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Editorial

Emerging new trends in infectious diseases. Are super germs a threat?

Bangladesh is a small country with a dense population with nearly 164.7 million people living in a surface area of 56,977 square miles according to unofficial sources. The country has a population density of 1,115.62 people per square kilometer,(2,889.45/square mile), which ranks 10th in the world. According to World Bank sources nearly 35.86 % of the total population live in urban areas where crowded homes, work places, lack of safe drinking water and proper sanitation measures makes it a perfect haven for microbial population to flourish. To add to this, when the Monsoon season arrives, mosquito borne diseases like Dengue, Chikungunya becomes alarming high.

This year, Dengue fever has risen alarmingly with not only the Classical presentation but Dengue Haemorrhagic fever and Dengue shock syndrome have taken a heavy toll on the sufferings of the city dwellers. Even rural populations are getting affected which was unheard of before. Since, Aedes aegypti mosquito is the transmitting agent so adequate measures should always be in proper place so as to control the mosquito population simply because vaccines are not as yet available.

Like-wise Enteric fever which is endemic in Dhaka city, all of a sudden increases when the rainy seasons arrive. Although Salmonella spp. is still sensitive to most of the antibiotics but certain cases have been found where it has become resistant to parenterals such as Ceftriaxone. Since enteric fever is a water-borne illness, providing safe drinking water can eliminate this threat to a large extent.

Over the last decade, Dhaka city has seen growth of ICU's and HDU's in a mushroom fashion. Patients admitted in these ICU's and HDU's are getting infected with certain super bacteria such as E.coli, Klebsiella, Pseudomonas, Staph. aureus etc which have practically become resistant to nearly all the drugs. These super bugs have become a part and parcel of the ICU's and HDU's and are invariably the etiological agents of Catheter-associated UTI, Central line associated Blood stream infections etc. Even newly admitted patients are suffering from these Hospital Acquired Infections (HAI's) and are a major concern of morbidity and mortality in ICU's.

Unless appropriate Infection control measures are taken urgently, these super germs may become a threat to our existence.

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Instruction for Authors:

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Each of the following section should begin on separate page-

- Title page
- Abstract
- Text (Introduction, Materials and method, Results, Discussion). Insert tables and legends where they fit .
- Acknowledgement (if applicable).
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Title of the article (Should be concise, informative and self explanatory).
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May be structured with subheadings of Background Objective, Materials and Method, Results, Conclusion. Not mandatory for review articles and case reports.
Should not exceed 250 words.
Three to five keywords below the abstract may be used.

Text

Introduction

States the purpose of the article and summarizes the rational of the study.
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Materials and method

Should be very clear mentioning study design, place and period.
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Presented in sequence in the text, tables and illustrations.
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J. Dhaka National Med. Coll. Hos. 2019; 25 (01): 06-10

Original Article

Study of Major Congenital Anomalies in Neonates born at Dhaka National Medical Institute Hospital

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Abstract

Background: Congenital malformations are major contributors of neonatal mortality or life long disability. Major malformation accounts for 15% of neonatal death. It is a priority health problem in newborn. The objective was to study opted to know the frequency, the pattern of congenital anomalies, associated risk factors, various system involved and immediate outcome of congenital malformations in newborns.

Methods: This prospective hospital based observational study was carried out in the department of Paediatrics, Dhaka National Medical College and Hospital, Dhaka for a period of 3 years from 1st January, 2016 to 31st December, 2018. All congenital anomalous babies during the study period either detected before birth by ultrasonography of mother or detected at birth were included in this study. Diagnosis of congenital anomalies was based on clinical evaluation of newborn babies by the pediatrician and other appropriate investigations such as radiography, ultrasonography, echocardiography and chromosomal analysis etc.

Results: The anomalies in this study were divided into major and minor anomaly. During the study period 68 newborns with major congenital anomalies were included. Major anomalies identified involved the gastro-intestinal (GE) system (30.87) was found to be the commonest type of anomaly. Cleft lip and cleft palate (14.70%) was the most common anomaly seen in the gastro-intestinal system. Of the 68 major anomalous babies, 8 (11.76%) babies had multiple anomalies. Out of 68 newborn, 26.47% were still births and 73.53% were live births. Among the anomalous babies 67.65% were male and 32.35% were female. Of them birth weight less than 2.5 kg were 39.71% and weighing 2.5 kg or more were 60.29%. Out of total 68 mothers with major congenital anomalous babies, 58.82% of multiparas, more than half of the mothers (76.47%) aged <35 years, 52.94% of babies delivered <37 weeks of gestational age were found. 23 (33.82%) mothers had history of significant maternal illness, history of previous abortion 29 (42.65%), gave the history of previous congenital anomalous babies (10.29%) and also 54.41% of mothers were the history of irregular/absent antenatal checkup.

Conclusion: Congenital anomalies is a priority health problem in newborns. This study has highlighted the prevalence and types of congenital anomalies seen in our locality. Results of the study can be used to predict future incidence of anomalies and to increase public awareness about congenital anomalies to take preventive measures.

Keywords: Major congenital anomalies, Neonate.

Introduction:

Congenital anomalies are also known as birth defects, congenital disorders or congenital malformations. Congenital anomaly is an internal or external structural defect that is identifiable at birth.[1] According to WHO, congenital anomalies are defined as structural or functional anomalies, including metabolic disorders which are present at the time of birth.[2] Congenital anomalies account for 11% of neonatal deaths globally and 9% in India.[3]

Congenital anomalies can be classified as major and minor anomalies. Major defects are structural abnormalities that have cosmetic or medical consequences which may require surgical intervention for correction; examples include cleft palate. Minor anomalies are those with no medical or cosmetic

significance they are more useful for recognition of specific syndromes though isolated anomalies may occur sporadically.[2] A major congenital anomaly affect 2-3% of newborn babies of the approximately 35,000 children born in each year.[4] A study done at AIIMS show that congenital malformations contributed to 13.4% of perinatal deaths as compared to a decade back. Major malformations accounts for 15% neonatal death.[5]

Congenital anomalies are an important cause of neonatal morality both in developed developing countries. It is not only a leading cause of fetal loss, but also contributes significantly to preterm birth, childhood and adult morbidity along with considerable repercussion on the mothers and their families.[6]

Birth defects represent defective morphogenesis during early fetal life. Maternal risk factors contributing to the occurrence of congenital anomalies include genetic and environmental factors and their interaction with each other that may results into malformation, deformation, disruption or dysplasia, that eventually cause congenital anomalies.[2]

Around 40% to 60% of congenital anomalies are of unknown etiology; 20% are attributed to a combination of heredity and other factors; 7.5% due to single gene mutations; 6% is caused by chromosomal abnormalities; and another 5% is due to maternal illness, such as diabetes or infection or use of anticonvulsant or other drugs.[7]

No national survey or hospital based statistics regarding congenital anomalies in Bangladesh is available till date.

This study has been undertaken which will serve as a reference point for actual picture of congenital anomalies in this tertiary hospital and it will also generate data of congenital anomalous among newborns that will help national registry in future. This study was done to know the frequency, pattern of major congenital anomalies and various presentations, which may help to develop strategies for prevention, counseling and management in our setting.

Material and Method:

This is a prospective hospital based observational study. This study was carried out in the Department of Paediatrics of a teaching Dhaka National Medical College & Hospital, Johnson Road, Dhaka, for a period of 3 years from 1st January, 2016 to 31st December, 2018.

The study was conducted in 68 newborns with major congenital anomalies. Newborns either full term or preterm with congenital anomalies were included in the study. All babies delivered at DNMCH including still births comprise the study material.

All neonates were thoroughly examined soon after birth for major and/or minor congenital malformations by an expert pediatrician. All congenital anomalies babies during the study period either detected before birth by ultrasonography of mother or detected at birth were included in this study. Neonatal data regarding gestational maturity, birth weight, sex, anomalies present in the neonate and outcomes were documented. As per the proforma made, relevant information regarding maternal age, parity, maternal disease, maternal drug intake, previous bad obstetric history, consanguinity, and maternal antenatal investigations including antenatal ultrasonography were obtained by reviewing the maternal and labour ward records and by interviewing the parents.

The newborns were examined and assessed systematically for the presence of congenital anomalies. Diagnosis of congenital anomalies was based on clinical evaluation of newborn babies by the pediatrician and other appropriate investigations such as radiography, ultrasonography, echocardiography and chromosomal analysis etc. Anomalies in the study population was classified as per European surveillance of congenital anomalies classification guidelines into major and minor anomalies. The spectrum of anomalies were analyzed in system wise manner. Immediate outcome of the baby, whether the baby was alive as dead, whether the baby needed immediate neonatal support or not was noted. Data was entered into excel data sheet and appropriate statistical analysis was performed.

Results:

Table–I: Shows that the predominant system involved was gastro-intestinal (GI) system (30.87%) followed by central nervous system (23.53%), Musculoskeletal system (16.17%), and urinary system (8.82%).

Cleft lip and cleft palate (14.70%) was the most common anomaly seen in the Gastro-intestinal system and like wise congenital hydrocephalus (14.70%) in central nervous system, craniosynostosis (8.82%) in Musculoskeletal system, Hydronephrosis (5.88%) in urinary system. Multiple congenital anomalies involved 11.76%, congenital Rubella Syndrome (4.41%) and collodian baby (1.47%) in Miscellaneous group.

Table–II: Show that, out of 68 subjects still births accounted for 26.47% and live births accounted for 73.53%. Among the anomalous babies 67.65% were male and 32.35% were female. Of them birth weight ≥ 2.5 kg accounted for 60.29% and weighing <2.5 kg (39.71%) babies were congenitally malformed. Out of 50 alive babies, 35 babies (70%) admitted in the neonatal ward and 15 babies (30%) were not admitted.

Table–III: Shows that different components of the obstetric history were explored. Regarding the parity of the mothers, 28 were primiparas and rest 40 were multiparas. Cases of congenital anomaly were found in 58.82% of multiparas, whereas in primiparas, the proportion was 41.18%. In the present study, 11 (16.18%) mothers had a history of consanguinity, whereas in non-consanguineous couples were 57 (83.82%). Among 68 subjects 10.29% gave the history of having congenital anomalous babies.

In this table also shows that 52.94% were with <37 weeks of gestation and 47.06% were with 37 weeks or more of gestation.

In the present study 23 (33.82%) mothers had a history of significant maternal illness. Among 68 subjects; 29 (42.65%) are the history of having abortion. It has been seen that more than half of the mothers were aged <35 years (76.47%) with only 23.53% of the mothers were over the age of 35 years. About 54.41% were the history of irregular/absent antenatal checkup and regular antenatal checkup were 45.59%.

Table–I: System wise distribution of congenital anomalies (n=68)

Anomalies	No.	%
Central Nervous System	**(23.53%)**	
Congenital Hydrocephalus	10	14.70%
Anencephaly	1	1.47%
Encephalocele	1	1.47%
Meningocele	2	2.94%
Meningomyelocele	2	2.94%
Urinary System	**(8.82%)**	
Hydronephrosis	4	5.88%
Polysystic kidney disease	2	2.94%
Gastrointestinal System	**(30.87%)**	
Gastroschisis	2	2.94%
Omphalocele	3	4.41%
Anorectal anomalies	6	8.82%
Cleft lip and cleft palate	10	14.70%
Musculoskeletal System	**(16.17%)**	
Achondroplasia	2	2.94%
Gross Bony defect (Absence of 1st and 2nd lumber vertebra)	1	1.47%
Craniosynostosis	6	8.82%
Congenital dislocation of hip joint	2	2.94%
Miscellaneous	**(17.64%)**	
Multiple congenital anomalies	8	11.76%
Collodian baby	1	1.47%
Congenital rubella syndrome	3	4.41%

Table – II: Immediate fetal out come

(Association of type of birth, gender, birth weight, admission of the babies with congenital anomalies)

State of the baby	Frequency	Percentage
Still birth	18	26.47%
Live birth	50	73.53%

Sex of the baby	Frequency	Percentage
Male	46	67.65%
Female	22	32.35%

Birth weight	Frequency	Percentage
<2.5 kg	27	39.71%
≥2.5 kg	41	60.29%

Admission in the neonatal ward (In case of live birth)	Frequency	Percentage
Admitted	35	70%
Not admitted	15	30%

Table–III: Obstetric history

(Association between congenital anomalies and maternal and perinatal risk factor)

Obstetric history	Frequency	Percentage
a. Parity		
Primi para	28	41.18%
Multi para	40	58.82%
b. History of Abortion		
None	39	57.35%
Once or more	29	42.65%
c. History of congenitalAbnormal babies		
None	61	89.71%
One or more	7	10.29%
d. Gestational age (week)		
<37 weeks	36	52.94%
≥37 weeks	32	47.06%
e. History of consanguinity		
Present	11	16.18%
Absent	57	83.82%
f. History of Maternal illness		
Present	23	33.82%
Absent	45	66.18%
g. History of Antenatal check-up		
Regular	31	45.59%
Irregular/Absent	37	54.41%
h. History of Maternal age		
<35 years	52	76.47%
>35 years	16	23.53%

Discussion:

Significance of congenital malformation lies not only in their contribution to neonatal and perinatal mortality but, also in causing disabilities and handicaps in infant and children.[1] It is a priority health problem in newborns. During the study period, 68 newborns with major congenital anomalies were included.

In the present study, the predominant system involved in the major anomalia is gastrointestinal (GI) system (30.87%) followed by central nervous system (23.53%), musculoskeletal system (16.17%) and urinary system (8.82%).

In the current study, Cleft lip and Cleft palate (14.70%) was the most common anomaly seen in the gastrointestinal system which is comparable to a study done by Sarkar S et al (6.6%).[6]

Neural tube defects second commonest anomaly in this study (23.53%). Congenital Hydrocephalus was most common Neural tube defect found in this study (14.70%). Other defects being Meningocele, Meningomyelocele, Encephalocele, Anencephaly (Table-I).

Similar results was found by K Fatema et al[7] where she has shown Neural tube defect was the commonest type of anomaly. Among the most frequent Neural tube defect was hydrocephalus. Ensuring folic acid supplementation during preconception period can lower the frequent of these anomalies.[7]

In the present study, multiple defects were present 11.76% of the babies (8 to 68 babies with anomalies). Similar results were found by K Fatema et al[7] where she has shown 11.67% of the neonates with multiple defects. In our study, results is lower that observed by other studies like in India, Mishra and Bhaveja[8] found multiple anomalies are 37.6% of anomalies who had reported 45.2% in his study.

However this could be due to the fact that some of the associations and diseases could not be confirmed because of lack of further workup, early death and logistic reasons.

Cardiac malformation in this study was absent, may be due to under diagnosis because of lack of availability of sophisticated diagnostic technique and neonatal follow up.

In this study, low birth weight (LBW) (<2.5kg) associated with risk of congenital malformtions. This highlights the fact that the presence of congenital anomaly itself hampers the growth of a developing foetus.[10]

Present study has documented higher incidence of malformation in male babies (67.65%) than female babies (32.35%). Other studies like K Fatema et al[7] and Aman T et al[9] has also documented similar results.

In our study, out of 68 subjects, still births accounted for 26.47% and live births accounted for 73.53%. In other study like K Fatema et al[7] found higher percentage of congenital malformation in still birth. Usually major malformations are incompatible with life, this may the reason of high incidence of congenital malformation in still born babies.[10] In this study, lower percentage of still births than live births could be due to total babies born in the department of Obstetrics and Gynaecology of DNMCH during the study period.

Previous studies have reported significantly higher incidence of congenital malformation among the multiparas.[10] Our results is consistent with this finding (58.82%).

Consanguineous marriages (when parents are related by blood) are reported to play a major role in the occurance of congenital malformations.[11] In the present study, non-consanguineous couples were more (83.82%). In our study, majority of mothers with congenital anomalous fetuses belong to gestational age <37 weeks (52.94%) as seen in other study.[7]

Regular antenatal check up may help early diagnosis and termination of fetuses incompatible with life. Present study has reported antenatal visit in majority of mothers were irregular or absent (54.41%).

Maternal age is also a risk factor for abnormal intrauterine fetal development. Advanced maternal age increases the risk of chromosomal abnormalities, including Down's Syndrome.[1] Swain's study has also documented highest incidence of malformations in babies of mothers more than 35 years of age.[12]

But in our study, more than half of mothers were aged <35 years (76.47%) with only 23.53% of the mothers were over the age of 35 years. Prenatal risk factors associated with occurrence of anomalies is also well established from previous studies.

Risk factors that are identified included Maternal illness e.g. maternal infections such as syphilis and rubella etc, maternal anaemia, malnutrition, maternal diabetes, maternal poor socioeconomic status, maternal exposure to certain pesticides and other chemicals, as well as certain medications, alcohol, tobacoo and radiation during pregnancy, may increase the risk having a fetus or neonate affected by congenital anomalies.[12] In this study, 23 (33.82%) Mothers with congenital anomalies babies had history of significant maternal illness such as diabetes, fever, anaemia, rubella,

UTI, malnutrition, hypertension etc. This is because could not give proper history and irregular/absent antenatal visit.

Congenital anomaly contributed a significant proportion of infant mortality and morbidity as well as fetal mortality.

This study is encountered only among newborn with major congenital anomalies. From this study some clue may derived regarding the frequency and distribution pattern of major congenital malformation among Bangladeshi populations. Despite the high risk of recurrence of congenital malformations, there are no well accepted preventive measures in developing countries. It indicates that strong preventive measures for congenital anomalies in this region are needed.

Conclusion:

Congenital anomalies are an important causes of infant and childhood deaths, chronic illness and disability as well as fetal mortality. Mortality of infants born with congenital anomalies varies with the type of anomaly. This study has highlighted types of major congenital anomalies seen in our locality. To draw significant conclusions it is recommended that all neonates should be examined with scruting for overt as well as occult congenital anomalies.

Regular antenatal visits and prenatal diagnosis are recommended for prevention, early intervention, even planned termination, when needed will reduced perinatal morbidity and mortality. Antenatal diagnosis, genetic counselling, better diagnostic and management facilities should be provided to improve the outcome.

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Original Article

Evaluation of demographical, etiological and clinical characteristics of acute drug poisoning

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Abstract

Background: The poignant part of the problem is that these are mostly preventable. The word poison originates from the latin word potionem which means deadly draught. The Herald of modern Toxicology, Paracelsus, supposed that everything is poison and only the dose plays a pivotal role.

Objective: The aim of the study to investigated the demographical, etiological and clinical characteristics of acute drug poisonings.

