dhaka city. A small difference was found because this study was conducted in a small area with small sample size⁸.

This study revealed that, higher (57.4%) number of adolescents had no or minimal depression followed by 22.0% had mild, 14.2% had moderate and 6.4% had severe depression. Similar study conducted by Jayanthi et al. (2015) in India among 2432 adolescents, found that higher (45.7%) adolescents had moderate depression, followed by 25.4% had mild depression, 19.6% had severe depression and 9.3% had no or minimal depression. This result was varied from this study may be due to their large sample size⁶.

Among adolescent males two fifth (40.0%) had any sort of depression (Mild, moderate or severe), on the other hand

among females about half (47.8%) had any sort of depression. It indicated that females were more depressed than male. Similar study in South Korea revealed same outcome, where females' depression was higher (43.96%) than males $(32.03\%)^7$.

Conclusion

Adolescents depression is being neglected which is the one of the major contributors of global burden of disease and parental social relationship is the triggering factor of adolescent depression. More and more research should be conducted on this topic, which will help the policy maker to take effective measures against adolescent depression.

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Study on Knowledge and Compliance of Hand Decontamination Practices among Health Care Workers in a Military Hospital

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Abstract

This cross-sectional study was carried out in BNS Patenga- a Naval Hospital, Chittagong from February to June 2017 to know the knowledge and compliance of hand decontamination practice among health care workers with a sample size of 150 following purposive sampling technique using a pre-tested semi structured questionnaire by face-face interview method. The study revealed that majority of the respondents 114(76%) were males. This study also found that most of the respondents had education up to SSC level 59(39.3%), followed by Diploma/Graduate / Masters 39(25.5%) and HSC 32(22%). Mean age of respondents were 32.40 years with a SD of \pm 7.366. This study revealed that 40(27%) respondents were from age group 31-35 years, 33(21.9%) were of > 40 years of age. Compliance of hand decontamination practice was significantly associated with sex, designation, education and work place (p<0.05). There was statistical significant association between lack of knowledge, time constraints, lack of facilities, irritation or dryness of hands, facilities are inconveniently located, beliefs that use of gloves obviates the use of hand decontamination and availability of soap, availability of alcohol mixed substance, and distance of available facilities (p<0.001). To conclude, this study has clearly shown the requirement of an in-depth appraisal of educational interventions to recognize the hand hygiene opportunities and improved availability of hand hygiene facilities.

Key word: Knowledge, compliance, decontamination, healthcare workers.

Introduction

Hands are the highways to the transmission and spread of bacteria, pathogens, and viruses that cause diseases, foodborne illness, and infections resulting from hospital treatment (nosocomial). Infectious germs on the hands are the most common ways that people spread infection. This is caused by rubbing their nose or eyes with their hands, which have been contaminated with the cold virus and other bacteria¹.

The impact of communicable diseases on life expectancy and level of morbidity decreased with the commencement of immunization programs in 1924 and the discovery of antibiotics in the late 1930s. The link between poor hand hygiene of health care workers (HCWs) and the spread of infection in hospitals has been known and widely promulgated for the past 150 years, and a causal link between good hand hygiene and reduced risk of nosocomial infection has been demonstrated². Multiple studies have documented the poor compliance of HCWs with hand hygiene practices^{3,4}.

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Lt Col. (Dr.) Shamim Ahsan Commanding Officer, 15 Field Ambulance, Ghatail Cantonment Email: shamim847@gmail.com Although the risk of acquiring HCAI is universal and pervades every health-care facility and system around the world, the global burden is unknown because of the difficulty of gathering reliable diagnostic data. Overall estimates indicate that more than 1.4 million patients worldwide in developed and developing countries are affected at any time. 2HCAI is a major problem for patient safety and its surveillance and prevention must be a first priority for settings and institutions committed to making health care safet³.

Health-care workers are often the conduit for the spread of such infections to other patients in their care. It should also be noted here that many patients may carry microbes without any obvious signs or symptoms of an infection (colonized or sub clinically-infected). This clearly reinforces the need for hand hygiene, irrespective of the type of patient being cared for⁶.

Materials and Methods

The study was a cross-sectional study in BNS Patenga- a Naval Hospital, Chittagong from February to June 2017 with a Sample size of 150 following purposive sampling technique for data collection using a pre-tested semi structured questionnaire, data collection method was faceface interview. All interviewed questions were checked for its completeness, correctness and internal consistency to exclude missing or inconsistent data. The data were analyzed by using software SPSS version 17. Descriptive statistical analysis was considered for some selected data. In order to find out association between dependent variable with of independent variables, chi square test was done. Data were presented in the form of tables, graphs and charts as appropriate.

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Results

 Table 1: Distribution of the respondents by sex and marital status (n=150).

Variable		Frequency	Percentage
Sex	Male	114	76
	Female	36	24
Total		150	100
Marital status	Married	102	68
	Unmarried	48	32
Total		150	100

Table-1 shows that among the health care workers, predominantly males (76%) were employed where 68% of them were married.



Fig. 1: Distribution of the respondents by level of education (n=150)

Figure-1 shows that 40% of the health care workers had education up to SSC followed by Diploma/Graduate/ Masters (25%), Up to HSC (22%) and Up to class VIII (11%). Only 2% of them were illiterate.



Fig. 2: Distribution of the respondents by religion (n=150)

Figure 2 shows that out of 150 respondents 140 (93%) of them were Muslim.

Table 2: Distribution	of the respondents by	age group (n=
150)		

Age group (In years)	Frequency	Percentage	
≤25	33	21.9	
26-30	27	18	
31-35	40	27	
36-40	33	21.9	
> 40	17	11.2	
	Mean(±SD)= 32.40 (±7.366) years		

Table 2 shows that 27% of the respondents belonged to the age group of 31-35 years followed by up to 25 years and 36-40 years both (21.9%), 26-30 years (18%) and 11.2% were from age group of more than 40 years.



Fig. 3: Distribution of the respondents by designation (n=150)

Figure 3 shows that majority 38(25.33%) of the respondents were medical assistant by designation followed by nurse 28(18.67%), Intensive care assistant 26(17.33%), OT technician 24(16%), Dental technician 9(6%), Aya/cleaner 11(7.33%) and ward boy 9(6%). Only 5(3.34%) Health care providers were General duty assistants.



Fig. 4: Distribution of the respondents by place of work (n=150)

Figure 4 shows that 20% of the health care workers working in OT, 19% in ICU, 18% in adult ward, 17% in OPD and 13% both in paediatric and labour.

W. J. D.	Compliance of ha	nd decontamination		Р
variables	Yes	No	lotal	value*
Because of lack of knowledge	2 (1.32%)	1 (0.67%)	3 (2%)	
Because of time constraints	42 (28%)	28 (18.68%)	70 (46.68%)	
Because of lack of facilities	0	5 (3.33%)	5 (3.3%)	
Because of irritation or dryness of hands	2 (1.32%)	0	2 (1.34%)	0.002
Facilities are inconveniently located	0	13 (8.68%)	13 (8.68%)	
Beliefs that use of gloves obviates the use of hand hygiene	0	57 (38%)	57 (38%)]
Total	46 (30.64%)	104 (69.36%)	150 (100%)]

Table 3: Association between compliance to hand washing and related factors (n=150)

*P value is from pearson's chi square test.

Table-3 shows that there is statistical significant association between different factors (lack of knowledge, timeconstraints, lack of facilities, irritation or dryness of hands, facilities are inconveniently located, beliefs that use of gloves obviates the use of hand hygiene) and compliance to hand washing (p<0.002).

Table 4: Distribution of respondents by compliance of hand decontamination and selected socio demographic factors

	Compliance of Ha	nd decontamination						
Variables	Yes	No	Total	p value				
Sex of the respondents	Sex of the respondents							
Male	41 (27.33%)	73 (48.67%)	114 (76%)					
Female	7 (4.67%)	29 (19.33%)	36 (24%)	.001				
Total	48 (32%)	102 (68%)	150 (100%)	7				
Designation of the respondents	•			•				
Medical assistant	13 (8.67%)	25 (16.67%)	38 (25.33%)					
Operation theatre assistant	21 (14 %)	3 (2 %)	24 (16%)					
Nurse	6 (4%)	22 (14.67%)	28 (18.67%)	7				
Dental technician	7 (4.67%)	2 (1.33%)	9 (6%)					
Intensive care assistant	1 (.67%)	25 (16.67%)	26 (17.33%)	.002				
Ward boy	0 (0%)	9 (6 %)	9 (6 %)					
Aya/cleaner	0 (0%)	11 (7.33%)	11 (7.33%)	7				
General duty assistant	0 (0%)	5 (3.34%)	5 (3.34%)					
Total	48 (32%)	102 (68%)	150 (100%)	7				
Educational status of the respondents								
Illiterate	0 (0%)	3 (2%)	3 (2%)					
Up to class VIII	0 (0%)	17 (11.33%)	17 (11.33%)					
Up to SSC	20 (13.3%)	39 (26%)	59 (39.34%)	011				
HSC	18 (12%)	14 (9.33%)	32 (21.33%)					
Diploma/graduate/Masters	10 (6.66%)	29 (19.33%)	39 (26%)					
Total	48 (32%)	102 (68%)	150 (100%)					
Work Place								
ICU	0 (0%)	28 (18.67%)	28 (18.67%)					
Adult ward	8 (5.33%)	19 (12.67%)	27 (18%)					
Paediatric ward	6 (4%)	13 (8.67%)	19 (12.67%)					
OT	23 (15.33%)	7 (4.67%)	30 (20%)	.005				
OPD	10 (6.66%)	16 (10.67%)	26 (17.33%)					
Labor ward	1 (.63%)	19 (12.67%)	20 (13.3%)					
Total	48 (32%)	102 (68%)	150 (100%)					

Table- 4 shows that compliance of hand decontamination practice is significantly associated with sex, designation, education andwork place (p<0.05).

Table 5: Distribution of respondents by compliance of hand decontamination and availability of selected decontamination
materials.

	Compliance of har	nd Decontamination	T. (.)	
variables	Yes	No	Total	p value
Availability of soap				-
Yes	46 (30.66%)	94 (62.67%)	140 (93.33%)	
No	1 (.67%)	9 (6%)	10 (6.67%)	.001
Total	47 (31.33%)	103 (68.67%)	150 (100%)	
Availability of alcohol mixed substance				
Yes	21(14%)	33 (22%)	54 (36%)	
No	26 (17.33%)	70 (46.67%)	96 (64%)	.001
Total	47 (31.33%)	103 (68.67%)	150 (100%)	
Availability of water				
Yes	47 (31.33%)	103 (68.67%)	150 (100%)	
No	0	0	0	
Total	47 (31.33%)	103 (68.67%)	150 (100%)	
Distance of available facilities	•			•
within 10 metres	27 (18%)	41 (27.33%)	68 (45.33%)	
11-20 meters	20 (13.33%)	46 (30.67%)	66 (44%)	
More than 20 metres	0	16 (10.67%)	16 (10.67%)	.001
Total	47 (31.33%)	103 (68.67%)	150 (100%)]

Table-5 shows that there were significant association between compliance of hand decontamination and availability of soap, availability of alcohol mixed substance, and distance of available facilities; but there was association between Compliance of hand decontamination and availability of water (p<0.01).

Discussion

Frequency distribution of different socio demographic characteristics of HCWs reveals that majority of the respondents 76% were males and 24% are females. Numbers of male respondents were more because of employment pattern of CMH, only female HCWs are not employed in male adult wards and OPD, very less number at ICU and OT; majority of them are employed at female, pediatrics and labor wards. There was significant association (p<.05) between sex of the respondents and compliance of hand decontamination, compliance is more amongst male HCWs. It was evident that respondents education and compliance to hand decontamination were significantly associated (p<.05). Compliance was found lower among the diploma nurses in comparison to higher educated nurses. A number of studies support these findings. Anargh V et al in the year 2012 observed almost similar findings but A L Sofiani and others in a study in the year 2016 observed that there is no significant difference among the sexes^{7,8}.

The relationship between designation and compliance of hand decontamination was found to be significantly associated (p<.05). High level of compliance found amongst operation theatre assistants and medical assistants, on the other hand quiet low compliance found amongst nurses and dental technicians and poor compliance found amongst intensive care assistants, ward boy, aya, cleaner and general duty assistants. No other study findings were found on this variable to compare with these findings. Significant association was found between work place and compliance on hand decontamination (p<.05). Compliance level at operation theatre was highest which is expected, low at adult wards, OPD, and pediatric ward but lowest in ICU and labor wards which is alarming. Several other studies have similar findings^{9,10}.

The relationship between knowledge about wash materials soap and water, alcohol mixed substance, water and compliance of hand decontamination was found to be significantly associated (p<.05), this is almost same among the observation of many other sudies^{11,12}. Highly significant association was found between compliance and availability of hand washing facility, availability of soap,

availability of alcohol mixed substance and distance of available facilities (<0.001). In a study in the year 2002 Girou E et al found that during routine patient care hand rubbing with an alcohol based solution is significantly more efficient in reducing hand contamination than hand washing with antiseptic soap¹³.

Conclusion

To conclude, this study has clearly shown the requirement of an in-depth appraisal of important issues of compliance and patient safety.

Recommendations

Hand decontamination practice appraisal has to be a part of the overall strategy of improving the adherence to universal precautions in health care facilities.

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Antibacterial Effect of Ginger against Entero-pathogenic Organism: *Escherichia coli*

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Abstract

The study was conducted during the period of July 2016 to June 2017 in the Department of Pharmacology and Therapeutics with the collaboration of Department of Microbiology, Mymensingh Medical College, Mymensingh to determine the profile of antibacterial effect of Crude Ginger Extract (CGE), Ethanolic Ginger Extract (EGE) and standard antibiotic Amikacin against standard strains of *Escherichia coli*. It was an exploratory study based on laboratory experiment.

The objectives of the study were a) Determination of inhibitory effects of crude ginger extract by incorporation into Nutrient agar media against *Escherichia Coli*. b) Antibacterial sensitivity testing of ethanolic ginger extract against *Escherichia Coli* by using disc diffusion method. c) Determination of minimum inhibitory concentration (MIC) of ethanolic ginger extract against the test organism by broth dilution technique. d) Determination of minimum inhibitory concentration (MIC) of antibiotic Amikacin against test organism by broth dilution technique and e) Subculture studies of materials from effective CGE, EGE and Amikacin preparations for confirmation of respective results of Experiments I, III and IV.

It was revealed that the growth of *Escherichia coli* started to be inhibited from 50% CGE incorporated media and even no complete inhibition of growth occurred at 100%. In case of Ethanolic Extract in disc diffusion method sensitivity was seen against *Escherichia coli* zone of inhibition was 7 mm at 25 μ g/10 μ l, 22 mm at 50 μ g/10 μ l and, 30 mm at 100 μ g/10 μ l concentrations respectively. The broth dilution technique was performed to determine the MICs of EGE and Amikacin. The MIC of EGE was 500 μ g/ml against *Escherichia coli* and the MIC of Amikacin 1 μ g/ml against *Escherichia coli*. The subculture study showed the same results with that of previous experiments.

The study confirmed antibacterial effect of ethanolic ginger extract (EGE) against *Escherichia coli*. The crude ginger extract (CGE) also had its inhibitory effects against the organism studied. The finding highlights the need for further extensive study to detect and isolate the active ingredients present in the Ginger extract responsible for antibacterial effect.

Key word: Crude ginger extract, Ethanilic ginger extract, Antibacterial effect, Escherichia Coli.

Introduction

The emergence of bacterial resistance is creating a global health issue. Undertaking this global problem various

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Dr. Md. Abdur Rahman (MBBS, Mphil) Assistant Professor and Head, Department of Pharmacology and Therapeutics, Ad-din Akij Medical College, Boyra, Khulna. Email: dr.rana3939@gmail.com kinds of synthetic antimicrobials are being introduced by the various pharmaceutical companies. The newer generations of antimicrobials are costly and adverse effects are notable. In this regard one of the herbal spice Zingiber officinale (Ginger) was undertaken to investigate the antibacterial effect against the commonly encountered pathogens (Staphylococcus aureus, Pseudomonas aeruginosa, Escherichia coli and Salmonella typhi) causing various type of infections for its low cost, availability throughout the year and less adverse effects.

The microbial infection represents a critical problem to health and they are the major causes of morbidity and mortality of developing countries¹. Antimicrobial agents are available for the treatment and management of infectious diseases². In order to overcome the effects of chemical drugs, the World Health Organization have advised researchers to investigate possible use of natural products.

This subcontinent is a fertile soil for growing of various medicinal plants and herbs. In this context the name of Bangladesh is to be mentioned because our country is enriched with medicinal plants and herbs. Notable amount of modern medicines like cardiac glycosides, morphine, atropine, castor oil, aspirin, quinine etc. are obtained from various types of medicinal plants³.

More than 80% of the people of this country live in the rural area that's why they are far away from the modern treatment On the other hand the existing antimicrobial agents have declined in effectivity due to resistance of organism to those agents⁴. This resistance is particularly evident in enteropathogenic bacteria e.g. Escherichia coli, Shigella, and Salmonella species⁵. Because of the magnitude of the problem of drug resistance, some researchers have chosen to develop alternative strategies⁶. Ginger (Zingiber officinale) is a perennial herb belonging to Zingiberaceae family and widely grown in Asia and Africa⁷. The active ingredients of ginger are, phenolic compounds: shogaols and gingerols; sesquiterpenes: bisapolene, zingiberene, sesquiphellandrene, curcurmene; others: 6-dehydrogingerdione, galanolactone, gingesulfonic acid, zingerone, geraniol, ginger glycolipids⁸. The active ingredients in ginger are thought to reside in its volatile oils, which comprise approximately 1-3% of its weight⁹. Ginger's active ingredients have a variety of physiologic effects. For example, the gingerols have antioxidant, anti-inflammatory, anti-tumor, analgesic, sedative, antipyretic and antibacterial effects in vitro and in animals^{10,11}. Active constituents of ginger inhibit multiplication of bacteria by membrane disruption¹². Ginger is a strong antibacterial agent against *Escherichia coli*¹⁰. Because of the increasing resistance of bacteria to antibiotics, herbal products are looking for new leads to develop better antibiotics¹³. Therefore the aims of this study are to investigate the antibacterial effectiveness of crude paste and ethanolic ginger extract.