Methodology: The study design was descriptive observational type of case study that was conducted in different public and private hospital in Dhaka city. A sample of 100 poisonings patients was taken by convenience sampling technique. The selection of cases was based on the patient's diagnosis on discharge and was accomplished through analysis of all the medical records of the patients hospitalized in Internal Medicine and Toxicology Department, from the Jan. 2017 to Dec. 2018.

Results: Acute drug poisonings incidence rate was 25.6%, majority (69.0%) patients were female. Majority (36.0%) of the patients were multiple drug poisonings followed by 14(14.0%) were benzodiazepines, 9(9.0%) anticonvulsants, 9(9.0%) barbiturates and 6(6.0%) cardiovascular medication. Category of acute drug poisonings were not statistically significant ($p>0.05$) between male and female groups.

Conclusion: Female were predominant and majority of them were multiple drug poisonings. Common drug poisonings were found benzodiazepines, anticonvulsants, barbiturates and cardiovascular medication.

Keywords: Acute drugs Poisoning, Mortality, Morbidity Demography, Etiology.

Introduction:

Morbidity and mortality as a result of poisoning, is a raging problem worldwide. The poignant part of the problem is that these are mostly preventable, if a basic treatment infrastructure facility is available with immediate accessibility.[1] The word poison originates from the latin word potionem which means deadly draught. The Herald of modern Toxicology, Paracelsus, supposed that everything is poison and only the dose plays a pivotal role.[2] Poison is any substance (solid liquid or gaseous) which when introduced in the living body or brought into contact any part, thereof will produced ill health or death by it constitutional or local effect or both. Poisoning both accidental and intentional is a significant contributor to morbidity and mortality throughout the world. According to WHO, three million acute poisoning cases with 2, 20, 000 deaths occur annually.[3] Poisoning with pharmaceutical products is ubiquitous, as we can see in the reports originating from very different countries.[4,5] There are many differences with respect to the pattern and cause of acute poisoning between geographical regions, even within the same country, and there is a constant need for new information in this field, in order to develop educational and prevention programs.[6] Our aim was to provide a detailed screening on aspects of the pattern of drug poisoning in our region and to compare our experience with the data reported by the researchers from other countries. The final envisaged end point was to identify the risk factors for drug poisoning.

Methods:

The study design was descriptive observational type of case study that was conducted retrospectively the medical charts of all patients with acute drug poisoning who were admitted in different Government Medical College in Dhaka City between January 2017 and December 2018. The selection of cases was based on the patient's diagnosis on discharge and was accomplished through analysis of all the medical records of the patients hospitalized in Internal Medicine

and Toxicology Department, for the last 2 years. This Data collection form was designed for this purpose and included the following variables: demographical characteristics including age, gender, occupation, residence (rural or urban area) and type of exposure (intentional or accidental); drug category; clinical form of poisoning (mild, medium, coma); number of pills; provenience of the drug (prescribed by the family physician, family members and pharmacy); the time between the poisoning and the admission to the hospital; previous history of poisoning; history of psychiatric disease; blood alcohol levels; length of hospital stay and clinical outcome. When the information was not available, it was classified as unknown.The data was assessed after the finalization of the medical records. Patients who did not require admission to the toxicology department and were discharged from the emergency unit were not included in this study. Also, the adverse reactions, the drugs secondary effects and chronic poisonings were excluded.The drugs were classified as benzodiazepines, barbiturates, neuroleptics, anticonvulsants, antidepressants, cardiovascular drugs, acetaminophen, nonsteroidal anti-inflammatory drugs (NSAIDs) and nonopioid analgesics, antibiotics, hypoglycemiant drugs, opioids, tuberculostatics, other medications (vitamins, antithyroid drugs, iron compounds, etc.) and unknown. The database thus created was analyzed using SPSS for Windows 23.0 In the statistical analysis, the chi-square test for comparing nominal variables was used when proportions were analyzed for significant differences. Differences are considered statistically significant when p values are under <0.05.

Results:

Table I: Incidence of acute drug poisonings

	Number of patients
Total acute poisonings	390
Number of poisonings	100
Percentage of poisonings	25.6

Total 390 patients conducted in the department of Medicine of Dhaka Medical College during 1 year follow up. 100 patients were taken acute drug poisonings and their incidence rate of 25.6% (Table I).

Table II: Demographic variables of the study patients

Demographic variables	Number of patients	Percentage
Age (years)		
≤20	17	17.0
21-30	29	29.0
31-40	25	25.0
41-50	13	13.0
51-60	10	10.0
>60	6	6.0
Sex		
Male	31	31.0
Female	69	69.0
Educational status		
Illiterate	11	11.0
Primary	55	55.0
Secondary	14	14.0
Graduate	20	20.0
Occupational status		
Unemployed	41	41.0
Employed	59	59.0
Residence		
Urban	62	62.0
Rural	38	38.0

Majority (69.0%) patients were female, 55.0% of the patient's complete primary education, 41.0% patients was unemployed and 62.0% of the patients came from urban areas (Table II).

Table III: Categories of drugs involved in acute drug poisonings

	Number of patients	Percentage
Multiple drug	36	36.0
Benzodiazepines	14	14.0
Anticonvulsants	9	9.0
Barbiturates	9	9.0
Cardiovascular drugs	6	6.0
Neuroleptics	4	4.0
NSAIDs and nonopioid analgesics	3	3.0
Antidepressants	3	3.0
Tuberculostatics	2	2.0
Antibiotics	1	1.0
Acetaminophen	1	1.0
Sedatives	1	1.0
Snake bite	1	1.0
Puffer fish	1	1.0
Unknown drugs	9	9.0

Majority (36.0%) of the patients were multiple drug poisonings followed by 14(14.0%) were benzodiazepines, 9(9.0%) anticonvulsants, 9(9.0%) barbiturates and 6(6.0%) cardiovascular medication (Table III).

Table IV: Association between acute drug poisonings with gender

Category of acute drug poisonings	Total cases	Male (n=31)		Female (n=69)		p value
Multiple drug	36	11	30.6	25	69.4	0.943^{ns}
Benzodiazepines	14	5	35.7	9	64.3	0.449^{ns}
Anticonvulsants	9	4	44.4	5	55.6	0.287^{ns}
Barbiturates	9	2	22.2	7	77.8	0.430^{ns}
Cardiovascular drugs	6	2	33.3	4	66.7	0.607^{ns}
Neuroleptics	4	1	25.0	3	75.0	0.635^{ns}
NSAIDs and nonopioid analgesics	3	1	33.3	2	66.7	0.676^{ns}
Antidepressants	3	1	33.3	2	66.7	0.676^{ns}
Tuberculostatics	2	1	50.0	1	50.0	0.526^{ns}
Antibiotics	1	0	0.0	1	100.0	0.690^{ns}
Acetaminophen	1	0	0.0	1	100.0	0.690^{ns}
Sedatives	1	0	0.0	1	100.0	0.690^{ns}
Snake bite	1	0	0.0	1	100.0	0.690^{ns}
Puffer fish	1	0	0.0	1	100.0	0.690^{ns}
Unknown drugs	9	3	33.3	6	66.7	0.750^{ns}

ns= not significant
p value reached from chi square test

Category of acute drug poisonings were not statistically significant (p>0.05) between male and female groups (Table IV).

Table V: Association between acute drug poisonings with age

Category of acute drug poisonings	Age (years)					
	≤20	21-30	31-40	41-50	51-60	>60
Multiple drug	7	8	9	7	3	2
Benzodiazepines	2	5	5	0	1	1
Anticonvulsants	2	4	0	1	1	1
Barbiturates	0	3	4	1	1	0
Cardiovascular drugs	1	1	1	1	1	1
Neuroleptics	1	1	1	0	0	1
NSAIDs and nonopioid analgesics	0	1	0	1	1	0
Antidepressants	0	1	1	1	0	0
Tuberculostatics	0	1	1	0	0	0
Antibiotics	1	0	0	0	0	0
Acetaminophen	1	0	0	0	0	0
Sedatives	0	1	0	0	0	0
Snake bite	0	0	1	0	0	0
Puffer fish	0	0	1	0	0	0
Unknown drugs	2	3	1	1	2	0
Total	**17**	**29**	**25**	**13**	**10**	**6**

The 21–30 years age group had the biggest incidence, 29.0%, while patients over 60 years old, 6%, were less frequently hospitalized for drug poisonings (Table V).

Discussion:

In this study conducted in the department of Medicine of different Government Medical College in Dhaka City between January 2017 and December 2018, 100 patients were taken acute drug poisonings and their incidence rate of 25.6%. Sorodoc et al.[7] a number of 2852 cases of acute poisonings were recorded in our clinic, and among those, drug poisonings represented 28.43% (811 cases). Consistent with the data from the majority of the studies from different countries[5,8-10] attempting suicide was the most common cause of poisoning. In the Romanian region we surveyed, the 28.43% drug poisonings is a result that aligns us with reports from Zimbabwe (30.4%), India (New Delhi 18.8%) and Thailand (19%), where the top leader in poisonings are the organophosphorus compounds.[11-14]

In present study showed majority (69.0%) patients were female, 55.0% of the patient's complete primary education, 41.0% patients was unemployed and 62.0% of the patients came from urban areas. Sorodoc et al.[7] reported that the total number of drug poisonings, the highest incidence was recorded in women 66.46%, 39.94% patients were unemployed, 35.78% had undergraduate education and 19.11% were retirees. The lowest incidence of drug poisonings was observed in the group with graduate education (5.17%). The majority (61.67%) of the patients came from urban areas. Sungur et al.[15] studied that the poisoning cases, 437 (52.1%) were female, and 402 (47.9%) were male. The mean age was calculated as 33.50. Chowdhury et al.[16] study observed that among 1903 cases, 1012 (53.1%) were male and 891 (46.8%) female with a ratio of 1.4: 1. Khanum et al.[17] study also reported among 84 patients, 51 (60.71%) were male and 33 (39.29%) were female. Regarding occupation, 33 (39.28%) cases were housewives followed by students 18 (21.43%), service holders 09 (10.71%), businessmen 10 (11.90%), farmers 12 (14.29%) and retired persons 2 (2.38%). Educated persons (84.43%) ingested poison more than the illiterate persons (15.47%).

In this study showed that majority (36.0%) of the patients were multiple drug poisonings followed by 14(14.0%) were benzodiazepines, 9(9.0%) anticonvulsants, 9(9.0%) barbiturates, and 6(6.0%) cardiovascular medication, 4(4.0%) neuroleptics, 3(3.0%) NSAIDs and nonopioid analgesics, 3(3.0%) antidepressants, 2(2.0%) tuberculostatics, 1(1.0%) antibiotics, 1(1.0%) acetaminophen, 1(1.0%) sedatives, 1(1.0%) snake bite, 1(1.0%) puffer fish and 9(9.0%) unknown drugs. Sorodoc et al.[7] the most frequently involved drugs were the benzodiazepines (13.69%), followed by anticonvulsants (8.63%), barbiturates (8.51%) and cardiovascular medication (5.92%).[5,6,18,19]

Recently Rahman et al,[20] found that it is noticeable that puffer fish poisoning comprised 0.53% of total poisonings which was quite rare in other parts of Bangladesh. Evidence was reported from only Khulna district before, though recently largest outbreak occurred in inland districts (Natore, kishoreganj and Dhaka).[21,22]

Robed et al.[23] Study showed that 29.0% poisoning occurs due to anti cholinergic pesticide, 37.1% by sedative, 9.5% following snake bite, 3.0% by Kerosene, and rest 22.5% were due to other substances like methanol, copper-sulphate, puffer fish, harpic, drugs except sedative, naphthalene, nail polish, Dhutura, Chlorine gas, depilatory cream, mortein, rat killer, anti-louse, anti-scabies, inorganic acid, etc.

In present study showed category of acute drug poisonings were not statistically significant (p>0.05) between male and female groups. Comparable findings have also been reported in several studies conducted in Iran, Taiwan, Turkey and Hong Kong.[5,6,24-26] but differs from epidemiological studies from the western part of Iran and India, where the poisonings are more frequent in men, possibly due to the religious characteristics in these regions, reasons actually mentioned by the authors.[12,13] Sungur et al.[15] reported there was a statistically significant difference between the cause of poisoning and gender ($P < 0.001$).

In this study showed that the 21–30 years age group had the biggest incidence, 29.0%, while patients over 60 years old, 6%, were less frequently hospitalized for drug poisonings. Sorodoc et al.[7] study showed the 21-30 years age group had the biggest incidence, 29.8%, while patients over 70 years old, 3%, were less frequently hospitalized for drug poisonings (24 cases). The highest incidence was recorded in young adults (21–30 years of age), situation also reported by investigators from Iran and developing countries.[5,9,24,27,28]

In this study observed that the cases arrived in the clinic at 6.5±6.2 hours from ingestion. The raised value of standard deviation indicates the higher variability of the parameter in our group. The patients were hospitalized for 3.2±2.2 days, the longest hospitalization period being registered for neuroleptics poisoning, 4.0±3.1 days. From all patients, 21.0% were admitted in the intensive care unit. Sorodoc et al.[7] the cases arrived in the clinic at 6.42±7.80 hours from ingestion. The raised value of standard deviation indicates the higher variability of the parameter in our group. The patients were hospitalized for 3.12±2.39 days, the longest hospitalization period being registered for neuroleptics poisoning, 4.04±3.41 days. From all patients, 20% were admitted in the intensive care unit. Another study reported in literature was 1.5 days in studies from North Eastern England and Western Iran, 3.02±2.8 days in Tabriz/Iran and 4 days in Karnataka/India.[9,13,29]

Conclusion:

In conclusion female were predominant and majority of them were multiple drug poisonings. Common drug poisonings were found benzodiazepines, anticonvulsants, barbiturates and cardiovascular medication.

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Original Article

Study On Maternal & Fetal Outcome Of Jaundice Pregnancy

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Abstract

Background: Pregnancy with jaundice is regarded as high risk pregnancy so it is considered very important sign during antenatal check up. It complicates pregnancies and is one of the important causes of maternal and neonatal morbidity and mortality worldwide. Viral hepatitis is the most frequent cause of jaundice associated with pregnant woman.

Objective: To assess the maternal & fetal outcome of jaundice in pregnant women

Methods: This study was a cross sectional study carried out Department of Obstetrics and Gynaecology, Dhaka National Medical College Hospital, Dhaka From April 2016 to September 2017. All diagnosed cases of pregnancy with jaundice full filing the inclusion and exclusion criteria in the department of Obstetrics and Gynecology, Dhaka National Medical College Hospital, Dhaka. Total 50 sample were taken in this study.

Results: Fifty pregnant women the mean age was 24.40±4.32 years. The causes of jaundice during pregnancy were viral hepatitis (82%), obstetrics cholestasis (10%) and HELLP syndrome (8%). The total infective pathology due to hepatitis E (HEV) being the major cause of infection i.e. 42%, followed by Hepatitis Hepatitis B in 32%, Hepatitis C (HCV) in 2%. However, 8% of the mothers were infected with mixed viral hepatitis. Among them 12% underwent caesarean section. Among the neonates of the 47 mothers who recovered, 16% had a neonatal death and 34% had low birth weight.

Conclusion: This study shows most hepatitis B (HBV) during third trimester of pregnancy associated with more serious complication than other types of viral hepatitis. It is recommended that women in the reproductive age group (before the first pregnancy) should receive full course of hepatitis B vaccine. Public awareness, complete immunization against viral hepatitis, better sanitation facilities, safe drinking water, increased availability of antenatal care for early detection and well equipped hospitals for intensive care.

Keywords: Pregnancy, Jaundice, Maternal and Fetal outcome.

Introduction

Jaundice in pregnancy is an important medical disorder seen more often in the developing countries. Clinical jaundice is established when the serum bilirubin level exceeds 2mg% (normal 0.2-0.8 mg%).[1] Approximately 3-5% of pregnant women have jaundice in pregnancy, whilst relatively rare, has potentially serious consequences for maternal and fetal health.[1,2]

There are several causes of jaundice in pregnancy with infections due to hepatitis viruses A, B, C, D and E. Incidence of hepatitis varies greatly around the world: in developed countries, the incidence is around 0.1%, whereas in developing countries it can range from 3-20% or higher. The course of most viral hepatitis infections (A, B, C, D) is unaltered by pregnancy, although in developing countries there is a higher incidence of infant mortality with fulminant hepatitis. The exception is hepatitis E where pregnant women who contact the disease exhibit fatality rates of 10-20%.[3]

Jaundice in pregnancy can be caused by viral hepatitis, intrahepatic cholestasis of pregnancy, choledocholithiases, HELLP syndrome (hemolysis, elevated liver enzymes, and a low platelet count), severe preeclampsia, and acute fatty liver of pregnancy. Acute fatty liver of pregnancy occurs in approximately 1 in 13,000 pregnancies. More than 90% of patients with acute fatty liver of pregnancy have jaundice and disseminated intravascular coagulopathy.[4]

The various maternal complications associated with viral hepatitis are preterm labour, obstetric haemorrhage, fulminant hepatitis, hepatic encephalopathy, renal failure, DIC and death. The various foetal complications are intrauterine death, prematurity and risk of vertically transmitting the hepatitis infection.[5]

Medical termination of pregnancy does not always alter the prognosis of the patient. The foetal outcome includes increased incidence of abortion, premature labour and intrauterine death leading to increased foetal wastage. Perinatal mortality (including stillborns and death of the baby within seven days following delivery) of pregnancies with jaundice in developing countries range form 20% to as high as 70%.[6]

Methodology:

This study was a cross sectional study carried out Department of Obstetrics and Gynaecology, Dhaka National Medical College Hospital, Dhaka From April 2016 to September 2017. All diagnosed cases of pregnancy with jaundice full filing the inclusion and exclusion criteria in the department of Obstetrics and Gynecology, Dhaka National Medical College Hospital, Dhaka. Total 50 sample were taken in this study. Data was collected using a structured questionnaire (research instrument) containing all the variables of interest. Data were processed and analyzed with the help of computer program SPSS (Statistical package for Social Science) with version 20.

Results:

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

Characteristics	No. of patients	Percentage (%)
Age in years		
≤20	9	18
21-25	25	50
26-30	11	22
31-35	5	10
Mean±SD	24.40±4.32	

Table-II: Distribution of jaundice (n=50)

Jaundice	No. of patients	Percentage (%)
Mild	4	8
Moderate	33	66
Severe	13	26
Total	**50**	**100.0**

Table-III: Distribution of patients according to causes of jaundice during pregnancy (n=50)

Causes	No. of patients	Percentage (%)
Viral hepatitis	41	82
HAV	0	00
HBV	16	32
HEV	21	42
HCV	1	2
Mixed viral hepatitis	3	6
Obstetric cholestasis	5	10
HELLP syndrome	4	8
Total	**50**	**100**

TableIV: Distribution of mode of delivery (n=50)

Mode of delivery	No. of patients	Percentage (%)
Normal	44	88
LUCS	6	12
Total	**50**	**100.0**

Table -V: Distribution of maternal outcome

Outcome	No. of patients	Percentage (%)
Improved well	48	96
Maternal death	2	4
Total	**50**	**100.0**

Table-VII: Distribution of maternal complication and viral hepatitis in study population (n=18)

Maternal complication	HAV	HBV	HEV	HCV	Mixed
	No(%)	No(%)	No(%)	No(%)	No(%)
PPH (n=14)	3(21.42%)	7(50.0)	1(7.14)	1(7.14)	2(14.28)
Fulminant hepatic failure (n=2)	0(00)	0(00)	0(00)	0(00)	2(100)
Heart failure (n=2)	0(00)	2(100)	0(00)	0(00)	0(00)

Table-VII: Birth weight

Fetal outcome	No. of patients	Percentage (%)
<2.5 kg	17	34
>2.5 kg	33	66
Total	**50**	**100.0**

Table -VIII: Distribution of fetal outcome (n=50)

Fetal outcome	No. of patients	Percentage (%)
Survives well	42	84
Perinatal death	8	16
Total	**50**	**100.0**

Discussion:

Hepatitis in pregnant women may be consequent to infection with hepatitis viruses A, B, C, D and E. Hepatitis E is the most common infecting accounting for 50- 70 % of all patients with sporadic viral hepatitis. Studies from the developed countries conclude that pregnant state perse has no adverse effect on the course of hepatitis, provided nutrition is adequate. However increase in fetomaternal mortality has been reported mainly from the developing countries.[7,8]

The age of women included in the study was in the range of 19-35 years. The mean age of the patients in the study group was 24.40±4.32 years. Similar study was conducted in our hospital by Patra et al.[9] in the year 2003-2005 on 220 pregnant women presenting

with jaundice caused by acute viral hepatitis had found mean age to be 24.3±3.3 yrs. The mean age of the patients in our study is comparable to another Indian study conducted by Kumar et al.[10] who studied prevalence of HEV and its complication in 62 pregnant women with acute viral hepatitis in their third trimester admitted in Delhi tertiary hospital in the year 2003 was seen to be 24.13±3.6 yrs. It is consistent with other international studies conducted by Miranda et al.[11] (23.8±6 yrs) who studied seroprevalence of HBV and HIV and associated risk behaviors among 1608 attending antenatal attendees of Vitoria, Brazil in the year 1999 and by Surya et al.[12] (27±5yrs) who screened 2,450 pregnant mothers.

This study shows 32% of cases with clinical jaundice were infected with Hepatitis B. Prevalence of HBV infection in pregnant women with acute viral hepatitis reported is consistent with other Indian studies. An earlier study conducted in our hospital by Nguyen et al.[13] in the year 2003-2005 on 220 pregnant women presenting with jaundice caused by acute viral hepatitis had found 33% prevalence of HBV.

Other hepatitis viral markers positive in pregnant women with clinical jaundice were anti HEV. The prevalence of HEV antibody was found to be 42% in Four studies from New Delhi[10,14] reported prevalence of HEV as 37%, 45.2%, 47.4% and 60%. Jaiswal et al.[14] in central India and Aziz et al.[15] in Pakistan reported that HEV is responsible for 58% and 62% of cases of acute viral hepatitis in pregnant women, respectively. Khuroo et al.[16] in Saudi Arabia reported 49.6% prevalence after evaluating 76 pregnant women with hepatitis.

This study HCV was found to be 2% in cases of pregnant women with clinical evidence of hepatitis in our study. This is in accordance with the earlier studies of Patra et al.[9] (5%) in the same institution. However, in the past studies from India have not implicated HCV prevalence in pregnant women with acute viral hepatitis. Beniwal et al.[17] (n=97) and Singh et al.[18] (n=50) both in tertiary care Delhi hospital found zero prevalence, probably the number of cases studied was too low. Study outside India conducted by Khuroo et al.[16] from Saudi Arabia also reported low prevalence of HCV (1.7%).

Low prevalence in pregnant women has been observed studies outside India by Khuroo et al.[16] in Saudi Arabia (1.5%) and Aziz et al.[15] in Pakistan (4%). It was seen that six patients of the 100 pregnant women with clinical evidence of hepatitis were co infected with another hepatitis virus. Four out of 37 (10.8%) HBsAg positive mothers were co infected with Hepatitis D viruses and 2 out of 37 (5.4%) HBsAg positive mothers were co infected with HCV. Similar coinfection study on pregnant women in Delhi by Kumar et al.[10] showed HBV and HCV coinfection to be 4.8%. Studies outside India in Saudi Arabia and Africa[14] have reported HBV and HDV coinfection as 1.5% and as 15.6%.

Out of 50 mothers, 94% recovered completely. Among these 12% underwent caesarean section. The majority pregnant mothers had vaginal delivery. Postpartum haemorrahge is a common maternal complication of hepatitis in pregnancy and is observed in studies by Beniwal et al.[17] (14.9%) after studying 48 pregnant women with acute viral hepatitis. Mirghani et al.[19] (20.8%) in a case control study on 50 pregnant women with acute viral hepatitis at a Sudan hospital. It is the important complication observed in Indian studies also by Veronica et al.[20] (56%) conducted at Ludhiana tertiary hospital on 65 pregnant women with jaundice.

Foetal Outcome eight out of 50 pregnant women with clinical evidence of hepatitis in the study group were died. All of these mothers had Hepatitis E infection and underwent encephalopathy and died. The findings are consistent with studies by Mirghani et al.[19] (6.3%), Medhat et al.[21] (8.3%), and Kumar et al.[22] (3.8%). Out of ninety-four mothers who recovered from viral hepatitis, 5 (5.3%) had lost their neonates. Medhat et al.[21] observed 6.3% of neonatal deaths whereas Tripti et al.[23] observed it to be 11.8%. Low birth weight was found in 30.8% of neonates. Low birth weight in infants born to mothers with acute viral hepatitis has been reported by Kumar et al.[22] (7.6%) and Veronica et al.[20] (20%).

Conclusion:

This study also shows hepatitis B infection was the commonest cause of maternal mortality in jaundice with pregnancy followed by, in postpartum hemorrhage (PPH) fulminnat hepatic failure with severe anemia. The study suggests that it is mostly restricted to last trimester and is associated with preterm labour and significant perinatal death. It also indicates that there is increased prevalence of Hepatitis B virus infection in pregnant women in Bangladesh. Thus to conclude, public awareness and complete immunization against viral hepatitis, better sanitation facilities, safe drinking water and increased availability of antenatal care for early detection and well equipped hospitals for intensive care will go long way in the reduction of viral hepatitis in pregnancy and also its associated maternal and perinatal mortality and morbidity.

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Original Article

Antibiotic Sensitivity Pattern Of Different Isolated Bacteria In Pus Sample

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Abstract:

Background: Knowledge of local common pathogens and their resistance status can guide clinician to choose appropriate antibiotic for empirical treatment of patients.

Objective: This study was undertaken to determine the frequently isolated organism from pus culture and to determine the antibiotic sensitivity patterns. The human skin and soft tissue infections (SSTIS) caused by microbial pathogens during or after trauma, burn injuries and surgical procedures. These result in the production of pus, a white yellow fluid comprised of dead WBC, cellular debris and necrotic tissues.

Methods: Total 110 samples were collected from July 2018 to December 2018, to study antibiograms of various organism. All isolated bacteria were identified based on colony characteristics, Gram stain and standard biochemical tests and antibiotic susceptibility testing with disk diffusion method.

Results: Most commonly encountered organism was Staphylococcus aureus (56.2%) followed by E. Coli (21.4%), Klebsiella (8.1%), Pseudomonas (6.4%), Streptococcus pyogens (5.6%) and Proteus (2.3%).

Conclusion: The present study exemplify, there is an increasing need for gaining knowledge about the pattern of microbes and their antibiotic sensitivity and resistance, hence regular monitoring of bacterial sensitivity to antibiotics is essential.

Keywords: Wound infection, Bacterial pathogen, Antibiotic susceptibility pattern, Pus sample.

Introduction:

Pyogenic infections are characterized by local and systemic inflammation with pus formation. Infection of soft tissue are generally associated with the production of pus and bacteria involved are said to be pyogenic. Both aerobic and anaerobic bacteria have been implicated in wound infections which commonly occur under hospital environment and result in significant morbidity, prolonged hospitalization.[1] Coagulase positive Staphylococcus aureus has been found to be more dominant organism in pus.[2]

Since the emergency of methicillin resistant Staphylococcus aureus (MRSA) in 1960, there have been reports of increasing rate of infection by MRSA and this superbug has established itself as the common cause of nosocomial as well as community acquired infections.[3]

Further, many reports have shown the increasing rates of infection in children by MRSA.[4]

Moreover, wound infections were found to be higher (49%) among post-operative patients as compared to pre-operative patients (15.9%) in that study.[5] Post-operative wound infections have emerged as one of the important causes of morbidity among the hospitalized patients.[6] Wound infection is becoming a major concern among patients and health care practitioners for its increased toll on morbidity and financial loss. It also generates demand for attaining expensive management with in public health system.[7]

The study aimed to collect data on the bacteriological profiles of wound infection and their antibiotic susceptibility patterns in a teaching hospital in Bangladesh.

Materials and Methods:

This retrospective study was conducted in the department of Microbiology at Holy Family Red Crescent Medical College Hospital Dhaka, from July 2018 to December 2018. The microbiology department collected the samples from the outpatient and inpatient department of Surgery.

110 swab samples were collected from patients with various wound infections including post-operative surgical wounds, burn wounds, and superficial and soft tissue infections.

Bacteria were detected after aerobic culture at 37° C for 24 hours. Identification of bacteria was performed by biochemical test and antibiotic susceptibility test was done by disk diffusion method. Pus samples were processed for Gram staining and culturing. The sample were aseptically inoculated on blood agar (5% sheep blood) and MacConkey's agar plates, incubated aerobically at 35° C-37° C for 24 hr-48 hr.

Identification of isolated bacteria was done by colony morphology, gram staining and standard bio chemical tests by microbiologist using standard microbiological methods.

Antibiotics discs containing Amikacin (30 µg), Amoxicillin–clavulanic acid (30 µg), Azithromycin (30 µg), Ceftriaxone (30 µg), Cefotaxime (30 µg), Cefuroxime (30 µg), Ciprofloxacin (5µg), Cloxacillin (30 µg), Gentamycin (10 µg), Imipenem (10 µg), Levofloxacin (5 µg), Meropenem (10 µg), Piperacillin (100/10 µg), Tetracycline (30 µg) and Vancomycin (30 µg).

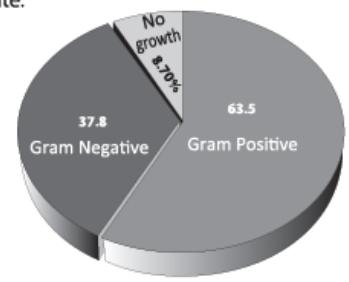
Antibiotic Susceptibilities of bacterial isolates were determined according to the method recommended by the clinical and laboratory standards Institute.[8]

The data were expressed in percentage as applicable. Comparison between groups was done by chi. Square test. Probably less than 0.05 was considered as significant.

Results: -

Characteristics of study participants: The mean age of the study participants were 29 years to 41 years and 58.1 % of participants were male.

Figure -I: Out of 110 cases shows the frequency of bacterial growth. Around 63.5% of culture positive plates out to be from positive organisms and 37. 8 % Gram negative. Only 8.7 % did not yield any growth in culture plate.



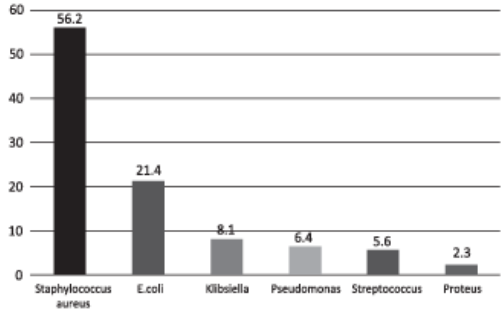
Pattern of bacterial growth among samples (N-110)

In this figure blue portion indicate Gram positive Yellow Indicate Gram Negative and gray portion indicate no growth.

Isolation of different types of bacteria:

Staphylococcus aureus 56.2% was predominantly found to be isolated among all the presenting bacteria. The frequency of E. coli and klebsiella were 21.4% and 8.1 % respectively and also Pseudomonas species, Streptococcus pyogens and Proteus were 6.4 %, 5.6%, 2.3 % respectively

Figure -II:



Rate of isolation of different bacteria are mentioned here based on number and their corresponding percentage.

Table-I: Sensitivity pattern of isolated Gram -positive bacteria (N=62)

Antibiotic Susceptibility test was done by Disk Diffusion Method.

Antimicrobial Agents	Staphylococcus aureus (56)	Streptococcus pyogens (6)
Amoxicillin (10 µg)	33 (58.9%)	3 (50.0%)
Penicillin (10 µg)	30 (53.5%)	4 (66.6%)
Cloxacillin (30 µg)	42 (75.0%)	4 (66.6%)
Azithromycin (30 µg)	40 (71.4%)	4 (66.6%)
Cephradine (30 µg)	31 (55.3%)	4 (66.6%)
Tetracycline (30 µg)	32 (57.1%)	3 (50.0%)
Gentamicin (10 µg)	43 (76.7%)	5 (83.4%)
Cefuroxime (30 µg)	32 (57.1%)	4 (66.6%)
Imipenem (10 µg)	52 (92.8%)	5 (83.3%)
Ceftriaxone (30 µg)	46 (82.1%)	5 (83.3%)
Vancomycin (30 µg)	31 (55.3%)	3 (50.0%)

The susceptibility pattern of Gram-positive bacteria was mostly isolated to Imipenem (92.8%) followed by Ceftriaxone (82.1%), Gentamycin (76.7%), Cloxacillin (75%), Azithromycin (71.4%) and others antibiotics (> 70%).

Table-II: Sensitivity pattern of isolated Gram -negative bacteria (N=37).

Antibiotic Susceptibility test was done by Disk Diffusion Method.

Antimicrobial agents	E. Coli (21)	Klebsiella (8)	Pseudomonas (6)	Proteus (2)
Cephradine (30 µg)	10 (47.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Cefixime (5 µg)	18 (85.7%)	1 (12.5%)	1(16.6%)	1 (50.0%)
Penicillin (10 µg)	8 (38.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Cefuroxime (30 µg)	19 (90.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Ceftriaxone (30 µg)	19 (90.4%)	1 (12.5%)	5 (83.3%)	2 (100%)
Ciprofloxacin (5 µg)	5 (23.8%)	0 (0.0%)	3 (50.5%)	1 (50%)
Azithromycin (30 µg)	8 (38.0%)	2 (25.0%)	3 (50.0 %)	2 (100%)
Amoxicillin (10 µg)	1 (4.7%)	1 (12.5%)	0 (0.0 %)	0 (0.0%)
Gentamycin (10 µg)	19 (90.4%)	3 (37.5%)	4 (66.6%)	1 (50%)
Imipenem (10 µg)	19 (90.4%)	1 (12.5%)	4 (66.6%)	2 (100%)
Ceftazidime (30 µg)	20 (95.2%)	3 (37.5%)	3 (50.5%)	2 (100%)

Most of the Gram negative isolates were sensitive to Ceftazidime (95.2%), Ceftriaxone (90.4%), Gentamycin (90.4%) and other antibiotics (>70%).

Discussion:

Any wound is at some risk of becoming infected. Management of post-operative wound infection remains a significant concern for physicians globally.[9] As wound infection is becoming the major hospital acquired infection, hospital environment plays a major role for causing wound infection.

In this study out of all sample (110) we found that Gram positive organisms accounted for 63.5% of isolates, compared to Gram negative isolates that accounted for 37.8%. The reason is that suppurative infection of the skin, ear and eye are common occurrences in hospitalized patients as well as in the outpatient's department.

Furthermore, wound infection is regarded as the most common nosocomial infection among surgical patients.[10]

It has been associated with increased trauma care, prolonged hospitals stay and treatment.[11]

Staphylococcus aureus (56.2%) was the major microbial pathogen responsible for the wound infection. According to Centre for disease control and prevention (CDC). Staphylococcus aureus is the most common organism associated with surgical wound infections. This study supports the results reported by Nwachukwu et.al.[12] Among the Gram-negative organisms Escherichia coli were frequently isolated (21.4%) in our study. A previous survey conducted in Lahore supported our findings demonstrating that Staphylococcus aureus was the main causative organism of surgical infection.[13]

In our study, we found Imipenem as the most active antibiotic, with a susceptibility of 92.8 % against Staphylococcus aureus. This study showed high sensitivity Staphylococcus aureus against imipenem, Cloxacillin and gentamycin. This finding corresponds to a previous study that also found that Staphylococcus aureus was susceptible to higher generation of antibiotics.[14] We found that Staphylococcus aureus is usually resistant to various antibiotics and the infection might be acquired in the hospital.

Among the Gram-negative bacteria Escherichia coli was found to be susceptible to ceftriaxone, cefotaxime, gentamycin, cefixime, ceftazidime and cefuroxime.

Isolated Klebsiella spp., all organism were resistant to cephradine, penicillin, cloxacillin, cefuroxime, tetracycline and ciprofloxacin. Similarly, Okonko et al.[15] had observed a high level of resistance by Klebsiella spp. to most antibiotics. However, they noticed that all Klebsiella spp. isolate were susceptible to gentamycin and ceftazidime. This high susceptibility pattern might support gentamycin as a suitable antibiotic to treat Klebsiella infection.[16]

Among isolated pseudomonas spp. all were resistant to cephradine, penicillin, cloxacillin, cefuroxime, amoxicillin and cefotaxime. Pseudomonas isolates were susceptible to ceftriaxone, imipenem, gentamycin, tetracycline, ciprofloxacin, azithromycin, ceftazidime. The susceptibility pattern that we found that most of the isolated strains were multi drug resistant, similarly, a study conducted in European setting reported a high resistance of Pseudomonas spp., mostly isolated from surgical wounds.[17]

The control of wound infections is becoming difficult due to widespread bacterial resistance to antibiotics. Previous studies also notified and increased incidence of bacterial infections by methicillin resistant Staphylococcus aureus, poly microbial flora and different fungi.[18]

As wound infections are found to be common in this study, prior knowledge of the causative agents of can be a helpful tool in selecting the empiric antimicrobial therapy to control infection.