Materials and Methods

This laboratory based exploratory study was carried out in the Department of Pharmacology and Therapeutics in collaboration with the Department of Microbiology, Mymensingh Medical College, Mymensingh, during the period from July 2016 to June 2017. Ginger was used as a material for experiment which was collected from local market of Mymensingh, Bangladesh. Another important material Aminoglycoside antibiotic (Injectable form) was bought from local market. Standard reference strains of Escherichia coli. ATCC 25922 was use for testing and collected from Microbiology Department of Mymensingh Medical College. Five experiments were conducted during this time period to determination of inhibitory effects of Crude Ginger Extract (CGE) by incorporation into nutrient agar media against Escherichia Coli. (experiment-1), antibacterial sensitivity testing of Ethanolic Ginger Extract (EGE) against Escherichia Coli by using disc diffusion method (experiment-2), determination of Minimum Inhibitory Concentration (MIC) of ethanolic ginger extract against the test organism by broth dilution technique (experiment-3), determination of Minimum Inhibitory Concentration (MIC) of antibiotic Amikacin against test organism by broth dilution technique (experiment-4) and subculture studies of materials from effective CGE, EGE and Amikacin preparations for confirmation of respective results of Experiments I, III and IV (experiment-5).

Procedure of Experiment-I:

Inhibitory effects of CGE against Escherichia coli into

Nutrient Agar (NA) media. Ginger (1000gm) was washed initially by distilled water and then by 95% ethanol and homogenized by using sterile mortar and pestle. Then sieved through double layer of sterile fine mesh cloth to make crude extract. This CGE was considered as 100% crude ginger extract (Table-1).

Table 1: Composition of different concentration	of	CGE
incorporated into NA media		

Set No	CGE (ml)	Distil water in NA media to make 100ml	Percentage of CGE incorporated into NA media	Test organism
Set-I	5	95	5	One loopful*
Set-II	10	90	10	One loopful
Set-III	15	85	15	One loopful
Set-IV	20	80	20	One loopful
Set-V	30	70	30	One loopful
Set-VI	40	60	40	One loopful
Set-VII	50	50	50	One loopful
Set-VIII	60	40	60	One loopful
Set-IX	70	30	70	One loopful
Set- X	80	20	80	One loopful
Set-XI	90	10	90	One loopful
Set-XII	100	00	100	One loopful
Control				
Set XIII	-	100	-	One loopful

* One loopful =20 µl

Bacterial (*Escherichia coli*) Suspension was prepared by 3-5 similar colonies from 18-24 hours old agar plates and mixed with normal saline. The turbidity of the suspension was adjusted with 0.5 Mc Farland standards $(1.5 \times 10^8$ organisms/ml). A cotton swab was dipped in the bacterial suspension and inoculated into CGE containing NA media as well as control plates. Then all the plates were placed in the incubator at 37 °C for 24 hours.



Figure 1: Petri dish contains prepared different concentration of CGE.

Procedure of Experiment-II:

Antibacterial sensitivity testing of Ethanolic Ginger Extract (EGE) against Escherichia coli by disc diffusion method and all materials were sterilized accordingly (same as procedure I). Ethanolic Ginger Extract was prepared by using 10 grams of the grounded ginger mixed with 200 ml of 95% ethanol and left in room temperature for 24 hours. After that it was filtered by using gauze pad to remove the large particle then centrifuged at 3000 rpm for 10 minutes. Secondarily by filter paper to obtain a clear solution which was dried at 40°C in hot water bath and stored in the refrigerator until use. For preparation of parent solution, 1gm powder extract mixed with 10 ml ethanol. Then filtered by gauze pad and centrifuged at 3000rmp for 10 min then filtered by filter paper. This solution was the source of preparing different concentrations with adding ethanol. The extract was stored at 4°C in refrigerator.



Figure 2: Prepeared Ethanolic Ginger Extract

A sterile cotton swab was dipped into bacterial suspension (Prepared as per procedure I) and inoculated into NA plates then left 5-10 minutes on room temperature. By using a sterile forceps the blank discs were placed on the surface of the plates and with the help of micropipette different concentrations of EGE were put over the blank discs and left for five minutes. Then the plates were incubated at 37° C for 24 hours then the zone of inhibition were measured in mm by using ruler.

Procedure of Experiment-III:

Determination of Minimum Inhibitory Concentration (MIC) of Ethanolic Ginger Extract (EGE) against *Escherichia coli* by broth dilution technique where instruments were sterilized and medium was prepared accordingly (as per procedure-I)

Stock EGE was prepared by mixing 1 gm of powdered ginger extract in 10 ml ethanol. (Parent Solution) So, 1 ml Solution contains 100 mg EGE. This solution was marked as Stock EGE Solution-I. To prepare more diluted working solution, 1:100 dilution was done of the stock EGE solution -I by adding 99 ml of Ethanol.

So, 100 ml of working solution contains 100 mg of EGE. So, 1 ml of working solution contains 1 mg of EGE, This solution was marked as EGE Solution-II. This solution (EGE Solution-II) was used for determination of MIC of EGE by making different working solution of different concentrations. (Table-2)

No of Sets	EGE solution-II (ml)	Nutrient broth medium (ml)	Total (ml)	Concentration of EGE(µg/ml)	Test organism (µl)
Set- I	9	1	10	900	20
Set- II	8	2	10	800	20
Set- III	7	3	10	700	20
Set- IV	6	4	10	600	20
Set- V	5	5	10	500	20
Set- VI	4	6	10	400	20
Set- VII	3	7	10	300	20
Set-VIII	2	8	10	200	20
Set-IX	1	9	10	100	20
Set- X Control-1	10	0	10	1000	20
Set- XI Control-2	-	10	10	-	20
Set-XII Control-3	-	10	10	-	-

 Table 2: Composition and different concentrations of working EGE solutions with controls

With each 10 ml preparation except control-3 (set XII) 20 µl bacterial suspension was added after matching its opacity with that of 0.5 McFarland Standard. After matching the turbidity of bacterial suspension with 0.5 McFarland standards, 20 µl or one drop (0.02 m1) of bacterial suspension of Escherichia coli was separately added with each concentrations of working EGE in separate test tubes. These inoculum was also added to the controls (I and 2) except Control-3. The test tubes were marked set wise with black marker and were placed in the incubator at 37 °C for 18 -24 hours. Then growth of test organism in each preparations of EGE were examined and compared against that of controls by matching their turbidity. The clear preparations were considered as no growth of bacteria and turbid ones, as growth of bacteria. The MIC was reported as lowest concentration of EGE required to prevent the visible growth of test organism.

Procedure of Experiment-IV:

Determination of MIC of Amikacin against *Escherichia coli* by Broth dilution. All the materials were sterilized by hot air oven and autoclaving.

Nutrient broth medium was prepared accordingly and stock solution of Amikacin was prepared by mixing five hundred (500) mg of Amikacin injection with 500 ml of sterile D/W. So, 1 ml solution contains 1 mg Amikacin. (Stock Amikacin solution-I) Then 1 ml of stock Amikacin solution-I was mixed with 99 ml of sterile D/W. This 1:100 dilution of stock Amikacin solution-I had the concentration of 10 μ g/ml. This solution was marked as Stock Amikacin Solution-II which was used as stock solution for the determination of MIC of Amikacin. (Table-3)

 Table-3:
 Composition and different concentrations of working Amikacin solutions and the controls.

No. of Sets	Stock Amikacin solution-II (ml)	NB media (ml)	Total (ml)	Concentration of Amikacin (µg/ml)	Test organism (µl)
Ι	0.25	9.75	10	0.25	20
II	0.5	9.50	10	0.5	20
III	0.75	9.25	10	0.75	20
IV	1	9	10	1	20
V	1.5	8.5	10	1.5	20
VI	2	8	2	2	20
VII	Control-1	10	10	-	20
VIII	Control-2	10	10	-	-

With each 10 ml preparation except control-2 (set VIII) 20 μ l bacterial suspensions were added after matching its opacity with that of 0.5 McFarland Standard. After 18 to 24 hours of incubation at 37°C, the growth of *Escherichia coli* in each preparations of Amikacin were examined and compared against that of controls by matching their turbidity. The clear preparations were considered as no growth of bacteria and turbid ones, as growth of bacteria.

The MIC was reported as lowest concentration of Amikacin required to prevent the visible growth of test organism.

Procedure of Experiment- V:

Subculture studies of materials from effective CGE, EGE and Amikacin preparations for confirmation of respective results of Experiments I, III and IV

The materials from last two sets of growth and all sets of no growth of CGE incorporated into NA media were subculture in the pure NA (solid) media plates (without any incorporation of CGE). After 18 to 24 hours of incubation at 37°C, the growth of test organism was examined.

The materials from last two sets of growth and all sets of no growth of *Escherichia coli* from dilutions of EGE and Amikacin preparations were sub cultured in the pure NA (solid) media plates (without any EGE and antibiotic mixed with the media). After 18 to 24 hours of incubation at 37°C, the growth of test organism was examined.