Conclusion:

The result of the above study exemplify, there is an increasing need for gaining knowledge about the

pattern of microbes and their antibiotic sensitivity and resistance, which varies in a geographical manner. The isolates from this study showed that Staphylococcus aureus was the most isolated organisms from the pus culture report followed by E. Coli, Klebsiella,

Pseudomonas, Streptococcus pyogens and Proteus. Knowledge of causative agents of pyogenic infection and their antibiotic sensitivity pattern is very essential for the judicial administration of empirical therapy before culture are available. Antibiotic sensitivity of micro-organism varies from place to place and time to time, hence regular monitoring of bacterial sensitivity to antibiotics is essential.

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Original Article

Study On Prescribing Pattern Of Drug With Assessing Rationality In Paediatric Outpatient Department In A Tertiary Care Hospital In Dhaka City

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Abstract:

Background: Rational use of drugs forms the corner stone of successful implementation of rational use of medicines. Irrational drug prescription leads to ineffective treatment, occurrence of adverse effects, prolonged duration of illness, suffering of patients, and an increased economic burden to society.

Objective: To see the pattern and rationality of drugs prescribed in OPD paediatrics patients in a tertiary care hospital in Dhaka city.

Methodology: A cross-sectional study was conducted at Department of Paediatrics, Dhaka National Medical College Hospital including pediatric age group prescriptions below 12 yrs for the duration of November 2018 to February 2019. Referral prescriptions and prescriptions of seriously ill patients were excluded from study.

Results: Various drug formulations were prescribed in the study. Most commonly found formulation was syrups and suspensions 304(60.8%) followed by solutions 69 (13.8 %).On an average, number of drugs prescribed per prescription was 3.12. Most commonly diagnosed disease was pneumonia in 105 (21%) of patients. 262 (52.4 %) prescriptions included one or more antimicrobial agents. Most commonly used antimicrobial agents were Amoxycillin in 62 (59%) patients followed by Ciprofloxacin in 27 (77.5%). The average cost per prescription was 216 tk.

Conclusion: The present study may provide feedback on concept of rationality in use of drugs to improve prescribing pattern.

Key words: Antibiotics, Outpatients, Pediatrics Department, Drug utilization, Prescription pattern.

Introduction:

The rational use of drugs requires the patient to receive medicines appropriate to their needs, in doses that meet their individual requirement, for adequate period of time and at lowest cost. Rational use of drugs forms the corner stone of successful implementation of rational use of medicines.[1] Irrational drug prescription leads to ineffective treatment, occurrence of adverse effects, prolonged duration of illness and an increased economic burden to society.[2]

Medically inappropriate, ineffective, non-economical uses of drugs are commonly observed in health care system throughout the world and especially in developing countries.[3] Inappropriate prescription increases the treatment cost, morbidity and mortality of the patient.[4] Third world population spends 30-40% of their total health budget on drugs many of which are prescribed irrationally.[1] Thus there is a real need to ensure that the prescriptions are always evidence based, cost effective & rational. Infant and children are the most vulnerable group that suffers from frequent but usually non-serious illness most of which are self limiting,[5] Sometimes they are treated inappropriately with polypharmacy.[6]

Potentially harmful medication error can be three times more common in paediatric population than in adults.[7] The invention of antimicrobials is a turning point in the reduction of the burden of communicable disease in the 20th century. Antimicrobials are among the most widely prescribed therapeutic agents across the world.[8] Prescribing pattern studies are powerful exploratory tools to ascertain the role of drugs in society. In a tertiary care centre, prescribing is expected to be judicious, appropriate, safe, effective and economical.[9]

In the recent years, there has been a rise in the broad spectrum antibiotic use. Inappropriate use of antibiotics has largely caused the development of antibiotic resistance.[10] Antibiotics use in children are different from adults due to different pharmacokinetics, pharmacodynamics, efficacy, safety and different physiological spectrum. Paediatric populations being vulnerable to the majority of the illnesses and the adverse effect of irrational use. This is a common problem across regions and there is a regional variation of the extent of this problem.[8]

Materials and Methodology:

A cross-sectional study was conducted at Department of Paediatrics, Dhaka National Medical College Hospital including paediatric age group prescriptions below 12 yrs for the duration of November 2018 to February 2019. Referral prescriptions, prescriptions of seriously ill patients and patient's attendance who did not give consent to review their prescriptions were excluded from study. Name of the patients and prescribing physicians were kept confidential throughout the study. Pre-designed, pretested semi-structured proforma was used for data collection. Necessary data were obtained from a total of 500 prescriptions and analyzed for (1) Number of medicines per prescription. (2) Drug route and indication. (3) Common paediatric problems. (4) Commonly used antibiotics for specific disease (5) Percentage of prescriptions with antibiotic drugs (6) Average cost of drugs per prescription. Data entered and analyzed with the help of statistical software SPSS Version 23. Mean and percentage were used for statistical analysis.

Results:

Majority 201 (40.2%) patients belonged to age 1-6 years, and were male 324(64.8%) (Table 1). Various drug formulations were prescribed in the study, Most commonly found formulations were syrups and suspensions 304(60.8%) followed by solutions 69 (13.8 %) (Table 5).

Average number of drugs was 3.12 per prescription. Prescriptions included one or more antimicrobial agents were 262 (52.4 %). Most commonly diagnosed disease was pneumonia 105 (21%). Common cold 92 (18.4 %), upper respiratory tract infection 48 (9.6 %) and gastroenteritis 40 (8.0 %) were other commonly diagnosed diseases.

In fever commonly prescribed drug was paracetamol (100%). In respiratory tract infection like pneumonia and common cold most commonly prescribed drugs were Amoxycillin 62 (59%) and Desloratidine 39 (42.39%) respectively. In upper respiratory tract infection Cefradine 31 (64.58%) was most commonly used. In acute gastro enteritis ORS and Zinc were prescribed for 100% of patients. Metronidazole 31(77.5%) and Ciprofloxacin 27 (67.5%) were subsequently prescribed most common drugs. In Bronchial asthma Salbutamol were prescribed in 16 (100%) patients. The cost per prescription was 216 tk. in average.

Table-I: Demographic characteristics of the study patients

Demographic characteristics	Number of patients	Percentage
Age (years)		
<1	162	32.4%
1-6	201	40.2%
>6	137	27.4%
Sex		
Male	324	64.8%
Female	176	35.2%

Table-II: Disease Pattern in Paediatrics OPD

Disease	Number of patients	Percentage
Fever	159	31.8 %
Pneumonia	105	21 %
Common cold	92	18.4 %
URI	48	9.6 %
Acute GI	40	8.0 %
UTI	24	4.8 %
Bronchial asthma	16	3.2 %
Worm infestation	16	3.2 %

Table-III: Prescription pattern of drugs in Paediatrics OPD patients

Disease	Prescribed drugs	Number of patients
Fever	Peracetamol	159 (31.8%)
Pneumonia	Amoxycillin	62 (59.0%)
	Cefradine	24 (22.8%)
	Cefixime	19 (18.09%)
Common cold	Desloratidine	39 (42.39%)
	Cetrizine	31 (33.69%)
	Dimenhydrinate Chlorp	12 (13.04 %)
	heniramine maleate	10 (10.86 %)
Upper Respiratory Infection	Cefradine	31 (64.58%)
	Cefixime	11 (22.9%)
	Cefuroxime	6 (12.5%)

Disease	Prescribed drugs	Number of patients
Acute Gastroenteritis	ORS	40 (100%)
	Zinc	40 (100%)
	Metronidazole	31 (77.5%)
	Ciprofloxcin	27 (67.5%)
	Nitazoxanide	12(30%)
	Azithromycin	9 (22.5%)
	Erythromycin	6 (15%)
Urinary Tract Infection	Ciprofloxacine	16 (66.66%)
	Cefuroxime	8 (33.33 %)
Bronchial asthma	Salbutamol	16 (100%)
	Montelukast	12 (75%)
	Theophylline	5 (31.5%)
Worm infestation	Pyrental pamoate	10 (62.5%)
	Albendazole	3 (18.75 %)
	Mebendazole	3 (18.75%)

Table-4: Others drugs used in paediatrics OPD

Drugs	Number of patients (%)
Anti-emetics	32 (6.4%)
H2 blocker	28 (5.6%)
Probiotics	24 (4.8%)
Vitamin D + Calcium	12 (2.4%)
Steroids	8 (1.6%)

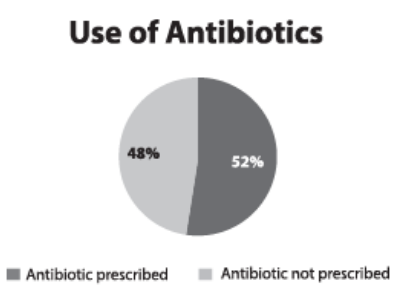

Figure-1: Percentage of antibiotic users

Table-5: Dosage forms of the study patients

Dosage forms	Number of patients	Percentage
Syrups and suspensions	304	60.8 %
Solutions	69	13.8 %
Inhalers	46	9.2 %
Tablets	34	6.8 %
Nasal drops	25	5.0 %
Topical	22	4.4 %

Discussion:

Paediatrics is the branch of medicine dealing with the development, diseases and disorders of children. Infancy and childhood is a period of rapid growth and development. Drug therapy is considered to be major component of paediatric management in health care setting like hospital.[11]

Antibiotics are the key drugs for treatment of infections and are among the most commonly prescribed drugs in paediatrics department.[12]

Their indiscriminate use increases the risk of bacterial drug resistance and thus have prompted the need to use antibiotics judiciously in paediatric practice.[13]

Therefore, a proper selection of antibiotics along with appropriate dose, formulation, pharmacokinetics profiles, response, and adverse drug reactions (ADRs) must be considered very seriously otherwise they may lead to fatal effects and promote the spread of antibiotics resistance.[14,15]

Nowadays many paediatric physicians are including antibiotics in their prescriptions as an empirical therapy without considering whether it is rational or not. The irrational use of antibiotics is leading to destruction of microflora, emergence of multi drug resistant microorganisms, and clinical symptoms like toxic megacolon and pseudo membranous colitis. All these are responsible for serious infections in the outpatients. This irrational use has lead to the development of "super bugs". Use of more combination of antibiotics are fearing the experts about future availability of antibiotics .Therefore, an effective step should be taken for rational use of antibiotics especially in the paediatric population.[16]

In this present study it was observed that majority (40.2%) patients belonged to age 1-6 years and 324(64.8%) were male. In a previous study.[10] It was observed that the most of the patients were belonged to age 1-2 years (34.67%), 80 (53.33%) patients were males while 70 (46.67%) were females. Another previous study[17] shows 55.3% were male. In a study[18] male patients were 9744 (54.13%) and female patients were 8256 (45.86%). Another previous study[2] showed 571(56.7%) were male patients and 372 (36.9%) were children aged 1–5 years, neonates were 24 (4.8%). Male patients were 273 (54.6%) and female patients were 227 (45.4%) in another study.[9] The male preponderance and the age group closely matches with the findings of the present study.

In this current study it was observed that patients presented with fever were 31.8%. Most commonly

diagnosed disease was pneumonia (21%) followed by common cold (18.4 %) and upper respiratory tract infection (9.6 %). Acute gastroenteritis (8.0%) and urinary tract infection (4.8 %) were subsequently diagnosed disease. Patients with dermatological complaints and those who came for immunization were sent to the respective centers. In a study[9] it was reported that upper respiratory tract infection173 (34.6%) was the most common reason for attending the pediatrics outpatient department followed by Bronchitis 81 (16.2%), Acute gastroenteritis 28 (5.6%), Fever 22 (4.4%), Asthma 13 (2.6%), Pneumonia 1 (0.2%), others 75 (15%) and Combination of two or more diseases were 107 (21.4%) patients. In another study[10] it was observed that respiratory system disease (33.33%) was most commonly seen, followed by GIT (19.33%) & CNS (16.67%) disorders. Findings of another study,[1] 12.6% drugs prescribed were those acting on respiratory system and other study[18] reported that majority of the paediatric patients were suffering from respiratory tract infection followed by Diarrhoea, Viral pyrexia, Epilepsy and Folliculitis. Another study[2] showed the most common diagnosis for which drugs were prescribed were respiratory tract infections (20.7%) and fever (16.4%). Considerable number of prescriptions were for immunization alone (249, 24.7%), of which injectable polio vaccine was the most commonly prescribed (143, 57.4%). In this study for fever paracetamol was prescribed in 100% patients. For pneumonia Amoxycillin (62.59%), Cefradine (22.8%) and Cefixime (18.09%) were prescribed commonly. Desloratidine, (42.39%) Cetrizine, (33.69%), Dimenhydrinate (13.04%) Chlorpheniramine maleate (10.86%) were frequently prescribed drug for common cold. Ciprofloxacin (66.66%) and Pyrental Pamoate (62.5%) was most commonly used drug for UTI and worm infestation respectively. Other drugs prescribed in this study were antiemetics (6.4%), H2 blockers (5.6%), Probiotics (4.8%), Vitamin D and calcium (2.4%) and Steroids (1.6%).

In a study[8] it was observed that the most common antibiotic prescribed for acute respiratory infection was Cefpodoxime followed by Azithromycin for acute diarrhoeal disease, for urinary tract infections, it was Cefixime. For a diagnosed case of viral fever, the commonest antibiotic used was Azithromycin. Findings of another study[19] was that the most common diagnosis in the patients was upper respiratory tract infection (URI) (50.07%) followed by acute gastroenteritis (20.94%) and viral fever (5.73%).

According to another study[20] respiratory system drugs (22%) and Paracetamol (13%) were the most prescribed class of drugs with predominance of salbutamol (8%). Anti-infectives for systemic use and gastrointestinal drugs were the most prescribed drugs in 0-6 years age group (26%) and ≥12 years (28%) age group, respectively. The drugs that were prescribed are similar to the current study.

Cefpodoxime (29.06%) and Paracetamol (86.70%) were used mostly in a study.[1] Another studies[18] reported a total of 37468 drugs were prescribed and most frequently prescribed drug class was Paracetamol. In a previous study[2] it was reported that antipyretics like Paracetamol were most commonly prescribed drugs (279/759, 36.8%), followed by antimicrobials (267/759, 35.2%). Another study[10] reported Penicillins (28.75%) were the most commonly prescribed antimicrobial agents, followed by Aminoglycosides (23.33%) & Cephalosporins (17.5%). Salbutamol aerosol (48.08%) was the most commonly used bronchodilator followed by inhaled Salbutamol+Ipratropium Bromide (21.15%). Out of 300 other group of drugs, IV fluids (30%) were most commonly prescribed, followed by vitamins (16.67%), ORS (13.34%), calcium (10%), zinc (9.33%), Prednisolone (3.33%) and Mannitol (2.67%) etc.

In this current study majority of common childhood illnesses are caused by viruses, which do not require antibiotics. Here 262 (52.4 %) out of 500 prescriptions (Fig-1) included one or more antimicrobial agents. Most commonly prescribed antibiotics include Amoxycillin, Cefradine, Ciprofloxacin , Cefixime and Cefuroxime . A study[21] reported that the proportion of antibiotic prescription was 79.4%. As against the WHO[22] recommendation of 20% antibiotic use for these common childhood illnesses. Which indicates that limited and proper use of antibiotics should be ensured for betterment of our future generations.

In a study it was seen that acute respiratory infection, acute watery diarrhoea and viral fever account for almost 60% outpatient visits, but only about less than 20% of these patients require antibiotic therapy.[22] In the recent years, there has been a rise in the broad spectrum antibiotic use.[23] Inappropriate antibiotic use for common childhood illnesses like respiratory tract infections, acute watery diarrhoea and viral fever has contributed to the development of antibiotic resistance.[24]

In this study it was observed that 304(60.8%) was found syrups and suspensions followed by 69(13.8%) solutions, 46(9.2%) inhalers, 34(6.8%) tablets, 25(5.0%) nasal drops, 22(4.4%) topical. However there is no use of injectable forms of medicine in out patient department. A study indicated that there was excessive use of injectables in many developing countries[18, 25]. Another study[26] shows that percentage of encounters

with an injection prescribed in both public (5.66%) and private (5.74%) hospitals was within recommended limit of WHO and there was no significant difference (p>0.05) regarding injection use pattern in these two hospitals. In a study[2] shows that various drug formulations were prescribed, highest being syrups (351, 34.8%), followed by injections (280, 27.8%), nasal drops (195, 19.3%), tablets/capsules (134, 13.3%), oral rehydration salts (ORS) (22, 2.2%), creams/ointments (15, 1.5%), and inhalers (11, 1.2%).

In the present study, on an average 3.12 medicines were prescribed per patient as compared to 2.3 and 2.22 from another study[27,28] respectively.

Other previous studies [6,17,29] found this number to be 5.86, 5.05 and 3.72 medicines per prescription respectively in their studies.

Another two study[26] show average number of drugs per prescription were 3.07 in public hospital and in private hospital it was 3.00 .The average numbers of drugs per prescription was 3.42 and range being 1 to 8. Out of 238 prescriptions studied 124 (51.26%) had at least one multivitamin, iron or tonic prescribed.[1]

The rationale use of drugs demands use of minimum number of drugs to reduce cost and drug interaction[19] So it is observed that in this study the average number of drugs prescribed per prescription was in accordance with similar studies done in India and in other developing countries with avoidance of poly pharmacy and that the final figure was acceptable and within the limit as per the WHO guidelines.[30,31]

The average cost per prescription in our study was 216 tk. A study[32] shows that in a teaching hospital average cost of prescription and average antibiotic cost is Rs.96.96 and Rs.45.30 respectively. In a Non-teaching hospital average cost of prescription is Rs.69.80 and average antibiotic cost is Rs.39.60 in India.

Another study[16] the average total prescription cost and antibiotic cost was Rs. 106.66 and Rs. 70.32 (hospital-1), and Rs. 245.41 and Rs. 113.32 (hospital-2), respectively. The average cost thus is more or less similar in comparison with other studies done previously in neighboring countries.

This study provides important insights into the prescribing patterns and rationality of drugs whether it is rational and also helped to identify any irrationality in the prescribing patterns of pediatrics outpatient department of a tertiary care hospital.