Observation and Results

Observation of experiment-I:

There was no inhibition of growth of *Escherichia coli* from 5% to 40% CGE incorporated medium. The growth of *Escherichia coli* started to be inhibited from 50% CGE incorporated media and even no complete inhibition of growth occurred at 100%.

Results of experiment-I:

Crude Ginger (*Zingiber officinale*) Extract (CGE) incorporated into nutrient agar media had a definite inhibitory effect against growth of *Escherichia coli* (Table 4)

Table 4: Inhibitory effect of Crude Ginger Extract (CGE) into

 Nutrient agar medium against growth of *Escherichia coli*.

No of Sets	Percentage of CGE in NA media	Amount of inoculation	Escherichia Coli
Set-I	5	One loopful	Growth not inhibited
Set- II	10	One loopful	Growth not inhibited
Set-III	15	One loopful	Growth not inhibited
Set-IV	20	One loopful	Growth not inhibited
Set-V	30	One loopful	Growth not inhibited
Set- VI	40	One loopful	Growth not inhibited
Set-VII	50	One loopful	Medium growth
Set-VIII	60	One loopful	Medium growth
Set-IX	70	One loopful	Medium growth
Set-X	80	One loopful	Medium growth
Set- XI	90	One loopful	Medium growth
Set-XII	100	One loopful	Medium growth
Set-XIII (Control)	Without CGE	One loopful	Huge Growth

Observation of experiment- II:

In case of Ethanolic extract in disc diffusion method sensitivity was seen against *Escherichia coli* Zone of inhibition 7 mm at 25 μ g/10 μ l, 22 mm at 50 μ g/10 μ l and 30 mm at 100 μ g/10 μ l concentration (Figure 3).

Results of Experiment- II:

According to Zone of diameter interpretation chart it is clearly observed that there is definite antibacterial effects of ethanolic ginger extract (EGE) against *Escherichia coli as* zone of inhibition was 30 mm at 100 μ g/10 μ l concentration.



Figure 3: Disc Diffusion showing *Escherichia coli* is sensitive to EGE.

Observations of experiment- III:

In case of *Escherichia coli* the visible growth was in set-IX to Set-VI. Their growth was not visible in Set-V to Set-I. So the MIC of EGE against *Escherichia coli* was 500 µg/ml (Set-V).

Results of Experiment-III:

The Minimum Inhibitory Concentration (MIC) of Ethanolic Ginger Extract (EGE) against $500 \mu g/ml$ at Set-V for *Escherichia Coli*. (Table 5).

Table 5: Minimum Inhibitory Concentration (MIC) ofEthanolic Ginger Extract (EGE) against *Escherichia coli*

No. of Sets	Concentration(EGE) (µg/ml)	Escherichia Coli
Set- I	900	No Growth
Set- II	800	No Growth
Set- III	700	No Growth
Set- IV	600	No Growth
Set- V	500	No Growth
Set- VI	400	Growth
Set- VII	300	Growth
Set- VIII	200	Growth
Set- IX	100	Growth
Set- X Control- 1	1000 (Pure stock EGE+Bacteria)	No Growth
Set- XI Control- 2	N/A Media+Bacteria	Huge Growth
Set- XII Control- 3	N/A media+No Bacteria	No Growth

Table 5 showed the test organisms failed to grow in **control-1** containing pure stock solution of EGE with bacterial inoculum, **control-2** containing nutrient broth medium with inoculum of bacteria showed their visible huge growth and **control-3** containing nutrient broth medium without any bacterial inoculum showing no visible growth of test organisms.

Observation of experiment -IV:

Visible growth of *Escherichia coli* observed at Set-I to Set-II. But the organisms failed to growth at Set-IV to Set-VI. So the MIC of Amikacin against *Escherichia coli* was $1\mu g/ml$ (Set IV).

Results of Experiment-IV:

The MIC of Amikacin against *Escherichia coli* was 1.5 μ g/ml at set V

Table 6: Minimum Inhibitory Concentration (MIC) of

 Amikacin against *Escherichia coli*

No of Sets	Concentration (µg/ ml)	Escherichia coli
Set-I	0.25	Growth
Set-II	0.5	Growth
Set-III	0.75	Growth
Set-IV	1	No Growth
Set-V	1.5	No Growth
Set-VI	2	No Growth
Set-VII Cintrol-1	(NB medium+No bacteria inoculation)	No Growth
Set-VIII Control-2	(NB media+Bacterial inoculation)	Growth

Table 6 also showed **control-1** containing nutrient broth medium without any bacterial inoculum had no visible

growth and **control-2** containing nutrient broth medium with bacterial inoculum observed their visible growth.

Observation of experiment-V:

It was observed from table 7 that the lowest percentages of CGE showing complete inhibition of growth of partial inhibition of *Escherichia coli in* subculture plates were coincided with previous lowest percentages of CGE incorporated into NA media showing inhibitory effects against the test organisms (as found in Experiment-I). The minimum inhibitory concentrations (MICs) of EGE and Amikacin were also coincided with results of their subculture in NA media against the test organism as the found in experiment-III and IV (Table 7).

Results of experiment- V:

Results of subculture study of materials from effective CGE, EGE and Amikacin in NA media were coincided with the respective results of previous experiments.



Figure 4: Determination of Minimum Inhibitory Concentration (MIC) of amikacin by broth dilution technique.

Table 7: Subculture study of materials from effective Crude Ginger Extract (CGE), Ethanolic Ginger Extract (EGE) and

 Amikacin in NA medium for Confirmation of respective result of previous experiment.

	Concentration of CGE			Concentration of EGE			Concentration of Amikacin		
Test organisms	Inhibitory effect against growth	Observed effect in subculture plate	MIC	MIC No growth in subculture Plate		MIC	No su	o growth in bculture plate	
	ml/100 ml			μg/1	ml		μg/	ml	
Escherichia coli	100	partial inhibition	500		500	1		1	

Discussion

In this study it is found that 50%- 100% CGE has moderate inhibitory effect against *Escherichia coli*. Shah P. 2012¹⁴ and Neihaya HZ. 2015¹⁵ also found that crude ginger extract has moderate antibacterial activity against *Escherichia coli* which is almost similar to this study.

Karuppiah P. 2012¹⁶, determined the antibacterial effect of Allium sativum cloves and Zingiber officinale rhizomes against multi-drug resistant clinical pathogens with the help of disc diffusion method. In that study the zone of

inhibition against *Escherichia coli was* 8.50 mm at 25μ g/ml, 18.00 mm at 50 μ g/ml and 13.50 mm at 100 μ g/ml. In this study it was 7 mm at 25μ g/ml, 22 mm at 50μ g/ml and 30 mm at 100 μ g/ml, which is almost similar with this study.

Yusha MU. 2008¹⁷, determined the antimicrobial activity of ethanolic ginger extract against Gram-negative bacteria with the help of agar well diffusion method. They found that zone of inhibition against *Escherichia coli* was 34 mm at 100% concentration of EGE. In this study the zone of

inhibition against *Escherichia coli* was 30 mm which is almost similar with this study. In both studies it was found that EGE is sensitive against those test organisms.

Ekwenye UN., Elegalam NN. 2005^{18} , determine the antibacterial activity of ginger extracts on *Escherichia coli* with the help of paper disc diffusion method. In that study the zone of inhibition (ZOI) against *Escherichia coli* was 10 mm at 75% concentration. In this study ZOI of EGE against *Escherichia coli* was 22 mm at 50% concentration. In both studies it was found that EGE is sensitive against those test organism.

Karuppiah P. 2012^{16} , determined the MIC of ethanolic ginger extract against *Escherichia coli* was 75 µg/ml. But in this study the MIC of EGE was against *Escherichia coli* 500 µg/ml. This is bit different with this study. This is may be due to the species difference or the ginger difference in different biologic condition.

Conclusion

From this study it is clearly observed that there is definite antibacterial effects of ethanolic Ginger extract (EGE) against *Escherichia coli*. The crude Ginger extract (CGE) also has its definite inhibitory effects against *Escherichia coli*. Further studies are required to detect and isolate the active ingredients present in the Ginger extract responsible for antibacterial effect. Then their effects against the studied organism should be studied in vivo separately and their toxicity profiles should also be taken into account. Only then the Ginger extracts will fulfill the criteria for its therapeutic use. Until then ginger may be used in gastrointestinal tract infection, respiratory tract infection, skin infection and urinary tract infection along with the conventional antibiotics which are used in those conditions.

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Mothers' Knowledge on Infant & Young Child Feeding (IYCF) in Selected Villages of Modhukhali

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Abstract

This was a descriptive type of cross sectional study conducted during the period of November 2016 to February 2017. The objective of this study was to find out the Mothers' Knowledge on Infant & Young Child Feeding in selected villages of Modhukhali. Purposive sampling technique was used to collect 376 samples from the population. Data were collected by face to face interview through a pretested questionnaire. It was revealed from the study that the mean age(\pm SD) of the respondents was 36.09 (\pm 9.4) years ,about 34.57% respondents were illiterate and average monthly family income was 13484 taka. The study revealed that about 43.62% people knew about exclusive breast feeding, 59.84% knew about disadvantage of bottle feeding, 46.28% of people know about continuation of breast feeding, 62.77% knew about the result if weaning was not done properly, 73.14% had knowledge about benefits of colostrums, 64.63% had knowledge about relation between nutritional status and mental development.

Food & feeding practice because even more vital in case of infant & children as they are in their developing phase (both physical & mental) and are susceptible to large number of diseases. The IYCF health care services of the country have been improved by some years but yet there are some gap in rural areas. Strong supervision and monitoring of IYCF health care services throughout the country can change the scenario and help to make a healthy nation.

Key word: IYCF, colostrums, weaning, exclusive breast feeding.

Introduction

Appropriate feeding practices are essential for the nutrition, growth, development and survival of infants and young children¹⁻⁵. These feeding practices, known collectively as infant and young child feeding (IYCF) practices, include breast feeding and complementary feeding. Infants should be breastfed within half an hour of birth, exclusively breastfed for the first six months of life, and thereafter should receive nutritionally adequate and safe complementary foods while breast feeding continues up to two years and beyond⁶.

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Correspondence to: Dr. Fouzia Zaman, MBBS Lecturer, Department of Community Medicine Diabetic Association Medical College, Faridpur. Email: fouziazaman98@gmail.com Proper feeding practices are important to improve the nutritional states, ensure optimum growth and development and the very survival of infant and young children. Bangladesh has a strong culture of breast feeding. The initiation of breast feeding is often delayed, with less than one in four infants (24%) put to the breast within an hour of birth. While colostrum feeding has improved in the past decade (87%), the traditional practice of giving prelacteal feeds (48%) to the newborn was not improved. Only 42% of infants aged less than six months are exclusively breastfed because other liquids and complementary foods are given too early. Inappropriate infant and young child feeding practices are the most serious obstacles to maintaining adequate nutritional status, and contribute to levels of malnutrition in Bangladesh⁷.

Infant and under five child mortality are important health indicators of any country. As the mother is the first caretaker and first teacher of the child, it is important that the mothers are well informed about child feeding practices, nutrition, hygiene & sanitation. So that infant and child health can be promoted⁸.

Proper Infant and Young Child Feeding is of utmost importance for the overall physical and mental development and decrease under five child mortality and morbidity. So, the international and national concern for Infant and Young Child Feeding has been so high. WHO along with UNICEF has set standards for the breastfeeding and complementary feeding practices and have been conducting large number of programs in developing and under developed countries. Bangladesh government has also been conducting awareness programs to improve breast feeding and weaning practice and proper growth and development of children.

Materials and Methodos

It was a descriptive type of cross sectional study conducted to assess the Mothers' Knowledge on Infant & Young Child Feeding in selected villages of Modhukhali during the period of November 2016 to February 2017. A non random purposive sampling technique was used to select 376 mothers who had at least one under five children. At first informed consent was taken from the respondents and data were collected through a pretested questionnaire by face to face interview. Data were cleaned & checked for consistency and analysis was done according to objective of the study.

Results

A total of 376 mothers were interviewed with a interview schedule. The findings of the survey have been presented in the form of tables and diagrams as follows:

Table 1: Distribution of the respondents according to soc	io
demographic status (n=376)	

Attributes	Frequency	Percentage					
Distribution of the respondents by age (Years)							
18 - 27	130	34.57					
28 - 37	98	26.06					
38 - 47	79	21.01					
48 - 57	45	11.96					
>57	24	6.4					
Total	376	100					
Mean age of the r	espondents was 36.	09 (±9.4) years					
Education	Educational status of the respondents						
Illiterate	130	34.57					
Primary	135	35.90					
SSC	75	19.95					
HSC	21	5.59					
Graduation	14	3.72					
Post graduation	1	0.27					
Average monthly family income (tk)							
1,000-10,000	150	39.9					
10,000-20,000	166	44.1					
20,000-30,000	43	11.4					
> 30,000 17 4.5							
Mean monthly income of the family was 13484 taka							

Table 1 shows that mean age of the respondents was $36.09 (\pm 9.4)$ years, mean income of the families was 13484 taka. It was found that 35.90% had primary level education.



Figure 01: Distribution of the respondents by knowledge about exclusive breast feeding. (n=376)

Figure 01 shows that 56.38% of respondents had knowledge about exclusive breast feeding.



Figure-02: Distribution of the respondents by knowledge about disadvantage of bottle feeding (n=376).

Figure 02 shows that about 59.84% knew about disadvantage of bottle feeding.

Table 2: Distribution of the respondents by knowledge about relation between nutritional status and mental development. (n=376)

Knowledge about relation between nutritional status and mental development	Number	Percentage
Yes	243	64.63
No	133	35.37
Total	376	100

Table 2 shows that 64.63% had knowledge about relation between nutritional status and mental development.



Figure 3: Distribution of respondents by knowledge about benefits of colostrum. (n=376)

Figure-03 shows that majority of the people about 73.14% had knowledge about benefits of colostrum.

Table	3:	Distribution	of	respondents	by	knowledge	about
continu	atic	on of breast fee	din	g. (n=376)			

Knowledge about continuation breast feeding	Number	Percentage
Yes	174	46.28
No	202	53.72
Total	376	100

Table 3 shows that 46.28% have knowledge about continuation of breast feeding.



Figure 4: Distribution of respondents by knowledge about consequence of in appropriate weaning (n=376)

Figure 4 shows that 62.77% had knowledge about what happened if the weaning isn't done properly.

Discussion

The result showed that mean age of mother was $36.09(\pm 9.4)$ years. This study showed that average monthly income was 13,484 taka, which is little higher to our annual national monthly income 11,534 taka⁹. A study conducted in Karachi, Pakistan showed that 2% were graduates. In this study it was found that about 3.72% have completed graduation. This variation is due to high literacy rate of Bangladesh (72.76%) compared to Pakistan (58%)^{9,10}.

This study revealed that about 56.38% respondents knew about exclusive breast feeding, 46.28% of respondents knew about continuation of breast feeding. Another study done in Nigeria showed that 94% respondents had a good knowledge of exclusive breast feeding & 89% respondents knew about continuation of breast feeding¹¹. This variation is due to the fact that our respondents were rural village women whereas the respondents of that study were bankers. The study also revealed that 73.14% respondents knew the benefits of cholostrum. Ramanand Chaudhary et al showed in their study that 25% mothers knew about the benefits of cholostrum¹². This variation is due to high literacy rate of Bangladesh. Around 59.84% knew about the result if weaning is not done properly.

The findings indicate that the health education program has not yet been satisfactory but those who have attended the program have been immensely benefitted, this means, the coverage of health education program has been depressing. Though being very effective the government and the health education provider must focus on encouraging more people to attend the health education program to improve infant and young child health and thus reduce the morbidity and mortality of that age group.

Conclusion

It was observed that the rural people of Modhukhali have limited access to health education program, due to this, the knowledge of people on Infant and Young Child Feeding is not satisfactory. It is important that all the people and mother have clear and precise concept about Infant and Young Child Feeding which will ultimately contribute to reduce infant and child morbidity and mortality.

The Government will give emphasis on the spread of information on health issues to every corner of community especially focusing the rural people to gain knowledge on IYCF in near future. So that educated mother will give raise healthy and educated children, as a result, a potential and dynamic future generation will be created, which will stand our country atop among others.

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Stress Factors of Health Care Environment: Concern for Health Care Workers

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Occupational stress has been a long-standing concern of the health care industry. Occupational stress and workplace health have become issues of great concern over the last decade, both internationally and nationally. The management of job-related stress among health-care workers is critical for the improvement of healthcare services Stress is a pervasive and insidious part of everyday life and in the work environment.¹

Lazarus and Folkman, 1984; Taylor, 1991 cited by Baron (1992:443) define stress as response to events that disrupt, or threaten to disrupt our physical or psychological functioning". In relation to the definition of stress given above, Kortum-Margot cited in the GOHNET Newsletter Issue No 2 of 2001/2002 described work stress as existing in three categories namely:

- The engineering approach; this approach views work stress as an aversive or noxious characteristic of the work environment.
- Physiological approach; which explains work stress as a physiological response to a threatening or damaging environment.
- Person-environment interaction approach; this approach views work stress as the dynamic interaction between the individual and his/her work environment.²

According to the American Psychological Association (APA), stress can be categorized as acute, episodic acute, and chronic.

Acute Stress

Acute stress is the most common form of stress and is short term. It is described as a reaction to an immediate threat, commonly referred to as the fight or flight response. Common causes of acute stress include noise, danger, crowding, or isolation.

Episodic Acute Stress

Episodic acute stress is prevalent among those individuals whose lives are constantly chaotic and demanding. These individuals are always in a rush and tend to take on too many tasks at one time. Individuals who worry a lot are also prone to episodic acute stress.