Conclusion: The total number of drugs and the number of antibiotics prescribed were found to be rational with regard to prescribing pattern as well as economic criteria. The ultimate goal of this study is to achieve rational and cost effective medical care, particularly in an economically developing country like ours.

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Original Article

Role of Lorazepam Premedication on Peroperative Hemodynamic Stability in Hypertensive Patients Undergoing Upper Abdominal Surgery

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Abstract:

Background: Hemodynamic stability during surgical anaesthesia in various surgeries have become a great concern. During operative procedure, patient with or without preexisting hypertension are at risk of development of peroperative hemodynamic instability. Surgical stress response induced by anxiety, surgical stimulation, pain can adversely affect the peroperative hemodynamic parameters, particularly in hypertensive patients.

Objectives: To assess the role of lorazepam premedication on hemodynamic stability during peroperative period in patients with hypertension undergoing upper abdominal surgery.

Materials & Methods: This was a prospective, observational study, carried among 46 hypertensive patients controlled by single anti-hypertensive drug who were scheduled for different upper abdominal surgeries at Bangabandhu Sheikh Mujib Medical University, Dhaka from January 2017 to June 2017. Patients were divided into two groups of twenty three patients each where Group I-received placebo tablet and Group II received lorazepam (1 mg). Hemodynamic parameters heart rate, systolic and diastolic blood pressure, ECG and peripheral capillary oxygen saturation (SpO2) were recorded just after intubation and 10 minutes interval during operative procedure.

Results: Among 23 patients of Group I, mean age was 41.78 ± 7.6 years and duration of surgery was 85.09 ± 19.91 minutes, while in Gropu II mean age was 42.02 ± 6.7 years and duration of surgery was 84.35 ± 17.04 minutes. Baseline values of heart rate, systolic blood pressure and diastolic blood pressure of two groups were not statistically significant. All these parameters were changed in both groups immediately after intubation and 10, 20, 30, 40, 50 and 60 minutes of peroperative period. And these difference of changes of hemodynamic parameters of two groups were found statistically significant. Regarding ECG tracing and peripheral capillary oxygen saturation (SpO2), no significant changes was found in either group.

Conclusion: Lorazepam significantly attenuetes hemodynamic changes in controlled hypertensive patients undegoing upper abdominal surgery.

Keywords: Lorazepam, hemodynamic stability, surgical strees response, preanesthetic medication, upper abdominal surgery

Introduction:

Hypertension is a common comorbidity in surgical patients. During induction of anesthesia patients with or without preexisting hypertension are likely to develop hemodynamic instability.[1] Studies show that hypertensive patients with a good control are still at risk of rise in blood pressure in preoperative period as they are tend to be more hemodynamically unstable during general anesthesia than normotensive subjects,[2,3,4] and that can lead to myocardial ischemia, ventricular arrhythmia, left ventricular failure, and cerebral hemorrhage.[5] Surgical stress response is associated with hemodynamic instability. Afferent noxious stimuli from surgical site stimulate sympathetic nervous system resulting in adrenergic response, then sudden increase in circulating catecholamines lead to hemodynamic instability.[6,7] Long duration of surgical procedure in certain abdominal surgeries as well as excessive blood loss can adversely affect the intraoperative hemodynamic parameters.[8]

To attenuate hemodynamic instability, a wide variety of agents are being used both during premedication and induction. Researchers have tried benzodiazepines, beta blockers, alpha 2 agonists, magnesium sulphate, opioids, and vasodilators during premedication to negotiate the hemodynamic variations.[9,10,11,12,13,14] Among the above premedication drugs, benzodiazepines has been proven to be satisfactory in alleviating the undesirable effects during the perioperative period.[15] Lorazepam, an intermediate acting benzodiazepine, rapid onset of action and relatively long half-life (10-20 hours), well absorbed orally, available in oral or parenteral routes, depress all levels of the CNS, including limbic and reticular formation.[16] Cost of lorazepam is quite feasible.[17] Some researchers considered lorazepam as a better option than diazepam or other benzodiazepines as premedication due to better efficacy as sedative-anxiolytic and unique property of antereograde amnesia with no adverse hemodynamic effects.[18,19] So current study was done to investigate the role lorazepam oral premedication for maintenance of hemodynamic stability in hypertensive patients undergoing upper abdominal surgery under general anesthesia.

Materials & Methods:

This was a Prospective Observational study, conducted in a tertiary level hospital of Dhaka city from January 20117 to June 2017.

Procedure:

This study was carried out with hypertensive patients controlled by single anti-hypertensive drug who undergo upper abdominal surgery under general anesthesia in Bangabandhu Sheikh Mujib Medical University, Dhaka according to inclusion and exclusion criteria. During pre-anesthetic assessment, every patient uderwent thorogh physical examination with ASA classifications. Total anaesthetic procedure was explained and informed consent was taken from the participants of the study.

Age eligibility for study: 19-65 years old

Genders eligibility for study: Both male and female

Screening method: The preliminary screening panel for each patient was included the complete history, physical examination and the necessary laboratory tests.

Inclusion criteria:

1. Controlled hypertensive patients undergoing elective abdominal surgery
2. Hypertension is controlled by single drug (monotherapy)
3. Duration of surgery: 75 minutes to 90 minutes
4. ASA class II
5. Patients agree to participate in the study signing an informed written consent

Exclusion criteria:

1. Emergency abdominal surgery
2. Uncontrolled systemic hypertension
3. Controlled hypertension by combined therapy
4. Hypotension (SBP< 90 mm of Hg)
5. Patient getting any benzodiazepine group of drug
6. H/O cardiac disease e.g. ischemic, valvular heart disease or 2nd or 3rd degree heart block (evaluated by history, physical examination and ECG), DM, CKD, CLD, COPD, bronchial asthma (evaluated by history, physical examination and laboratory investigation)
7. Pregnant women
8. Difficult intubation
9. ASA class III and IV
10. H/O benzodiazepine allergy

Forty six (46) patients, scheduled for upper abdominal surgery were included in this study. They were divided into two groups (Group I-received placebo tablet and Group II received lorazepam 1 mg) of twenty three patients each.

For induction, patients from the both groups received fentanyl (1.5 mcg/ kg), propofol (1.5 mg/ kg) intravenously. Suxamethonium (2 mg/ kg) was given for muscle relaxation and intubation in both groups. Immediately after intubation, the patients were mechanically ventilated using circle system with an oxygen and nitrous oxide (33:66) to keep EtCO2 within 30-35 mm Hg. For muscle relaxation, vecuronium bolus 0.1 mg/ kg was given followed by intermittent dose of 0.03 mg/ kg 20 minutes intervals. Halothane 0.5 MAC, along with nitrous oxide and oxygen 66/ 33, were administered for maintenance of anesthesia. At the end of the surgery, neuromuscular blocking effects of vecuronium was reversed by administering neostigmine (0.04 mg/ kg) and atropine (0.02 mg/ kg), extubation was done and patient was transferred to post-operative care unit.

Heart rate, systolic blood pressure, diastolic blood pressure, ECG and peripheral capillary oxygen saturation (SpO2) were recorded just after intubation and 10 minutes interval during operative procedure. Any adverse effects like bradycardia, tachycardia, hypotension and hypertension (20% of preoperative level respectively on two consecutive recordings) was managed conventionally.

Statistical analysis:
Data was compiled, presented and appropriate statistical test was done in this study for drawing an appropriate conclusion. All results are expressed as mean±SD. Data were analyzed by students unpaired't' test and considered significant if $p<0.05$.

Observation and Results:
Comparison of mean age, gender and duration of surgery are presented in Table 1, and there were no significant difference between two groups.

Table-I: Demographic characteristics and duration of surgery in study group

Variable	Group I	Group II	P-value
Age (years)	41.78 ± 7.6	42.02 ± 6.7	0.91
Gender (M:F)	11:12	13:10	
Duration of surgery (min)	85.09 ± 19.94	84.35 ± 17.04	0.893

Baseline values of heart rate of two groups were not statistically significant. Heart rate was increased in Group I immediately after intubation and 10, 20, 30, 40, 50 and 60 minutes of peroperative period in comparison to Group II. And all these differences were statistically significant.

Table-II: Changes in heart rate (bpm)

Groups	Baseline	Heart rate at time after intubations						
		0 min	10 min	20 min	30 min	40 min	50 min	60 min
Group I	73±10	103±8	101±8	98±7	88±6	83±6	81±5	79±7
Group II	74±7	86±6	84±7	80±6	76±5	73±6	68±8	66±6
P value	0.697	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Values are expressed as mean ± SD. P value expressed as significant if p< 0.05 (CI-95%)

Baseline values of systolic and diastolic blood pressure of two groups were similar. Raise in blood pressure was observed in Group I immediately after intubation and 10, 20, 30, 40, 50 and 60 minutes of peroperative period when compared with Group II. And the differences were statistically significant (Table III & Table IV).

Table-III: Changes in systolic blood pressure (mmHg)

Groups	Baseline	Systolic blood pressure at time after intubations						
		0 min	10 min	20 min	30 min	40 min	50 min	60 min
Group I	117±6	134±8	125±7	122±7	122±5	120±3	120±3	126±7
Group II	116±6	118±6	113±7	113±8	114±9	112±7	113±7	110±5
P value	0.75	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Values are expressed as mean ± SD. P value expressed as significant if p< 0.05 (CI-95%)

Table-IV: Changes in diastolic blood pressure (mmHg)

Groups	Baseline	Diastolic blood pressure at time after intubations						
		0 min	10 min	20 min	30 min	40 min	50 min	60 min
Group I	79±7	109±6	104±5	103±7	98±5	95±4	95±7	91±6
Group II	81±8	87±7	85±3	84±8	83±6	83±7	82±7	82±8
P value	0.37	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Values are expressed as mean ± SD. P value expressed as significant if p< 0.05 (CI-95%)

There was no significant change in ST segment and no arrhythmia was found from ECG tracing in any patient of both group. And there was no change of peripheral capillary oxygen saturation (SpO2) in any patient of both group.

Discussion:
Hemodynamic instability of hypertensive patients during surgical anaesthesia is a complex issue to address. Several pharmacological techniques were introduced and evaluated to counteract this problem but result is still controversial. Current study was conducted to evaluate the effect of single dose lorazepam as preanesthetic medication to prevent or counteract hemodynamic instability in hypertensive patients undergoing upper abdominal surgery.

Variation in different hemodynamic parameters occurs during induction of anesthesia and intubation of patient.[20] Laryngoscopy and endotracheal intubation both are potent stressful stimuli that provoke hemodynamic response.[21] Surgical stress response has been linked with adverse perioperative cardiac outcomes. The magnitude of response is related to intensity of surgical stimulus, can be amplified by other factors, including psychological stress, hypothermia, circulatory depression. Surgical procedures elicit sympathetic nervous system response, which can increase myocardial oxygen demand by increasing heart rate and arterial blood pressure. Activation of sympathetic nervous system may also cause coronary artery vasoconstriction, which in turn predispose to myocardial ischemia. So, from the beginning of surgery, there is a casecade of stress hormones that leads to hemodynamic instability. In patients with pre-existing cardiac disease, a decreased stress response might be helpful to attenuate the incidence of peroperative ischemia, and reduced mortality and morbidity.[22,23]

Lorazepam is a benzodiazepine with anxiolytic have little or no sedative and hypnotic properties, no hangover effect, with early onset of effects and relatively long half-life; by increasing the action of gamma-aminobutyric acid (GABA). It is completely absorbed from GIT and peak plasma concentration is achieved within 2 hours. 85-93% of drug is bound to plama protein with a free unbound fraction of 8-12%. The plasma half life of lorazepam is about 15 hours. It is conjugated in liver to the pharmacologically inactive glucoronide, which is then excreted in urine. No dosage adjustment is needed in patient with mild to moderate hepatic and renal impairment.[24, 25]

The present study, evaluated the effect of single dose oral lorazepam premedication for attenuation of

hemodynamic stress response in upper abdominal surgery. As the mean difference of all baseline haemodynamic parameters were statistically insignificant ($p>0.05$) in unpaired t-test, the significant attenuation of hemodynamic pressor response was observed in Group II. And, there was no significant change in ST segment and no arrhythmia was found from ECG tracing in any patient of both groups. In this study, 1 mg orally administered lorazepam had sedated the patients preoperatively and attenuated the hemodynamic pressor response effectively in peroperative period. Several mechanisms may contribute to attenuate hemodynamic changes. Preoperative anxiety deleteriously affect hemodynamic stability.[26] That's why sedative drugs are used as preanesthetic medication to reduce the apprehension experienced. Lorazepam posses several properties like anxiolysis, sedation and appeared to be a better option than diazepam as anxiolytic sedative night before operation.[19] Benzodiazepines attenuate the cortisol response, helps the patient to be less anxious and provides sedation and amnesia for surgery. The increase in hemodynamic values in the Group I may be due to inadequate sedation and surgical stress response.[27,28] Our findings correspond with result of several previous studies where role of lorazepam in maintainance of hemodynamic stability was investigated.[29,30,31]

Conclusions:

Patients with preexisting hypertension are at risk of development of peroperative hemodynamic instability when undergo general anesthesia which has a deleterious effect on patients health during postoperative period. Current research found effectiveness of lorazepam premedication to attenuate hemodynamic stability in hypertensive patients controlled by monotherapy when they were scheduled for elective upper abdominal surgery. Large scale studies are needed to compare the efficacy and safety of lorazepam with other benzodiazepines in terms of peroperative hemodynamic stability.

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Original Article

Comparison of safety of clindamycin (1%) - benzoyl peroxide (5%) combination gel with adapalene (0.1%) - benzoyl peroxide (2.5%) combination gel in treatment of mild to moderate facial acne vulgaris: A randomized prospective study

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Abstract:

Background: Pathogenesis of acne vulgaris is complex and and multifactorial. Topical combination therapy can target multiple pathogenic mechanisms and therefore is currently recommended as the standard treatment of mild-to-moderate acne vulgaris. Various clinical studies have assessed the efficacy and safety of combination therapy for acne & demonstrated significantly greater and faster results with the combination therapy.

Objective: The aim of this study was to compare the safety of clindamycin (1%) - benzoyl peroxide (5%) combination gel with adapalene (0.1%) - benzoyl peroxide (2.5%) combination gel in treatment of mild to moderate facial acne vulgaris.

Methods: A prospective, randomized and comparative study was conducted on diagnosed cases of facial acne vulgaris attending outpatient department of Dermatology & Venereology, Dhaka National Medical College & Hospital, Dhaka. A total of 60 patients of acne were selected as per inclusion & exclusion criteria and randomly divided into two groups, 30 patients in group A and 30 patients in group B. Clindamycin (1%)- benzoyl peroxide (5%) combination gel was given for 12 weeks in the group A, while adapalene (0.1%)-benzoyl peroxide (2.5%) combination gel was given to the group B patients for same duration. All the drugs were provided in the gel form. The safety of the drugs were evaluated at week 2, 4, 8 and 12 weeks follow up. Safety and tolerability were assessed through evaluations of facial tolerability and adverse events. At each visit, any adverse effects like dryness, desquamation, erythema, burning sensation and irritation noted. All parameters were compared between two groups. Quantitative data was expressed as mean±SD. Values of the different parameters was compared to see the difference between two groups by using Chi-square test (x^2). $p<0.05$ was considered as significant and $p>0.05$ was taken as non significant. 95% confidence limit was taken as the level of significance.

Results: In the present study, side effects were observed in 40% of study subjects in C/BPO group & 66.66% in A/BPO group. Side effects observed in C/BPO group were dry skin 10%, desquamation 6.7%, burning sensation 3.3%, erythema 0% & irritation 3.3%. In A/BPO group, side effects were dry skin 13.3%, desquamation 13.3%, burning sensation 10%, erythema 3.3% & irritation 3.3%. There was no statistically significant mean difference was found between two groups ($p>0.05$), indicating adverse events & cutaneous toleribility of C/BPO were similar to A/BPO combination gel.

Conclusion: Adapalene (0.1%) - Benzoyl peroxide (2.5%) combination gel & Clindamycin (1%) - Benzoyl peroxide (5%) combination gel both are well tolerated & having similar safety profile for the treatment of mild to moderate facial acne vulgaris.

Keywords: Acne vulgaris, Pilosebaceous units, Comedones, Papules, Pustules, Nodules, Safety profile.

Introduction:

Acne vulgaris is a chronic inflammatory disease of the pilosebaceous units, characterized by seborrhea, comedones, erythematous papules, pustules, nodules, pseudocysts and, in some cases, scarring.[1] It is due to an increased sebum production, hypercornification of the pilosebaceous unit, colonization with Propionibacterium acnes and inflammation. It is the

most common dermatological disorder affecting approximately 85% of individuals between the ages of 12 and 24.[2] The characteristic lesions in acne are called comedones which are actually the noninflammatory lesions whereas the inflammatory lesions are papules, pustules and nodules.[3]

Acne vulgaris is one of the most common skin disorders having multifaceted pathogenesis. Most dermatologists agree that the choice of agents used to treat acne involves the integration of multiple factors such as the severity of lesions present, duration of disease, past and present response to therapy, and tendency for scarring and post inflammatory pigmentation. Therapy is therefore tailored to the individual patient depending on the nature and severity of their acne. A wide range of systemic and topical treatments are available, covering all disease variants . No single topical acne therapy is effective in treating all 4 of these pathogenic factors.[4]

Fixed-combination products are reported to be effective, well tolerated, and more convenient for patients than multiple individual agents, and by reducing the number of medications and applications, fixed-combination products may improve patient adherence and treatment outcomes.[5]

A number of fixed-combination topical products are available for the treatment of acne, including clindamycin- BPO combinations and adapalene-BPO combinations. The fixed combination of adapalene and BPO (A/BPO) is a retinoid-antimicrobial combination that has proven to be more effective than monotherapy with either component or placebo.[6] Local irritation, including erythema, peeling, dryness, burning, and itching, is the most common adverse effect of topical retinoids, although the potential for irritation appears to be lower with adapalene than with other retinoids such as tretinoin.[7,8] BPO can also cause local irritation,[9] but combining adapalene and BPO has a comparable safety and tolerability profile relative to adapalene alone.[6]

Various clinical studies have assessed the safety of combination therapy for acne. These studies demonstrate significantly greater and faster results with the combination therapy with similar safety profile than with the single agent alone. The present study is the first one study to compare the safety of clindamycin-benzoyl peroxide combination gel with adapalene- benzoyl peroxide combination gel in treatment of mild to moderate facial acne vulgaris in Bangladesh.