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Chronic Stress

Chronic stress is defined as a type of stress that occurs over a long period of time from either internal or external stressors.⁴ Common causes of chronic stress include financial problems, death of a loved one, long-term relationship issues, or having a demanding job or work schedule.^{3,4}

It was found that stress factors and coping methods differ based on occupation, sex, and business life time. Considering that services in health sector should be carried out with the least error possible, it is obvious that personnel satisfaction has a key role. Therefore, there is an urgent need for effective studies about individual and corporate stress management are needed in Health Corporation for the reduction of stress factors.⁵

Since they provide service to intensively stressed individuals and also the staff encounters with stressful situations very often, the field of health care is considered as a work environment a lot more stressful than the other work environments. While providing the service, health care staff, they see a lot of patients and patient relatives with many different levels of health problems. These situations threatening an individual's health and causing stress due to uncertainty and obscurity affect the health care staff as well as the patient.⁶

Stress, like depression, is a universal experience. Both are generally self-limiting and may even prove to be beneficial in terms of personal growth (Cherniss,1980). In some circumstances, however, stress and depression may become excessive and morbid, and lead to considerable disability. The association of stress with physical and psychological disorders has aroused much controversy over the years, but the particular subject of 'burnout' has received comparatively little attention in Britain, for instance. In the USA, job stress and burnout syndrome (BOSS) have stirred up great interest, as demonstrated by articles by Jones and Cherniss (1980).⁷

As health care workers face a wide range of psychosocial stressors, they are at a high risk of developing burnout syndrome, which in turn may affect hospital outcomes such as the quality and safety of provided care. The purpose of the present study was to investigate the moderating effect of job control on the relationship between workload and burnout.

Stress in the workplace is globally considered a risk factor for workers' health and safety. More specifically, the health care sector is a constantly changing environment, and the working conditions in hospitals are increasingly becoming demanding and stressful. According to the World Health Organization (WHO), "a healthy workplace is one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, safety and well-being of all workers and the sustainability of workplace"⁸.

Healthcare workers are at high risk for developing occupational mental health complaints due to frequent exposure to risk factors such as high work demands, low work control and high emotional demands⁹.

According to the International Labour Organisation, almost 10% of work place accidents are related to stress hence the ability to effectively manage stress can help maintain organization harmony (International Labour Organization-ILO, 2013). In the hospital most of the employee stress is caused by work overload, boring/repetitive duties, inadequate resources, physical environment (i.e. lighting, space, temperature, disruption etc), psychological working environment (i.e. verbal abuse, inappropriate behaviours), working long hoursforgoing lunch breaks and annual leave, people management issues, inadequate allocation of work, new technology, etc¹⁰.

Several studies focusing on the health care sector have shown that health care professionals are exposed to a variety of severe occupational stressors, such as time pressure, low social support at work, a high workload, uncertainty concerning patient treatment, and predisposition to emotional responses due to exposure to suffering and dying patients^{11,12}.

Job stress in employees in hospitals has been recognized as a key issue in the workplace. In a study in Japan, characteristics of job stress in the medical profession, especially in doctors and nurses, and the effectiveness of stress management are overviewed. The important points in stress management in hospitals are summarized as follows: 1) improvement of work environment, 2) assurance of participation and autonomy, 3) education or training to reduce job stress (ex. coping behavior, self-care, relaxation), 4) career development, 5) total support among medical professions. Some reports have demonstrated that the establishment of constant meetings is an effective method of reducing job stress and improving mental health in the medical profession, but few prospective intervention studies have been carried out. Further research is necessary to evaluate the effectiveness of stress reduction and to develop effective intervention programs for medical professions in hospitals¹³.

Work-related stress can occur specifically when a conflict arise from the job demands of the employees and the employees themselves; and if not handled properly, the stress can become distress. Occupational stress among health workers has been a matter of much scientific inquiry in literature in the past decades. High level of stress at work is a major factor to both physical and psychological health^{14,15}.

Between both the government-based and private-based sectors, no significant difference was found in terms of stress severity, frequency and index by lua Pl and Imilia I in the year 2011. Closer examination of the mean rank however indicated that the government healthcare providers were generally experiencing more occupational stress than those in the private sector in the majority of job stress dimensions.¹⁶

Occupational Stress of Healthcare workers may be associated with the following types of reactions:

- Psychological (irritability, job dissatisfaction, depression)
- Behavioral (sleep problems, absenteeism)
- Physical (headache, upset stomach, changes in blood pressure)¹⁷

Usually, the effects of stress can be categorized as: Mental, physical, behavioral, and cognitive. Among the poor signs of WRS are the poor physical and mental health of the organization employees, poor attendance and less commitment to work, less productivity, distress and irritability and lastly the organization becomes less likely to be successful in a competitive market with poor image to stakeholders^{18,19}.

In a study conducted among the health workers by Seung-Joo Namet al in Korea used the short form of the KOSS, (Korean occupational stress scale), which is composed of seven subscales pertaining to job stress with a total of 24 items: (1) job demand (four items); (2) insufficient job control (four items); (3) interpersonal conflict (three items); (4) job insecurity (two items); (5) organizational system (four items); (6) lack of reward (three items); and (7) occupational climate. The total stress score was calculated by summing the scores of each subscale and by using a formula outlined by the developers. A higher score indicates more severe or a higher level of stress. The mean stress level of health-care providers was found relatively lower than that found in Korean workers of other occupations. The most distinguishable stress characteristic for health workers was their significantly high stress score on the job demand subscale. For doctors, the high score on the job demand subscale can be attributed to the high technical demands of advanced procedures. Emergencies that may occur during routine work in the outpatient department can be another source of stress²⁰.

Work stress is of great concern to managers, employees and other stakeholders in organisations. It is a complex phenomenon and has a multitude of definitions in a variety of theoretical models. According to Lazarus and Folkman'scognitive theory of stress and coping, work stress was defined as the interaction between the individual and the environment. This theory suggested that when demands from the environment exceed the available resources, the result was either stress or coping, depending on the individual's appraisal of the stressors. Karasek's demand-control model assumed that psychological strain resulted from the joint effects of work demands and the degree of decision-making freedom available to workers facing the demands.²¹

Limited resources and a shortage of skilled health workers created very tight bottlenecks in the provision of services, which led to many community health workers experiencing work-related stress and low work motivation, in addition to receiving low salaries and having restricted opportunities for promotion.^{22,23}

In China based on the population and human resource planning ratios, there was an approximate shortfall of 30% in the number of general practitioners.²⁴The recent reforms have also expanded the scope of public health services and increased workload without equivalent increases in staffing levels.^{25,26}

It was found in Jordan that the prevalence of self-reported stress among Jordanian health care professionals was high but not unlike that found in the west. Demanding patients, being female and working long hours were associated with greater stress. This suggests that effective stress management, including education in stress management skills, is required by health professionals in all cultures to protect them against job stress and its negative health and performance consequences.²⁷

Most researchers who study occupational stress characterize job strain as a condition in which high demands are placed on the worker in combination with low control over how the job is done, which is additionally moderated by low workplace support. Additionally, job strain is believed to be the result of an imbalance between high effort and low reward. These factors are likely impacted by emerging or underappreciated sociological factors that affect stress levels, such as changing economic or institutional conditions. However, little is known about these sources of strain occurring in home health aides or how they might be reduced.²⁸

Efforts to prevent work-related health problems usually target employees who already show a certain degree of impairment of health or work functioning. With a Workers' Health Surveillance (WHS) program it can be focussed more on early detection of impaired health to prevent a loss in work functioning. To be able to plan a job-specific WHS properly, knowledge about the number of workers that could be expected to be target for interventions should be known.²⁹

Stress management studies has shown that the stress experience in the healthcare environment negatively impacts healthcare professionals and commonly leads to so many health related problems particularly to decreased quality of life, physical and mental ill health, and poor organizational performance. Healthcare professionals need support in addressing the numerous stressors inherent in their work and it is suggested that stress management interventions should be aimed at preventing or reducing stress among healthcare professionals.³⁰

Success in managing and preventing stress will depend on the culture in the organization. Stress should be seen as helpful information to guide action, not as weakness in individuals. A culture of openness and understanding, rather than of blame and criticism, is essential. Building this type of culture requires active leadership and role models from the top of the organization, the development and implementation of a stress policy throughout the organization, and systems to identify problems early and to review and improve the strategies developed to address them³¹.

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Biotinidase Deficiency: A Treatable Neurometabolic Disorder-A Case Report

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Abstract

Biotinidase deficiency is an rare autosomal recessive disorder with a wide-spectrum of neurological, dermatological, and immunological dysfunction. Identification of this disorder is important as it is easily treatable and the patients show dramatic response to therapy, besides the fact that it can prove fatal if not diagnosed. We report a case of two and half months old female child of biotinidase deficiency who presented with repeated attack of convulsion for 7 days, seborrheic dermatitis, alopecia and angular stomatitis for 15 days. Her perinatal period was uneventful and no consanguinity between parents. On admission she was hypotonic, reflex exaggerated, plantar extensor. She had mild metabolic acidosis, CT Scan of brain shows mild generalized atrophy of brain with bifronto-parietal craniocortical subarachnoid collection, TMS-increased C5OHcarnitine and enzyme assay revealed profound biotinidase deficiency. Treatment with 02 mg daily biotin was started and rapid and good control over seizures was seen.

Key words: Biotin, biotinidase

Introduction

Biotin also called vitamin B-7 which is a member of the Bvitamin family and good sources are found in egg yolk, milk, soya, barley, Brewer's yeast and royal jelly¹. Biotin is a water-soluble vitamin that is a cofactor for all 4 carboxylase enzymes in humans: pyruvate carboxylase, acetyl CoA carboxylase, propionyl CoA carboxylase, and 3methylcrotonyl CoA carboxylase. Dietary biotin is bound to proteins; free biotin is generated in the intestine by the action of digestive enzymes, by intestinal bacteria, and perhaps by biotinidase. The gene for biotinidase is located on chromosome 3p25 and many disease-causing mutations have been identified in different families². Biotinidase deficiency is a rare metabolic disease with estimated incidence of approximately 1:60089. Absence of biotinidase results in biotin deficiency, which results in a wide spectrum of neurological, dermatological, and immunological abnormalities³.

Symptoms may appear later, when the child is several months or several years old; symptoms may develop as

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Correspondence to: Col (Dr) Anjuman Ara Beauty, MBBS, DCH, FCPS Classified Child Specialist & Neurologist, Combined Military Hospital, Dhaka Cantonment, Dhaka. Email: anjuman beauty@yahoo.com early as 1 week of age. Severity and time of clinical presentation depends on the severity of enzyme deficiency. Patients with profound biotinidase deficiency possess less than 10% of normal serum biotinidase activity and partial deficiency patients have 10-30% of normal enzyme level.^{1,4} Atopic or seborrheic dermatitis, alopecia, ataxia, myoclonic seizures, hypotonia, developmental delay, sensorineural hearing loss, and immunodeficiency may occur. Most of these individuals have shown to have partial deficiency of the enzyme activity⁵.

Asymptomatic children and adults with biotinidase deficiency have been recognized in screening programs. Biotinidase is an essential enzyme required for recycling biotin by lysing lysine moiety from biocytin. Prenatal diagnosis is possible by the measurement of the enzyme activity in the amniotic cells or by identification of the mutant gene4.6. A simplified method for mass screening of newborn infants is now available and is in use in the USA and around the world. Diagnosis can be established by measurement of the enzyme activity in the serum. Treatment with free biotin (5-20 mg/24 hr) results in a dramatic clinical and biochemical response Children with untreated profound biotinidase deficiency usually have one or more of the following features- seizures, hypotonia, eczematous skin rash and alopecia. Biotinidase deficiency is an important cause of preventable neurological impairment^{5,7}.

Case Report

A two and half months old female child admitted into Combined Military Hospital, Dhaka on 22nd March 2015 with the complaints of repeated attack of convulsion for last 7 days, Oral ulcer, alopecia and skin lesion for last 15 days. No history of fever. No significant past illness. Her perinatal period was uneventful, birth weight was 3000g. The baby was on breast milk and formula milk. Only issue, no consanguinity between parents. On examinations the baby was conscious, fair complexion,

alopecia, lethargic, seborrheic dermatitis, angular stomatitis, anterior fontanelle not bulged, vital signs normal, no neck stiffness, muscle bulk normal, hypotonic, reflex exaggerated, plantar extensor, ankle clonus present, liver 3 cm firm nontender, spleen just palpable, other system reveals normal.



Picture shows alopecia, seborrheic dermatitis, angular stomatitis

A complete blood picture shows microcytic hypochromic anaemia, serum chemistries including serum electrolytes, sugar, urea, creatinine, calcium, magnesium, liver enzymes, thyroid hormone were within normal limits. ABG-mild metabolic acidosis , CSF study-normal except reduced sugar, CT Scan of brain-mild generalized atrophy of brain with bifronto-parietal cranio-cortical subarachnoid collection, EEG - consistent with localized centro-temporal spike activity, Serum ammonia and lactate raised, Biotinidaseassay- 0.63 nmol/min/ml (reduced), TMS-Children with biotinidase deficiency have increased C50H,Urinary ketone body- absent, echo cardiography and opthalmoscopy- normal, audiometry- outer hair cells are not functioning in both ear.

The parents were counselled about the case and prenatal diagnosis in a subsequent pregnancy. The baby was started on daily oral biotin 600mg 8 hourly and Levetiracetam 100mg 12 hourly and made significant recovery.

Discussion

Symptoms may appear later, when the child is several months or several years old; symptoms may develop as early as 1 week of age. Most of these individuals have shown to have partial deficiency of the enzyme activity¹. In this case symptoms appeared more or less earlier.

Free biotin is generated in the intestine by the action of

digestive enzymes, by intestinal bacteria, and perhaps by biotinidase². Seborrheic dermatitis, alopecia and candidal infections are due to immunological dysfunction are the predominant skin manifestations³ and the patient had most of these features.

Seizures occur in more than 50% of patients and they may be frequent or intermittent.⁴ The neurological symptoms may be secondary to accumulation of lactic acid in the brain. Biotinidase deficiency or the late onset or infantile form of multiple carboxylase deficiency has an autosomal recessive mode of inheritance and was first described by Wolf and colleagues in 1985⁵. In this case seizures occurs intermittently.

Biotinidase is an essential enzyme required for recycling biotin by lysing lysine moiety from biocytin, as elucidated in the biotin cycle. Deficiency of biotinidase results in the deficiency of biotin, which is required as a catalyst for the carboxylase systems in the body⁶.

Children with untreated profound biotinidase deficiency usually have one or more of the following featuresseizures, hypotonia, eczematous skin rash and alopecia as was seen in this patient. Other features include conjunctivitis, candidiasis and ataxia⁷.

Leukoencephalopathy, widening of the ventricles and extra cerebral CSF spaces, delayed myelination and subtle subcortical changes were reported in brain MRI of five patients with biotinidase deficiency in Germany⁸ in this case mild generalized atrophy of brain with bifronto-parietal craniocortical subarachnoid collection were seen.

Conclusion

Since neonatal biotinidase deficiency screening programs are not available in Bangladesh. Increased awareness with early detection of the disorder and timely administration of adequate doses of biotin, symptoms of the disorder can be successfully treated or prevented.

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A Case Report of Abdominal Mass: Diffuse Large B Cell Lymphoma

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Abstract

Diffuse large B-cell lymphoma (DLBCL) is the most common subtype of non-Hodgkin lymphoma (NHL), constituting up to 40% of all cases globall. This subtype of cancer is heterogeneous and aggressive, yet scientific advances in the last quarter century have rendered it curable with chemotherapy or with combined chemotherapy and immunotherapy. The objective of this article is to aware professionals about the disease towards early diagnosis in preventing consequence. The present study reported the case of a 60 years old man who was diagnosed with an advanced Diffuse Large B cell lymphoma.

Key words: Diffuse large B cell lymphoma

Introduction

It constitutes 31% of all NHL. Although, in the past, DLBCL was considered one disease, in the 2008 WHO classification, DLBCL is recognized to encompass many entities. There is a slight male predominance and the median age is 64 years. There is a familial component in some cases, with about a 3.5 fold increased risk in relatives of proband with DLBCL., Patients with congenital or a cquired immunodeficiency, Patients on immunosuppression and patients with autoimmune disorder have a higher risk of developing DLBCL, often EBV related¹⁻³. This study examined a 60 year-old man without any important risk factors identified.

Case History

Md. Mujibor Rahman, 60 years old businessman, normotensive, non-diabetic, smoker, non-alcoholic hailing from Bokshichandpur, Modhukhali attended at oncology outpatient department with the complaints of pain in the upper abdomen for 15days & gradual distension of the abdomen for 1 month, Abdominal swelling in the left upper abdomen for about 2 month, loss of appetite, weight loss & occasional vomiting for the last 6 month. According to statement of the patient he was reasonably well about 2 month back. Then he noticed a left upper abdominal

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Dr. Hasnina Akter, MBBS, M Phil-Radiotherapy Assistant Professor, Department of Oncology, Diabetic Association Medical College Hospital, Faridpur. Email: hasnina.akter84@gmail.com. swelling along with mild pain around the swelling. The pain was constant in nature & gradually increasing for last 15 days, it is non radiating & it doesn't have any aggravating or relieving factors. And for this reason he took Homeopathic treatment. According to statement of the patient he was reasonably well about 2 month back. Then he noticed a left upper abdominal swelling along with mild pain around the swelling. The pain was constant in nature & gradually increasing for last 15 days, it is non radiating & it doesn't have any aggravating or relieving factors. And for this reason he took Homeopathic treatment. He had H/O to take biopsy from para aortic lymph node.



Figure 1: Scar mark shows the midline of abdomen

Two weeks back & the sample were sent for histological examination. The report suggests metastatic adenocarcinoma. He had no history of familial cancer, solid organ tumors or any other systemic illness. On physical examination, there was a tender mass in the left para aortic region measuring about 10x6 cm in size. Local temperature was not raised. The mass was hard in consistency & fixed with the underlying structure. A scar mark was present in the midline.



Figure 2a: H&E; Metastatic adenocarcinoma, poorly differentiated



Figure 2b: LCA; Positive



Figure 2c: CD20; Positive



Figure 2d: CD 3; Negative

Figure 2 Immuno Histochemistry shows a) H&E; Metastatic adenocarcinoma, poorly differentiated b) LCA; Positive c) CD20; Positive d) CD 3; Negative.

On general examination, his B/P was 110/70 mm Hg, pulse was 76 beats/min. There was no palpable adenopathy. Systemic examination revealed no abnormalities. To find out the primary site, we advised some relevant investigations:

USG of whole abdomen: mild collection is noted in peritoneal cavity. Large ill defined complex mass lesion (measuring approx length 20cm & AP diameter 5 to 6 cm) is extending from epigastric region to umbilical level.