Materials & Methods:

A prospective, randomized and comparative study was conducted on diagnosed cases of mild to moderate facial acne vulgaris attending outpatient department of Dermatology & Venereology, Dhaka National Medical College & Hospital, Dhaka from June 2017 to Nov 2017.

It was an observational and open-label clinical trial in which both male and female patients in the age group of 12 to 35 years enrolled as per inclusion & exclusion criteria. Complete history, general physical examination and dermatological examinations were done after enrollment. The ethical clearance was obtained from the research advisory committee and Institutional Ethics committee. The study was started after obtaining written informed consent from each patient.

A total of 60 patients of acne were selected as per inclusion & exclusion criteria and randomly divided into two groups, 30 patients in group A and 30 patients in group B. Clindamycin (1%)- benzoyl peroxide (5%) combination gel was given for 12 weeks in the group A, while adapalene (0.1%)-benzoyl peroxide (2.5%) combination gel was given to the group B patients for same duration. All the drugs were provided in the gel form. The safety of the drugs were evaluated at week 2, 4, 8 and 12 weeks follow up. Safety and tolerability were assessed through evaluations of facial tolerability and adverse events. At each visit, any adverse effects like dryness, desquamation, erythema, burning sensation and irritation were noted & were rated on a scale from 0 (none) to 3 (severe).

All parameters were compared between two groups. Quantitative data was expressed as mean±SD. Values of the different parameters was compared to see the difference between two groups by using student's t-test & Chi-square test (x^2). $p<0.05$ was considered as significant and $p>0.05$ was taken as non significant. 95% confidence limit was taken as the level of significance.

Before treatment (Group A) After treatment (Group A)

Fig-I: Evaluation of safty profile of C/BPO combination gel in treatment of mild to moderate facial acne vulgaris

Before treatment (Group B)

After treatment (Group B)

Fig-II: Evaluation of safty profile of A/BPO combination gel in treatment of mild to moderate facial acne vulgaris

Results:

Table:-I: Distribution of study subjects by age

Age Group	Group-A (C/BPO) (n=30)		Group-B (A/BPO) (n=30)	
	Frequency	Percent	Frequency	Percent
≤ 20 years	18	60	20	66.66
>20 years	12	40	10	33.34
Total	30	100	30	100
Mean ± SD	21.13± 6.95 (12-35)		20.26 ± 7.37 (12-34)	

Group A: Clindamycin (1%)- benzoyl peroxide (5%) combination gel (C/BPO)

Group B: Adapalene (0.1%)-benzoyl peroxide (2.5%) combination gel (A/BPO)

Table-I: shows the age distribution of the study subjects. The mean age was 21.13± 6.95 years, ranging from 12-35 years in C/BPO group and in A/BPO group, the mean age was 20.26 ± 7.37 years, ranging from 12-34 years. In age group ≤ 20years, 18 (60%) patients belonged to C/BPO group & 20 (66.66%) patients belonged to A/BPO group. In age group >20 years, 12 (40%) patients belonged to C/BPO group & 10 (33.34%) patients belonged to A/BPO group.

Table-II: Distribution of study subjects by sex

Sex	Groups		
	Group-A (C/BPO) (n=30)	Group-B (A/BPO) (n=30)	Total
Male	13 (43.3%)	14 (53.3%)	27 (45%)
Female	17 (56.7%)	16 (46.7%)	33 (55%)
Total	30 (100.0%)	30 (100.0%)	60 (100.0%)

Table-II: shows the sex distribution of the study subjects. Among the total of 60 subjects, 27 (45%) were male and 33 (55%) were female. In C/BPO group, 13 (43.3%) were male and 17 (56.7%) were female and in A/BPO group, 14 (53.3%) were male and 16 (46.7%) were female.

Table-III: Side effects observed in the study

Safety	Group-A (C/BPO) (n=30)		Group-B (A/BPO) (n=30)	
	Number	Percent	Number	Percent
≤ With side effects	12	40%	20	66.66%
Without side effects	18	60%	10	33.34%

Table-III: shows side effects observed in group A(C/BPO) & group B (A/BPO). Side effects were observed in 40% of study subjects in C/BPO group & 66.66% in A/BPO group.

Table-IV: Distribution of study subjects by side effects

Side effects	Groups		P value
	Group A (C/BPO)	Group B (A/BPO)	
Dry skin	3 (10.0)	4 (13.3)	0.688^{ns}
Desquamation	2 (6.7)	4 (13.3)	0.389^{ns}
Burning sensation	1 (3.3)	3 (10.0)	0.301^{ns}
Erythema	0 (0.0)	1(3.3)	0.313^{ns}
Irritation	1 (3.3)	1 (3.3)	0.999^{ns}

ns=Non significant (P>0.05) ,***=P<0.001, **=P<0.01, *=P<0.05. Data were expressed as Mean±SD. Chi-square test was done to measure the level of significance.

Table-IV: shows different side effects observed in group A(C/BPO) & group B (A/BPO). Side effects observed in C/BPO group were dry skin 10%, desquamation 6.7%, burning sensation 3.3%, erythema 0% & irritation 3.3%. In A/BPO group, side effects were dry skin 13.3%, desquamation 13.3%, burning sensation 10%, erythema 3.3% & irritation 3.3%. There was no statistically significant mean difference was found between two groups (p>0.05), indicating adverse events & cutaneous toleribility of C/BPO were similar to A/BPO combination gel.

Discussion:

The present study was conducted to compare the efficacy and safety of clindamycin-benzoyl peroxide combination gel with adapalene- benzoyl peroxide combination gel in treatment of mild to moderate facial acne vulgaris. The patients only with mild to moderate (grade 1 and 2) acne vulgaris were included in the present study who were randomly divided into two groups, 30 patients in group A and 30 patients in group B. Clindamycin (1%)- benzoyl peroxide (5%) combination gel was given for 12 weeks in the group A, while adapalene (0.1%)-benzoyl peroxide (2.5%) combination gel was given to the group B patients for same duration.The safety of the drugs were evaluated at week 2, 4, 8 and 12 weeks follow up. Safety and tolerability were assessed through evaluations of facial tolerability and adverse events. At each visit, any adverse effects like dryness, desquamation, erythema, burning sensation and irritation were noted.

In the present study, among the total of 60 subjects, 27 (45%) were male and 33 (55%) were female. In Group A (C/BPO), 13 (43.3%) were male and 17 (56.7%) were female and in Group B (A/BPO), 14 (53.3%) were male and 16 (46.7%) were female.

In this study, the mean age was 21.13± 6.95 years, ranging from 12-35 years in C/BPO group and in A/BPO group, the mean age was 20.26 ± 7.37 years, ranging from 12-34 years. In age group ≤ 20years, 18 (60%) patients belonged to C/BPO group & 20 (66.66%) patients belonged to A/BPO group. In age group >20 years, 12 (40%) patients belonged to C/BPO group & 10 (33.34%) patients belonged to A/BPO group. Similar results were obtained by the study of Cunliffe.[10]

Our study compared the adverse events & cutaneous tolerability or safety of clindamycin (1%) - benzoyl peroxide (5%) combination topical gel with adapalene (0.1%) - benzoyl peroxide (2.5%) combination gel in treatment of mild to moderate facial acne vulgaris.

In the present study, side effects were observed in 40% of study subjects in C/BPO group & 66.66% in A/BPO group. Side effects observed in C/BPO group were dry skin 10%, desquamation 6.7%, burning sensation 3.3%, erythema 0% & irritation 3.3%. In A/BPO group, side effects were dry skin 13.3%, desquamation 13.3%, burning sensation 10%, erythema 3.3% & irritation 3.3%. There was no statistically significant mean difference was found between two groups (p>0.05), indicating adverse events & cutaneous toleribility of C/BPO were similar to A/BPO combination gel. But this results disagree with the results of Lawrence Green et al.[11]They demonstrated that both products were well tolerated, but mean scores for erythema, dryness, and peeling were significantly higher with adapalene/benzoyl peroxide gel than with clindamycin/benzoyl peroxide gel at both Weeks 1 and 2 (p<0.03). Patients also rated clindamycin/benzoyl peroxide gel significantly more tolerable than adapalene/benzoyl peroxide gel for redness, dryness, burning, itching, and scaling at Weeks 1 and 2 (p≤ 0.0073). In our study, there was slightly higher adverse events with A/BPO group but it was statistically non significant. This results were consistent with the results of Zouboulis et al[12] they reported a greater incidence of local reactions with A/BPO but both A/BPO and C/BPO combination gel were well tolerated.

Conclusion

Adapalene (0.1%) - Benzoyl peroxide (2.5%) combination gel & Clindamycin (1%) - Benzoyl peroxide (5%) combination gel both are well tolerated & having similar safety profile. Both the topical combinations can be safely prescribed for the treatment of mild to moderate facial acne vulgaris.

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Original Article

Dengue Fever: Features and outcome among Pediatric patients

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Abstract

Background: The gradual increase of Dengue fever among children of our country is a growing challenge of child health. Dengue fever causes considerable morbidity and mortality and a leading cause of hospitalisation during its outbreak. Therefore we aimed at a study of features and outcome of Dengue fever among children admitted in our hospital.

Objectives: The objective of the study was to study the features and outcome of Dengue viral illness for better understanding and efficient management of the disease for improvement of child health service.

Materials and methods: Between 4th September to 26th December 2018, we conducted this study among children admitted in Pediatric ward of Dhaka National Medical College Hospital. Diagnosis was established by careful history taking, Physical examination and suitable laboratory investigations. Clinical features, laboratory findings and treatment outcome were studied and subsequent statistical significance was analyzed.

Results: Out of 108 study patients, 3 (2.78%) were <1 year of age, 44 (40.74%) were 1-5 year of age and 61 (56.68%) were above 5 years of age. Duration of fever was 1-2 days in 12 (11.11%), 3-5 days in 53 (49.07%) and >5 days in 39.81%, 33 children had fever <100° F (30.56%), 49 children's had fever 100-102° F (45.37%) and 26 (24.07%) had fever >102° F. There was cutanuous bleeding in 13 (9.26%), mucosal bleeding 6 (5.56%) and internal haemorrhage in 7 (6.48%), Platelet count were>1,00,000 in 62 (57.04%), 50,000-1,00,000 in 27 patients (25%) and <50,000 in 19 (17.59%). Classical Dengue fever, Dengue haemorrhagic fever and Dengue shock syndrome were 77%, 21% and 2% respectively.

Conclusion: This study observes the clinical features, laboratory abnormalities and treatment outcome of those children who were admitted in pediatric ward of our hospital. Larger multicentral and long term study and evaluation of Dengue viral illness among our population will effect great impact in management of this disease.

Key words: Dengue fever, Dengue Haemorrhagic fever (DHF), Dengue Shock Syndrome (DSS).

Introduction:

Dengue is one of the most important mosquito borne viral infection of human being. All the continents are endemic for Dengue except Europe.

The first epidemic of Dengue was reported from French West Indies in 17th Century.[1] But the South East Asian pandemic after world war-II, is responsible for worldwide spread.[2] In recent past 1st outbreak occurred in Bangladesh in year 2000.[3]

The gradual increase in incidence has been tribute to multiple factors including global demographic changes with uncontrolled urbanization, overcrowded houses, improper sanitation, lack of prevention program for epidemic transmission and poor mosquito control effort.[4]

Dengue fever is caused by dengue virus transmitted by the bite of an infective female Aedes mosquito. A aegypti is the primary vector responsible for the transmission, other included A albopictus A polynesiensis and A nivens.

A aegypti is primarily a day time feeder. It breeds mainly in artificial water collections. The rainy season creates

ideal larval habitat and ecologically suitable niches for mosquito breeding and epidemicity.[5]

The diagnosis is based on history, physical examination and laboratory markers. There are four major clinical patterns:

1. Undifferentiated fever
2. Classical Dengue fever
3. Dengue Haemorrhagic fever (DHF)
4. Dengue Shock Syndrome (DSS)

Exact incidence of Dengue in Pediatric patient is not available.

Materials & Methods:

This study was carried out in the Paediatrics Department of Dhaka National Medical College, Dhaka, Bangladesh, 4th September – 26th October, 2018. This is a cohort of 108 admitted patients in the department of Pediatrics. During this period a total of 216 children were admitted in Pediatric ward of DNMCH out of which 108 children suffering from Dengue fever.

Diagnosis was established by thorough and careful history evaluation of physical finding (symptom/sign) and some laboratory investigation like platelet count, NSI Antigen, dengue antibody etc.

Result:

Among these 216 admitted patients 154 patients suffered febrile illness. 108 patients suffered from other febrile illness. 62 patients suffered from other illness (AGN, NS, Diarrhoea, Urticaria Pneumonia).

Table-I:

Type	Number	Percent
Dengue Fever	108	50%
Enteric fever	34	15.74%
Viral Fever	08	3.70%
Febrile illness	04	1.85%
Other illness	62	28.70%
Total	**216**	**100%**

Among these 108 children 03 were <1year of age (2.78%), 44 were in between 1 and 5 years age (40.74%) and 61 were above 5 years (56.48%). Out of these cases 56 were female (51.85%) and the rest 52 were male (48.15%)

All the patient, presented with fever of different duration and grade.

Table-II: (Duration of fever)

Days	Number	Percent
1-2 days	12	11.11%
3-5 days	53	49.07%
> 5 days	43	39.81%

Table-III: (Grade of fever)

Type	Number	Percent
<100° F	33	30.56%
100 to 102°F	49	45.37%
>102° F	26	24.07%

Bleeding occur in 23 patients (21.30%)

Table-IV: (Bleeding Manifestation)

Type	Number	Percent
Petechiae, Purpura, Echymoses, Cutaneous	13	9.26%
Mucosal (Nasal, gum)	06	5.56%
Internal (Haematuria, Haematamesis, Malena Haemoptysis)	07	6.48%

Platelet count shows among these 108 children more than 100000 in 62 patients (57.40%), in between 50000 to 100000 27 patients (25%) and below 50000 in 19 patients (17.59%) with the lowest count is one patient-23000.

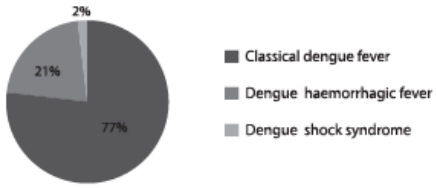
NS1 antigen was positive in 64 cases and negative in 8 cases and dengue antibody test as follows:

Table-V: (Immunological Test)

Type	Positive	Negative
NS_1 Antigen Test	64 (59.25%)	08 (7.40%)
Dengue Antibody Test	08 (7.40%)	64 (59.25%)

Based on clinical and laboratory findings the cases were categorized Classical Dengue Fever-83, Dengue Haemorrhagic Fever (DHF)-23, Dengue Shock Syndrome (DSS)-02.

Fig.-I: Percentage of types of Dengue Fever



Discussion:

Infection with dengue viruses in children may have varied presentation, ranging from asymptomatic to severe shock and death. In Bangladesh there was an outbreak of dengue fever is the later part of 1990's decade including the year 2000 particularly in Dhaka and Chattogram areas. After that it is persisting as endemic and almost every year we are facing good number of dengue fever cases in paediatric department of our hospital.

This is a retrosperative study of a paediatric patients admitted in the year 2018, (September to October) diagnosed and treated as various forms of dengue fever.

Total numbers of cases were 108. Among them majority (56.48%) were more than 5 years of age. Male female ratio is almost equal i.e 1:1.08.

All the patient presented with fever and most of them (49.07%) in between 3rd and 5th day of illness. 45.37% admitted with temperature between 100˚-102˚F. and 24.07% had above 102˚F.

Bleeding manifestation occurred in 23 children (21.30%). This is in accordance with a study in Taiwan[6] where it is shown that, 120 patients had haemorrhagic features out of 450 patients i.e. 26.67%. In our series all these 23 patients had fever for more than 5 days. A study at AIIMS, New Delhi, India reveals that their haemorrhagic cases had 03 to 09 days fever[7] which is close to our observation.

Eight patient (34.78%) had temperature below 100˚F, 14 Patients had between 100˚-102˚F (60.87%) and only one child had high fever i.e.> 102˚F.

This finding is not conforming with the finding's of malavige GN, Fernando S, Fernando DJ etal[8] who opined that DHF begins with sudden onset of high fever.DSS occurs in 02 cases only (1.63%). One in 5th and the other on 6th day of fever. DSS does not occur because of haemorrhage but due to capillary leakage and loss of intravascular volume[9], these were menifested by abdominal cramps, persistent hypothermia, altered mental status (drowsy/irritability) etc.

The remaining 83 children were clinically categorized as Classical Dengue Fever. In this study we did not encounter any patient as undifferentiated fever. This might be because of the fact that all these cases were admitted patient and mild category patients are usually treated as OPD patient.

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Original Article

Frequency of glucose intolerance in patients with tuberculosis- A Comparative Study

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Abstract

Background: Diabetes mellitus (DM) is one of the important morbidity known to affect the outcome of tuberculosis (TB). The rising prevalence of DM in TB patients in endemic areas may adversely affect TB control. Speeding up the diagnostic, curative and preventive services are required to address DM.

Methods: This cross-sectional observational study was conducted to determine the frequency of glucose intolerance among patients with TB attending the Medicine Department of BIRDEM General Hospital, Dhaka. Total 59 patients were selected according to eligibility criteria. Demographic data were collected from individual patient by investigator with an aid of a semi-structured questionnaire. Results of OGTT were also included during data collection of the patients. Edited and encoded data were analyzed with a computer software Statistical package software system (SPSS) version 22.

Results: Total 59 cases were taken for this study. Out of which 35 (59.32%) cases were diagnosed as having pulmonary TB and rests 24 (40.78%) cases were diagnosed as having extra pulmonary tuberculosis. Mean age was found 35.8 ± 19.7 years with range from 18-65 years. Out of the 59 patients with TB, 10 (16.95 %) had glucose intolerance of which 2 (3.39%) had impaired fasting glucose (IFG), 05 (8.47 %) had impaired glucose tolerance (IGT) and 3 (5.08%) were frankly diabetes. It was observed that majority 35 (59.32%) patients belonged to 36-55 years. But the frequency of abnormal OGTT was more 3, (23.07%) out of 13 in 55-65 years age group. The number of cases of pulmonary TB decreased with increasing age and the relative number of those with glucose intolerance increased. The frequency of glucose intolerance was more in male 8, (23.52%) out of 34. But there were no significant difference in different ages and sex. Majority of patients belonged to the rural population (39, 66.10% out of 59) while most of them were of lower socioeconomic class (24 of 59). The frequency of glucose intolerance was interestingly more among the rural 08 (20.51%) and those was in the low socioeconomic class. 7, (29.17%) and 8 (41.9%) cases were employed, self-employed patients but the results were not statistically significant. Out of 59 patients, glucose intolerance was more common in pulmonary TB (7/35, 20%) cases than extra pulmonary TB (3/24, 12.5%). Glucose intolerance was more common in smear positive pulmonary TB 3/10 (30%) patients and low 4/25 (16%) in smear negative patients. On radiological findings, the most common was cavitary lesion and glucose intolerance was found in 2/4, 50% patients. Glucose intolerance was 2/10 (20%) and 1/10 (10%) who had pleural effusion and consolidation respectively. Among patients with peritoneal TB glucose intolerance was 1 (12.5%) out of 8 patients who have ascites but no glucose intolerance was found in ileo-caecal TB and on fluid study there were increased glucose intolerance in tubercular pleural effusion 2 (20%) out of 10 patients and in ascites 1 (12.5%) cases out of 8 but no glucose intolerance in CSF study and found non-significant difference.

Conclusion: Glucose intolerance was 10/59 (16.95%) in patients with tuberculosis and more common in pulmonary TB patients than Extra Pulmonary TB and more in smear positive pulmonary tuberculosis patients than smear negative patients.

Key words: Pulmonary tuberculosis, Extrapulmonary tuberculosis, Glucose intolerance

Introduction: Since ancient time, physicians have been aware of the association between DM and TB. In 19th century, tuberculosis was recognized as a leading cause of death in diabetic patients with post-mortem studies finding evidence of tuberculosis in over 50% of diabetic autopsies.[1] It has been already established that diabetic patients are 2 to 3 times more prone to develop tuberculosis than non diabetic individual.[2] In the

early part of this century, Root, however, considered that the association of diabetes and tuberculosis was a 'one sided association' and stated that "tuberculosis patients do not develop diabetes with any greater frequency than non-tuberculous".[3] But Nicholas in 1957, changed this view when he found evidence of glucose intolerance using an Oral Glucose Tolerance Test (OGTT) in 22% of 178 subjects with tuberculosis, at least 5% had diabetes.[4] Glucose tolerance was assessed, according to WHO criteria, in 505 consecutive African patients admitted with sputum-positive pulmonary tuberculosis to tuberculosis wards of Muhimbili Medical Centre, Dares Salam.[9] (1.8%) patients were known to have diabetes. Following OGTT diabetes was diagnosed in a further 25 (4.9%) patients giving an overall crude diabetes prevalence rate of 6.7%. Impaired glucose tolerance (IGT) was present in 82 (16.2%) subjects. A repeat OGTT was carried out in the 25 patients after the first test, 8(28%) of the 25 patients reverted to normal glucose tolerance after the second test, 6 (24%) to IGT, and 11 (48%) remained with blood glucose values in the diabetic range, giving a crude diabetes prevalence rate of 4%. Diabetes is therefore at least four times as common in the tuberculosis patients ($p < 0.001$, IGT twice as frequent ($p < 0.0001$) 5.In Bangladesh, a study conducted by BIRDEM hospital on tuberculosis patients admitted in NIDCH found that the frequency of diabetes among TB patients was 16% compared to 6% in non-tubercular chest disease patients.[6]

It is attractive to speculate on whether occult glucose intolerance predisposes to tuberculosis or whether some underlying tissue or endocrine abnormality predisposes to both latent diabetes and tuberculosis. A multitude of factors determine a given person's glucose intolerance. Several theories have been put forward to explain why tuberculosis patients develop glucose intolerance. Bloom suggested that occult glucose intolerance predisposes to diabetes.[7] Zack suggested that glucose intolerance was not merely a reaction to acute tubercular infection but rather a prediabetic state.[8] Hadden suggested malnutrition in tuberculosis is a possible cause.[9] Roychoudhary and Sen have suggested that tuberculosis of pancreas may give rise to glucose intolerance.[10] Higher incidence of chronic calcific pancreatitis occurs in patients of diabetes and pulmonary tuberculosis (PTB) leading to absolute or relative insulin deficiency.[11] Clinical and subclinical hypoadrenalism has been described in these patients.[12] Mugusi and Guptan have suggested the possibility of stress diabetes.[11] Acute severe stress, infection, inactivity and malnutrition stimulate the release of stress hormones–epinephrine, glucagon and cortisol; which raise the blood glucose level. Plasma levels of IL-1and TNF-∞ are raised in severe illness, which can stimulate anti insulin responses. Age, co-existing illness and alcoholism also influence the host response.[13]

Materials and Method:

The study was carried out in the department of Internal Medicine and DOTS center, BIRDEM over the period of 12 months, dated from July 2017 to June 2018. After departmental approval and obtaining informed written concepts from the patients between 18 to 60 years of age of either male or female and diagnosed as any type of tuberculosis at the time of diagnosis and 2 weeks before antitubercular treatment were enrolled in the study. Patients were excluded from the study if they had known case of diabetes mellitus, pregnant and lactating woman and having history of gestational diabetes, any autoimmune disease such as hypothyroidism/ hyperthyroidism, Addison's disease or associated with genetic syndrome such as Klinfelter, Turner syndrome etc., pancreatic disease such as (pancreatitis, pancreatectomy, neoplastic diseases, cystic fibrosis, haemochromatosis, fibro calculou pancreatopathy) received steroid or beta blocker, thiazide diuretics or phenytoin for long duration or unable to co-operate adequately.

The study group were consist of 59 patients of tuberculosis, who had either positive or negative sputum smear for Acid Fast Bacilli (AFB) and an OGTT was performed before starting of anti-tubercular drugs or taking anti-tubercular drugs for less than 2 weeks duration. The results were evaluated according to the criterion laid down by WHO for diabetes. A standard patient record form was designed for each subject that included name, age, sex, occupation, family history of diabetes mellitus, duration of illness, primary disease causing hospitalization and detailed treatment history. Height without shoes and weight was measured and BMI was calculated. All patients was undergo OGTT according to WHO guidelines.

Results:

Table-I: Socio-demographic information of patients by age and sex

Characteristics	Frequency	Percentage
Age group in years		
18-24	3	5%
25-35	5	8.72%
36-45	19	32.2%

Characteristics	Frequency	Percentage
46-55	19	32.2%
56-65	13	22.03%
Mean age 35.8 ± 19.7		
Sex		
Male	34	57.62%
Female	25	42.37%
Total	**59**	**100%**

Table-II: Socio-demographic distribution by residence, socio-economic status and occupation

Characteristics	Frequency	Percentage
Residence		
Rural	39	66.10
Urban	20	33.10
Socio-economic status		
Lower Class	24	40.6%
Middle Class	22	37.88%
Upper Class	13	22.03%
Occupation		
Unemployed	15	25.42%
Employed	14	23.73%
Self employed	30	50.85%

Table-III: Categorical distribution of tuberculosis (n=59)

TB Category	Frequency	Percentage
PTB	35	59.32
Extra PTB	24	40.78

Table-IV: Distribution of the PTB patients by sputum for AFB (n=35)

Sputum for AFB	Frequency	Percentage
Positive	10	28.57
Negative	25	71.43

Table-V: Distribution of the patients by fluid study (n=20)

Fluid study	Frequency	Percentage
Pleural effusion	10	16.95
Ascites	08	13.56
CSF	02	3.39

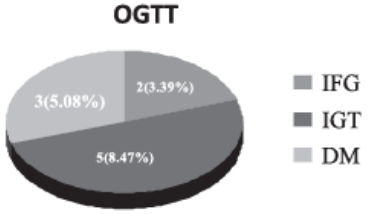

Figure I: Pattern of OGTT (n=59)

Table-VI: Age and Sex Specific glucose intolerance among TB patients (n=59)

Age group in years	No of subject (n=59)	Abnormal OGTT/ (IFG/IGT /DM) (n=10)	P-Value
18-25	3	0 (0%)	
26-35	5	1 (20%)	0.90
36-45	19	2 (10.52%)	
46-55	19	4 (21.05%)	
56-65	13	3 (23.07%)	
Total	**59**	**10 (16.95%)**	
Sex			
Male	34	8 (23.52%)	0.44
Female	25	2 (8%)	
Total	**59**	**10 (16.95%)**	

Test done by Chi-Square test

Table-VII: Glucose intolerance among TB patients in residence and socio-economic status and occupation. (n=59)

Residence	Number of Subjects	Abnormal OGTT	P-Value
Rural	39	08 (20.51%)	0.38
Urban	20	02 (10.00%)	
Socio-Economic Status			
Lower Class	24	07 (29.17%)	
Middle Class	22	02 (9.09%)	0.22
Upper Middle	13	01 (7.69%)	
Occupation			
Unemployed	15	02 (13.33%)	0.55
Employed	14	04 (28.57%)	
Self employed	30	04 (13.33%)	

Test done by Chi-Square test

Table-VIII: Glucose intolerance among TB patients in relation to sputum AFB, radiological findings and aspirated fluid study

Variable	Number of Subjects	Abnormal OGTT	P-Value
TB (n=59)			
PTB	35	07 (20%)	0.522
Extra PTB	24	03 (12.5%)	
Sputum for AFB (n=35)			
Positive	10	03 (30%)	0.61
Negative	25	04 (16%)	
Radiology			
Chest X Ray (n=24)			
Cavitary Lesions	04	02 (50%)	0.7
Pleural effusion	10	02 (20%)	
Consolidation	10	01 (10%)	
USG (n=10)			
Ascites	08	01 (12.5%)	0.621
Ileo-Caecal TB	04	00 (0%)	
Aspirated fluid study			
Pleural effusion	10	02 (20%)	0.88
CSF	02	00 (0%)	
Ascites fluid	08	01 (12.5%)	

*Chi-square test

Discussion:

Total 59 cases were taken for this study, 35 (59.32%) cases were diagnosed as having PTB and and 24 (40.78%) cases had extra PTB. In this study, Mean age of the 59 cases were 35.8 ± 19.7 years with range from 18-65 years. It was observed that 35 patients (59.32%) belonged to 35-55 years group. The frequency of glucose intolerance 3 (23.07%) were more in 55-65 years age group and the present study revealed that with increasing age the number of tubercular patients declined and the frequency of glucose intolerance was increased . This result was similar to those found in the studies Jain et al., 2006.[15] Here the mean age of glucose intolerance was in the range of 30-65 years. Higher prevalence of glucose intolerance in the elderly was also observed by Kishore et al., 1973,[16] who found that prevalence of IGT was higher among patients aged 40 years or more. Yamagishi et al., 2000[17] and Roychoudhary and Sen in 1980[10] also had similar observations. The earlier exposure to PTB in our country and the development of resistance to disease in later life accounted for involvement of younger population from TB. The frequency of glucose intolerance was more in males 08 (23.52%) out of 34 patients than in females 2 (8%) out of 25 patients. The finding is supported by another study. MK Jain et al., 2006[15] found that the prevalence of glucose intolerance was significantly more in male (14/75-18.65%) than in female (4/31-12.90). Yamagishi et al., 2000[17] found the glucose intolerance was twice in male than female. Fernandez et al., 1997[13] was found glucose intolerance in 6.2% males and 3% in females. Majority of patients belonged to the rural population (39 out of 59) . The frequency of glucose intolerance was interestingly more among the rural 08 (20.51%) which was also slight similar to Jain et al., 2006[15] where majority of people belongs to the rural population (69 out of 108) but glucose intolerance was more among the urban 12 (33, 44%). Socioeconomic status is particularly one such variable affecting the prevalence of tuberculosis. Two-third of patients in our study also belonged to lower & lower middle class families while most of them belong to lower socioeconomic class (24 of 59). Glucose intolerance was found more in low socioeconomic class 07 (29.17%) which was also similar to Jain et al., 2006 where majority of the patients studied were from the low socioeconomic class (76/106-71.70%) and glucose intolerance was more among them (14/76-18.42%) as compared to middle class (4/30-7.13%). The common factor of malnutrition and poor access to medical facilities may account for above observation. Glucose intolerance was more common in PTB 7 (20%) cases out of 35 cases than extra PTB 3 (12.5%) out of 24 patients. The study was similar to Magee et al., 2015 in which glucose intolerance was 116 (12.1%) out of 956 (72.1%) in patients with PTB and 27 (10.5%) out of 258 (19.5%) in extra PTB and in Kottarath et al., 2015 20 study in which diabetes were more in PTB 21 (29.57%) out of 71 cases in comparison with extra PTB, 8 (10.5%) cases out of 76.

Glucose intolerance is more common in smear positive patient, 3 cases (30%) out of 10 patients and low in smear negative patients 4 (16%) cases out of 25 patients. The study was also similar to Kottarath et al., 2015 20 in which number of sputum positive PTB was high in diabetes as 15 out of 29. The higher number of sputum positive in diabetes individuals indicate public health importance of screening and identified PTB sufficiently early so that the spread of the tuberculosis in the community can be contained.

On chest x-ray findings, the most common was cavitary lesion and glucose intolerance was found in 2/4 (50%) patients who had cavitary lesion. Glucose intolerance

was 2/10, 20% and 1/10, 10% who had pleural effusion and consolidation respectively. Similar type of result found in Venkateswara et al., 2013entitled a comparative study of Diabetes Mellitus in PTB patients. Here among 8 (36.4%) had cavitary lesion out of 22 diabetes patients. Cavitary lesions were seen as the predominant lesion in studies by Mugusi et al., 1990;[5] Morris et al., 1992;[18] Fernandez et al., 1997[13] and Parez et al., 2000. Two of 6 patients (33.33%) had exclusive lower zone involvement. On USG of abdomen, glucose intolerance was found on 1 (12.5%) case out of 8 patients who had ascites but no IGT was found in ileo-caecal TB. No further study are available to find out the frequency of glucose intolerance in pleural effusion, consolidation, ascites and ileo-caecal TB. On fluid study there was increased glucose intolerance in tubercular pleural effusion 2 (20%) out of 10 patients and in ascites 1 (12.5%) cases out of 8 but no glucose intolerance in CSF study and found non-significant difference. Out of the 59 patients of tuberculosis, glucose intolerance was positive in 10 (16.95%) patients out of them 2 (3.39%) had IFG, 05 (8.47%) had IGT and 3 (5.08%) were frankly diabetes shown in figure 6. This result was also similar to those found in the studies of Kishore et al., 1973 (20.9%);[16] Singh et al., 1978 (22.0%);[19] Mugusi et al., 1990 (6.7%)5 and Yamagishi et al., 2000 (14.1%).[17]

Conclusion: The frequency of glucose intolerance in TB patients in our study is 16.95%. Out of the 59 tuberculosis patients, 2 had IFG, 05 had IGT and 3 were frankly diabetic. The frequency of glucose intolerance was more among elderly, male and rural population. The lower socioeconomic groups were significantly more affected and there was significantly increased glucose intolerance among the elderly patients, the most common lesion was cavity in those with glucose intolerance and lower zone was significantly more affected. The rising burden of DM may adversely affect TB control and effective utilization of the TB control program could be beneficial in early detection and treatment of DM.

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Original Article

Socio-demographic and clinical characteristics of the appendicitis patients

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Abstract

Objective: The aim of the present study was to investigate the Socio-demographic and clinical characteristics of the appendicitis patients at a tertiary level teaching hospital in Dhaka.

Methods: It was cross sectional study, conducted in the Dhaka National Medical College Hospital, Dhaka, during the study period of July 2015 to December 2015. The study was approved by the institutional ethical committee.

Results: Most of the appendicitis patients belonged to the between 21-30 years which was 64 (32%). Male appendicitis patients (52%) are more than the female patients (48%). Most of the patients were non-smoker (79%). The common symptoms of the patients other than pain were nausea and vomiting (62%). Majority of the patients (56%) duration of symptoms was > 48 hours. Majority of the patients (69%) complains pain occurs in the Right iliac fossa. The nature of the pain was dull aching 54% and 46% were colicky.

Conclusion: In our study most of the appendicitis patients belonged to the younger age group. Male patients are more than the female patients. Most of the patients hospitalized with the typical feature of appendicitis like pain in the right iliac fossa with nausea and vomiting

Keywords: Acute appendicitis, Demographic study.

Introduction:

Acute appendicitis is the most common cause of 'Acute Abdomen' in young adults. The preoperative accurate diagnosis of acute appendicitis remains an enigmatic challenge for surgeons. As about 22-23% patient do not present with typical sign and symptoms.[1] These atypical presentations of appendicitis can cause complication which is about 17-39%.[2] To prevent these complications early clinical diagnosis is essential. Though advancement in modern radiographic imaging and laboratory investigation the diagnosis of acute appendicitis remain essentially clinical.[3] Multiple scoring system have been developed for the diagnosis of acute appendicitis among which the Alvarado and the modified Alvarado score are the two most commonly used scoring system.[4] Appendicectomy is the treatment of choice and it is the most frequently performed urgent abdominal surgery and is often the first major procedure performed by a surgeon in training.[5]

Materials and methods:

It was cross sectional study, conducted in the Dhaka National Medical College Hospital, Dhaka, during the study period of July 2015 to December 2015. The study was approved by the institutional ethical committee. To evaluate the socio-demographic and clinical characteristics of the appendicitis patients, a data collection sheet was prepared. The data collection sheet contains details such as demographics, diagnosis, symptom and duration of symptoms of the appendicitis patients. Total 200 case records were studied during the study period. The data was obtained from the hospitalized patients. All filled questionnaires were entered into the computer for subsequent analysis using SPSS method version 20.1.

Results:

Table1 shows mean age of the patients were 35.83(±12.30) years, minimum age was 18 years and maximum age was 57 years. Maximum age group was between 21-30 years which was 64 (32%).

Table-I: Age group distribution of the study population (n=200)

Age	Number	Percentage
< 20 yrs	16	8%
21-30 yrs	64	32%
31-40 yrs	48	24%
41-50 yrs	30	15%
> 50 yrs	42	21%
Total	200	100%
Mean±SD	35.83(±12.30)	Range 18-57 years

According to figure 1, More than half (52%) were male patients and 48% were female patients. male and female ratio was 1.08:1.

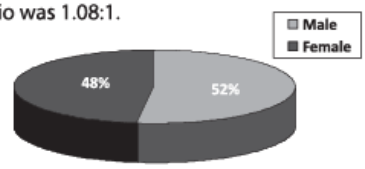

Figure-I: Sex distribution of the study population

According to the table 2, 42 patients (21%) were smoker and 158 patients (79%) non smoker.