Chest X-ray P/A view, Upper GIT endoscopy, Tumor marker- CEA,CA 19.9, All reports were normal. So DLBCL is the most common subtype of NHL. Patients have a median of age 64 years, although younger in African Americans versus Caucasians. Patients present with rapidly enlarging masses, either nodal enlargement or extranodal disease. DLBCL presents as stage I or IE disease approximately 20% of the time. The disease is confined to one side of the diaphragm (stage I or II) in approximately 30% to 40% of patients. Stage IV disease is seen in approximately 40% of the patients. B symptoms (refer to systemic symptoms of fever, night sweats, and weight loss) occur in 30% of patients and serum LDH is elevated in over half the patients. For further investigations, we send the slide review & advised immuno histochemistry. This report revealed Diffuse Large B cell lymphoma. Finally patient was diagnosed as diffuse large B cell lymphoma. Systemic Combination chemotherapy Rituximab with CHOP regimen (cyclophosphamide, adriyamycin, Oncovin, prednisolone) was advised.

Discussion

DLBCL is the most common sub type of NHL. Patients have a median of age 64 years, although younger in African Americans versus Caucasians. Patients present with rapidly enlarging masses, either nodal enlargement or extranodal disease. DLBCL presents as stage I or IE disease approximately 20% of the time. The disease is confined to one side of the diaphragm (stage I or II) in approximately 30% to 40% of patients. Stage IV disease is seen in approximately 40% of the patients. B symtoms occurs in 30% of patients and serum LDH is elevated in over half the patients. Extranodal sites are common, occuring in 40% of cases including the GI tract, the testis, the bone, the thyroid, the skin, the CNS and the bone marrow. Bone marrow involvement initially is found in only 10% to 20% of patients and has a strong correlation with the risk of spread to the CNS⁴. The diagnosis of DLBCL should be carried out in a reference haematopathology laboratory with expertise in morphological interpretation and the facilities to carry out the full range of phenotypic and molecular investigations. A surgical excision biopsy remains the optimal method of diagnosis. This allows assessment of nodal architecture and provides adequate material for phenotypic and molecular studies. Ideally, the biopsy

should be sent unfixed to the laboratory to allow flow cytometric studies to be carried out and high-quality DNA and RNA to be extracted. Needle-core and endoscopic biopsies should be reserved for patients for whom a surgical approach is impractical or would entail excessive risk. A fine-needle aspirate should not be used as the sole basis for a diagnosis of DLBCL. A morphological diagnosis of DLBCL should be confirmed in all cases by immunophenotypic investigations, either immunohistochemistry (IHC) or flow cytometry or a combination of both techniques. A suggested immunohistochemical panel would include CD20, CD79a, BCL6, CD10, MYC, BCL2, Ki67, IRF4, CyclinD1, CD5and CD23.Panels used must be designed to confirm B-cell lineage, and must be comprehensive enough to high light possible variant forms such as immunoblastic lymphoma, primary mediastinal B cell lymphoma (PMBCL), T-cell/histiocyte rich large B-cell lymphoma, primary cutaneous DLBCL leg-type or EBVpositive DLBCL of the elderly⁵. Where the level of confidence in the diagnosis is reduced, for example, because only a small biopsy specimen is available or where the putatively neoplastic population has a normal phenotype by IHC, demonstration of B-cell monoclonality by a polymerase chain reaction-based method should be considered⁶. Other investigations may be done according to sign symptoms of metastatic organ involved (commonly bone, lung, lymph node, liver and brain). The staging is established according to the Ann Arbor classification system. For prognostic purposes, the International Prognostic Index (IPI) and age-adjusted IPI should be calculated⁷. Other factors that may affect prognosis and treatment strategies, including the maximum bulk of the disease should be assessed⁸. Less than 20% of patients with DLBCL have localized disease. The recommended treatment for localized disease outside of clinical trails is abbreviated, combination chemoimmunotherapy plus involved field radiotherapy or combination chemoimmunotherapy alone⁴. The current recommendation for the treatment of advanced stage DLBCL is combination chemotherapy with CHOP-R for patients both under age 60 years as well as over age 60 years⁹.

Conclusion

DLBCL is the most frequent NHL and is not a unique disease. Efforts to increase awareness among patients and physicians will lead to earlier presentation and therefore diagnosis before spreading to other organs. Like the majority of cancers, diffuse large B cell lymphoma can be cured or controlled, diagnosed and treated properly at its early stages.

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Cavernous Haemangioma- Uncommon Per rectal Bleeding

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Abstract

Haemangiomas are uncommon in GIT, but cavernous haemangiomas are relatively common. Therefore this report is a case of cavernous haemangioma in descending colon in a young male patient of 21 years present with colicky left upper abdominal pain and per rectal bleeding for 3 years. On clinical examination and imaging a pedunculated polypoid mass detected in descending colon. After laparotomy with left haemicolectomy a venous haemangioma found (confirmed by histopathology examination) surgical resection confirms this as benign tumor having good prognosis.

Key words: Cavernous haemangioma, per rectal bleeding, haemicolectomy, laparotomy.

Introduction

Haemangiomas are uncommon in the gastrointestinal tract, but cavernous hemangiomas are the common type encountered.<u>1</u> Colonic cavernous hemangiomas most often involve the rectum and when symptomatic, often present with evidence of gastrointestinal bleeding.<u>1</u> Rarely, hemangiomas of the colon may form an exophytic mass, and patients may present because of the mass effect. This report reviews of colonic cavernous hemangiomas with the management of the involved colon.

Clinical presentation

A young male patient of 21 years attend my private chamber on 15.10.11 with 3 year history of recurrent left side of upper abdominal pain and per rectal bleeding. Abdominal pain which was colicky stay for 3-4 days then pass a period of pain Free State of 20-30 days and same episode of pain appear again. Patient complains of recurrent bouts of clotted and fresh per rectal bleeding for same duration and bleeding start 2 days after abdominal pain and continues for 1-2 days then stop spontaneously. On clinical examination no abnormality was found except

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slight tenderness in left lumber region. Patient investigation done and findings was advised for CBC, urine for routine examination, ultrasonography of whole abdomen and barium enema of colon. Investigation report on 19.10.11 show normal CBC, urine and USG finding but barium enema of colon show persistent filling defect in descending colon (Fig-1). The patient given antispasmodic and antiulcerant (proton pump inhibitor) and advised for colonoscopy and biopsy for diagnosis of colonic mass. Colonoscopic finding of rectum and colon - seen upto caecum, there is a pedunculated polyp at 70 cm from the anal verge (Fig-2). Mucosa and vascular pattern of the rectum and colon appears normal. One piece of biopsy was taken and further biopsy was not possible due to profuse bleeding. Colonoscopic diagnosis was possible haemangioma of descending colon.

Management approach

The patient was counceled about the disease condition and was decided for laparotomy, left haemicolectomy. Laparotomy with left haemicolectomy and primary anastomosis done. His postoperative recovery was uneventful. Resected specimen of colon exposed internally, show a pedunculaed growth (Fig-3) and sent for histopathological examination confirmed as cavernous haemangioma.





Figure 1a

Figure 1b

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Figure 2

Discussion

Colonic haemangiomas are the rarest tumors of the lower gastrointestinal (GI) tract. Intestinal haemangiomas are important because of their potential for causing massive hemorrhage.^{1,2,3,4,5,6}

Cavernous haemangiomatosis of the colon, though rare, have been previously reported.⁷ About 80% of colonic haemangiomas are found on histology to be of the cavernous subtype, with 70% occurring in the rectum.⁸ Not surprisingly 60%–90% of patients present with bleeding from the rectum, but 17% will present with obstructive symptoms.

Cavernous haemangiomas have a tendency to run in families, and a high degree of clinical suspicion is needed to avoid unnecessary surgical procedures, which have been reported in upto 80% of patients, and delays in diagnosis upto 19 years.⁸

Early reports cite 40 to 50% mortality in untreated cases.^{1,9,10} Death from exsanguination has been described.^{2,11}These tumors are difficult to diagnose, and rectal lesions in particular are frequently misdiagnosed and mismanaged.

Investigations of the affected patients will be dictated by presenting symptoms. Obstructive large bowel symptoms warrant the use of barium enema or colonoscopy. Although angiography and scintigraphy may be useful, colonoscopy, CT colonography and magnetic resonance imaging are all more accurate methods for establishing the diagnosis, but with colonoscopy considered to be the method of choice.¹² Compared with optical colonoscopy, CT colonography has the advantage of greater accuracy in determining wall thickening and extramural extension.⁸

Complete resection is the definitive therapy for symptomatic colonic haemangiomas. This usually means a segmental bowel resection at open or laparoscopic surgery, as most patients have diffuse infiltrative lesions. The presence of a polypoid mass of appropriate size may lend itself successfully to endoscopic polypectomy or endoscopic mucosal resection.¹³ Localized flat lesions can be treated with endoscopic laser therapy or sclerotherapy with systemic steroid or interferon therapy with variable results.¹⁴ Complete surgical resection results in a good prognosis for these benign lesions.

Conclusion

Early diagnostic colonoscopy can be considered the best procedure as surgical management. Colonic haemangioma can also can considered as an open operative intervention or by endoscopic.

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