Table-II: Smoking status of the study population (n=200)

Smokint Status	Number	Percentage
Smoker	42	21%
Non smoker	158	79%
Total	**200**	**100%**

According to table 3, presenting complains of the patients other than pain 124 (62%) were nausea & vomiting, 47(23.4%) were fever and 112(56%) were anorexia.

Table-III: Presenting Complains (other than pain) of the patients (n=200)

Presenting complains	Number	Percentage
Nausea & vomiting	124	62%
Fever	47	23.5%
Anorexia	112	56%

• Patients may complain more than one symptoms

According to table 4, duration of symptoms (56%) was > 48 hours and 44% were < 48 hours.

Table-IV: Duration of symptoms of the study population (n=200)

Duration of symptoms	Number	Percentage
<48 hours	88	44%
>48 hours	112	56%
Total	**200**	**100%**

According to table 5, site of pain 29(14.5%) were peri -umbilical region, 138(69%) were Right iliac fossa pain and 33(16.5%) were other place.

Table-V: Site of pain of the study population (n=200)

Site of pain	Number	Percentage
Peri umbilical region	29	14.5%
Right iliac fossa	138	69%
Other place	33	16.5%
Total	200	100%

According to table 6, nature of pain majority 108 (54%) were dull aching and 92(46%) were colicky.

Table-VI: Nature of pain of the study population (n=200)

Nature	Number	Percentage
Colicky	92	46%
Dull aching	108	54%
Total	**200**	**100%**

Discussion:

In this present study showed mean age was 35.83(±12.30) years, minimum age was 18 years and maximum age was 57 years. Maximum age group was between 21-30 years which was 64(32%). Majority 52% were male and 48% were female, male: female ratio was 1.08:1. In study of Chong et al.[6] showed the mean age of the patients (92 male, 100 female) was 25.1 ± 12.7 years. In Ismail Alnjadat I, Baha Abdallah study[7] male to female ratio was 1.5:1 and mean age was 26.52 years. In our study most of the patients (54%) nature of pain was dull aching but DJ Humes and J simpson in his article stated that most of the appendicitis patients nature of pain was colicky.[8] In our study most of the pain occurs in right illac fossa (69%). Our study results are similar to the Nshuti et al. [9] study but the percentage is not same. In their study they stated that most of the pain occurs in right iliac fossa (95%). In our study most of the patients (56%) duration of symptoms was > 48 hours. This result is not correlate with the result of Nshuti et al.[9] (2014) study. In their study they reported that the duration of symptoms was 4.5 days (SD = 4 days).

Conclusion:

Acute appendicitis is very common in surgery department of Dhaka National Medical College and Hospital. Early diagnosis is a primary goal to prevent morbidity, mortality and decreasing the negative appendicectomy rate.

Acknowledgements:

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Original Article

A comparative study between open & closed technique of pilonidal sinus excision

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Abstract

Background: It derived from Latin word meaning nest of hair. The term pilonidel sinus describes a condition found in the natal cleft overlying the coccyx, consisting one or more usually, midline opening. It is chronic inflammatory condition usually affects the young adult.

Objectives: To compare the outcomes between open and closed technique of surgical management of pilonidal sinus.

Methods: A total 50 patients of pilonidal sinus were admitted. Details history, physical examination, and investigations like sinogram were done. The patients were divided into two groups like group A (open) group B (closed technique). Each group include 25 patients.

Results: Wound infection was found in 4 (8%) patients in open technique managed with regular dressing and antibiotics. Complications were found in 10 cases in closed technique managed in closed dressing. Recurrence rate found in open technique 3 (6%) patients and closed technique 7 (14%) patients.

Conclusion: From our experience, It is surgical challenge. Both technique is effective but open technique is better option as recurrence rate is low.

Key words: Pilonidal sinus, open technique, close technique, wound infection, recurrence.

Introduction:

The term pilonidal sinus describes a condition found in the natal cleft overlying the coccyx, It is a chronic inflammatory condition that usually affects young adults results from invasion of fallen hair into the skin. It presents as inflammation, abscess and sinus formation.[1] The treatment regimen should ideally minimize pain, allow short hospital stay reduce complication and rate of recurrence and provide rapid recovery and return to normal daily activities.[2] There are several surgical procedure describes for the treatment of Pilonidal sinus. Most common open and lay out another excision and primary closure.[3]

Materials and Methods:

This prospective study was carried out over 50 patients in the surgery department of Dhaka National Medical College Hospital from admitted patients, from April 2015 to March 2018, The patients were randomly placed into two groups. Group A compromised of patients planed for under go open technique and group B for closed technique of surgery. The patient with acute sinuses or recurrent sinuses or who refused or lost in the follow up or having some other pathology were excluded. After admission all patient were listed for operation, patients were placed in prone position and spinal anesthesia were given. Presents of more than one sinus tract preoperatively assessed with blunt probe. For group A, excision of sinus tract and lay open then regular dressing done, for group B probe guided elliptical excision(taking margins of normal tissue) around the sinus, then primary closure, dressing done on the second postoperative period. All patients were called for review after 2 weeks, I month, 3 month, 6 month, 12 months, respectively.

Results:

Table-I: Distribution of study patients according to Age (n = 50)

Age	Group A n = 25		Group B n = 25	
	n	%	n	%
16-25	15	60	15	60
26-35	05	20	05	20
36-45	05	20	05	20

Table-II: Sex distribution

Sex	Group A n = 25	Group B n = 25
	n %	n %
Male	24	24
Female	01	01

Table-III: Surgical outcomes of group A (open technique) group B (close technique)

Outcome	Group A	Group B
Surgical time in minutes	60±20mm	80±10mm
Mean healing time in days	20.3 (range 20-30 days)	11.41 (range 10-14 days)
Hospital stay	5±2 days	3±2 days
Wound infection	4	10
Recurrence rate	3	7

A total 50 patients with pilonidal sinus were included in this study. 48 (96%) were male and 2(4%) were female patients. male female ratio was 24:1. Mean age for group A were 26.5 while rage (16-45yrs), while mean age for group B were 24 range (16-29 yrs.) comprised of 25 for group A and 25 for group B. All of 45 pts (90%) having their sinus opening is the midline. 5(10%) were to have lateral extension to the main tract.

Surgical time in minutes 60±20 min. in Group A. 80±10min. in Group B. Mean healing time in 20.3 (range 20-30 days) in group A. 11.41 (range 10-14 days) in group B. Wound infections in group A were 4 and wound infections for group B were 10. Recurrence rate in group-A were 3, recurrence rate in group B were 7.

Discussion:

It is not a life threatening condition There an some controversy either open or close technique which was performed.[4] The open method has its own advantage and disadvantage, same close method also.[5] The main advantage of open technique less recurrence rate less surgical time, low wound infection but the disadvantage is daily dressing, long healing time and more hospital stay as observed in our study.[6] Shahida at al did a comparable study on 40 patients. They found significant difference in hospital stay, wound healing and recurrence between two groups, similar to our findings.[7]

AneesK Nile et al did a comparative study on 60 patients and found hospital stay with open group is lesser as compaired to close group.[8] Similar finding of Mehmet et al study, however there is significant difference in term of complication like wound healing and recurrence in both groups which is similar to our study.

Conclusion:

Open technique is better than close technique in management of pilonidal sinus surgery as wound infection recurrence is low compaired to close technique. Only disadvantage is long healing time and regular dressing is needed.

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Case Report

Atypical Presentation of Parkinson's Disease-Corticobasal degeneration

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Abstract:

Corticobasal degeneration (CBD) is a sporadic, rare, slowly progressive disorder with a clinical asymmetrical onset characterized by apraxia, dystonia, postural instability and akinetic –rigid syndrome that does not respond to levodopa. CBD usually presents at mid to late adult life. We describe an example of this rare case after taking consent from patient. A 45 years old women initially presented with walking difficulties and involuntary movement and pain in the left side. Previously she was diagnosed as a case of Parkinson's disease but was unresponsive to drug. On examination, she presented with left upper limb fixed dystonia, spasticity in all four limbs. Brain MRI showed asymmetrical cortical atrophy in the left frontotemporal cortex. Neuropsychological examination showed an impairment in visuospatial functioning, frontal-executive dysfunction. This case demonstrates that association of asymmetrical focal cortical (apraxia, dementia, progressive nonfluent aphasia) and subcortical features (bradykinesia, tremor, asymmetrical limb dystonia, gait disorder) remains the clinical hallmark of this condition. There are no absolute markers for the clinical diagnosis that is complicated by the variability of presentation involving also cognitive symptoms that are reviewed in the paper.

Introduction:

Corticobasal degeneration is a rare variety of neurodegenerative disease described for the first time by Rebeiz et al.[1] This can be presented with an exceptional variety of motor, sensory, behavioral and cognitive symptoms.[2] It is usually presented with asymmetrical parkinsonism more affecting a limb, where arm is frequently involved.

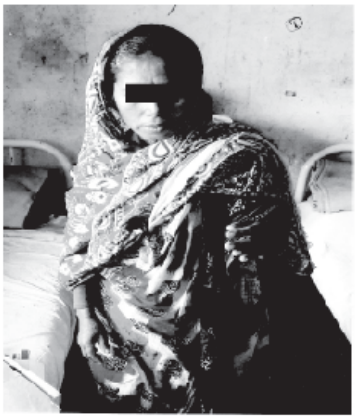

Figure-I: Alien limb deformity

The most common presentation of the parkinsonian syndrome is rigidity followed by bradykinesia, gait disorder associated with postural instability and falls, tremor, asymetrical limb dystonia. Other cardinal feature is higher cortical dysfunctions like apraxia where limb is more common than orofacial and ocular apraxia. There is some other presentation of corticobasal degeneration such as dementia, progressive nonfluent aphasia, speech apraxia, progressive supranuclear palsy (PSP) and posterior cortical atrophy syndrome.[3,4]

In Corticobasal degeneration, there is abnormal deposition of the microtubule associated protein tau which is also found in frontotemporal dementia and progressive supranuclear palsy.[5] The common pathological findings in CBD are focal asymmetric cortical atrophy, nigral degeneration, tau positive neuronal and glial lesions in both gray and white matters.[6] For accurate diagnosis, we can take help from neuropsychology, electrophysiological study and imaging methods. They also help us to differentiate this disease from the other parkinsonism syndrome.[3,4] In CBD, it is very difficult to understand the symptoms; as because patient can't share their experiences properly. A sound knowledge of this disease may help clinician to make diagnosis, providing comprehensive information about prognosis and difficulties they will encounter during the course of the disease, improving their quality of life and careers.

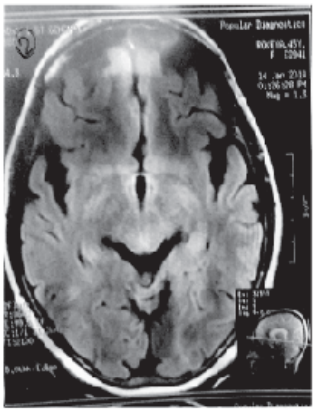

Figure 2: Axial T2 weighted MRI image of the brain, demonstrating asymmetrical frontal and temporal lobe atrophy in the right side.

Case Report:

A 45 years old, hypertensive, non-diabetic daughter of non-consanguineal parents presented to us with the history of difficulty in walking for two months, involuntary movement and pain in the left upper limb for 4 months, tingling sensation in all four limbs for same duration. Two months prior to the admission she felt difficulty in walking which was insidious in onset and gradually progressive. She gave history of short stepping gait with recurrent fall during walking during this time. She gave no history of stroke, weakness in lower limbs but gave history of sensory impairment, muscle wasting. She also developed involuntary movement and pain in the left upper limb. Involuntary movement was spontaneous, minimally affected by mental effort. She was unaware of the movement of the left upper limb. She also mentioned about tingling sensation in all four limbs. But she had no history of neck pain, trauma to the neck, weakness and wasting of limbs. She was hypertensive and controlled by Tab. Amlodipine and Olmesartan combination. On examination she was expressionless, pulse-70b/m,BP-was 150/90 mm Hg (supine) and 140/80mmHg(Standing), she was concious but confused ,disoriented about place and person, speech was soft and incoherent. Her mini-mental scoring was 20, her memory was impaired along with cognitive impairment. She had significant apraxia. Her cranial nerves including fundus were normal. Muscle power was grade 4 in the left upper limb but normal muscle power in the rest of the limbs.There was dystonic and catching type of involuntary movement found more in the left side as well as resting and action tremor. All deep tendon reflexes were brisk and Hoffman's sign was present in the left side,planter flexor in both side with presence of glabeller tap. On sensory system examination we found that all modalities of sensation including cortical sensation lost in the left upper limb. Cerebellar sign was absent. Gait was short stepping with no arm swinging during walking. But there was Alien limb like deformity as well rigidity. (Figure-1) Other system examiantion found normal.

Relevant investigation showed:TLC-10,000/cmm, N-73%,L-23%,Hb-11.6 gm/dl,ESR- 20 mm in 1st hr.RBS-5.8 mmol/L,S.urea-21 mg/dl,S.creatinine-1.0mg/dl,s.Sodium-131 mmol/L,Potassium-3.2 mmol/L,VDRL-Non reactive, Cervical spine Xray-Normal, Left shoulder joint Xray-Normal, Xray lumbosacral spine-spodylosis of L5 vertebra,USG whole abdomen –Normal, RA test –negative,CRP-normal,INR-1.02,Triple antigen –Normal, TSH-0.87uIU/ml,H.pylori –IgG-Positive, Liver function –Normal, MRI of Brain-Assymetrical frontal and temporal lobe atrophy with widening of sylvian fissure and interhemispheric fissure.(Figure-2)

We immediately started antihypertensive, levodopa, rivastigmine and antidepressant after admission but one-week later patient was less responsive to drugs. Then we started extensive search for etiology. Related to clinical features, based upon diagnostic criteria proposed by Boeve et al.4, she has been diagnosed as "corticobasal degeneration (CBD)".The diagnosis was based on the gradual onset of a parkinsonian disorder associated with cortical dysfunctions and other supportive features such as cognitive dysfunction, asymmetric atrophy on MRI imaging .She was treated by antiparkinson's drug with rivastigmine, antidepressant and advised for regular follow up.

Discussion:

CBD is a rare form of dementia that is caused by an over production of a protein in the brain called tau. This build up of tau protein causes area of the brain to become increasingly damaged and to shrink over time. The part of the brain that are mostly affected by CBD are the cortex and basal ganglia. As the cortex is responsible for higher level of cognitive functioning like thinking and understanding and the basal ganglia helps to perform smooth movement. CBD may affect both the physical and cognitive functioning of the people with the disease.

Clinically CBD begins in the sixth to eight decades.[7] with slight predilection for women.[8,9] Our patient was also female and present manifestation during 5th decade. Typically, the primary symptom develop in a profoundly asymmetric way, affecting either one arm or, less

frequently, a leg, which appear to be rigid, dystonic, akinetic, or apraxic. Clinical feature include a series of motor, cognitive and neuropsychiatric symptom, that can be explained by impairment of the cortical and subcortical structures. Motor symptom include progressive asymmetric rigid akinetic parkinsonism usually involving the upper limbs with resting tremor,[10] focal stimulus sensitive or action myoclonus,[4,11] speech abnormality, gait disorder, with postural instability and falls and asymmetric limb dystonia, generally of the upper limbs, sometimes evolving towards the development of a dystonic clenched fist.[3,12] Our patient was also presented to us with asymmetrical limb dystonia ,involuntary movement like resting and action tremor, gait disorder with postural instability and falls.

Involvement of higher cortical function as well as cognitive impairment results in often symmetric ideomotor apraxia, mostly affecting the limb. The alien-limb phenomenon, that is seen in 50% of the cases.[13] It commonly co-occurs with cortical sensory loss.[11,14] Our patient also having significant apraxia along with alien limb phenomenon with marked cognitive impairment. Cortical sensory loss was present in 14 of the 16 patients in an early series and was the sole initial symptom in these patients.[15] Affected patient often complain of numbness and tingling sensation. Our presenting case also complained tingling sensation in all four limbs. On examination we found that all modalities of sensation including cortical sensation was lost in all four limbs but more marked in the left upper limb.

Morphologic imaging of the brain may demonstrate asymmetrical cortical atrophy, usually frontal, temporal and parietal lobe, although normal in the early phase of the disease. Asymmetrical atrophy in the basal ganglia, corpus callosum, lateral ventricle and cerebral peduncle may be present.[16,17] Our patient also having asymmetrical frontal and temporal lobe atrophy which was shown in MRI of brain. Finally, The main features of disease are insidious in onset and progressive, no identifiable cause (tumor, infarct) of symptomatology, cortical dysfunction includes at least one of the following: (i) focal or asymmetric ideomotor apraxia, (ii) alien limb phenomena, (iii) cortical sensory loss, (iv) visual or sensory hemineglect, constructional apraxia, (v) focal or asymmetrical myoclonus, (vi) apraxia of speech/nonaffluent aphasia. Extrapyramidal dysfunction as reflected by one of the following: (i) focal or asymmetrical appendicular rigidity lacking prominent and sustained L-dopa response, (ii) f ocal or asymmetrical appendicular dystonia. Our patient presented to us with both cortical dysfunction as well as extrapyramidal dysfunction such as: memory and cognitive impairment, apraxia, cortical sensory loss, asymmetrical involuntary movement and dystonia, walking difficulties due to rigidity and postural instability.

Treatment includes levodopa, amantadine, baclofen and inj. Botox. in jerky movement levitiracetum, for memory impairment donepezil, memantine can be used. In one study showed ninety-two percent of the case patients received some kind of dopaminergic medication. Eighty-seven percent received levodopa with a peripheral decarboxylase inhibitor; 25%, either bromocriptine or pergolide mesylate; 20%, selegiline hydrochloride; and 16%, amantadine hydrochloride. Other medications used were benzodiazepines (32%), anticholinergics (27%), baclofen (19%), antidepressants (11%), anticonvulsants (9%), propranolol hydrochloride (8%), and neuroleptics (4%). Botulinum toxin injections were given to 6% of the case patients14.Our patient was treated by levodopa, rivastigmine, antidepressant and physiotherapy and patient was improved quickly.

Conclusion:

CBD can be presented with several clinical syndromes. It is more difficult to diagnose this heterogeneous disorder and misdiagnoses are frequent. Other neurodegenerative disorder sometimes overlaps the CBD, making the clinical diagnosis difficult. Currently, there is no known cure for CBD. Medications that are often used to manage symptoms of Parkinson's disease can be tried in CBD but are usually not as effective. So, It is important to explain the nature of the motor as well as the cognitive deficits to the patients as well as to all people involved in their care.

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