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TMSS Medical College Journal (TMCJ)
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General Instructions

- Article must be within 5 years of research work.
- Authors of research work should be of relevent fields.
- Type manuscripts double-spaced, on a good quality A4 sized paper, including references, figures with legends and tables on one side of the page only.
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- Cite each reference in text in numerical order and list in the reference section.
- Begin each component of the manuscript with a new page in the sequence of (i) Title page with author information, name of the department(s) and institutions to which the work should be attributed, name md address of the author with post code responsible for correspondence and requests for reprints (ii) Acknowledgements (iii) Abstract page (iv) Text (v) References (vi) Tables (vii) Figures with legends, for illustrations.
- Present the text in the sequence of Introduction, Methods & Materials, Results and Discussion.
- Use SI units of measurements (for blood pressure use mm of Hg).
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- Use standard abbreviations, the full forms of which should precede in its first use in the text
- As a general rule, articles should not exceed 10-12 pages. Too much large volume manuscripts will not be accepted for publication
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Title page with author information (first page, but do not number).

Text page must include:

- Full title of the article not exceeding 50 characters with three to five key words for use as indexing terms and as running title for use on top of the text pages
- Author's names, highest academic degree, affiliations, and complete address for correspondence including Fax number, telephone number, and E-mail address.

The acknowledgments pages (Second page, but do not number)

- List all sources of funding for the research, plus substantive contributions of individuals. (Note: If the article is published, this section will be printed at the end of the text).

Abstract page (First numbered page)

- Do not cite references in the abstract. Be concise (250 words, maximum).
- Limit use of acronyms and abbreviations. Abbreviations must be defined at the first mention.

▶ The abstract should cover Background and Purpose (description of rationale for study); Methods (brief description of methods); Results (presentation of significant results); and Conclusion (succinct statement of data interpretation) in a running manner and not under separate headings.

The Text

The following are typical main headings:

Introduction, Materials and Methods, Results, Discussion and Conclusion

▶ **Introduction:** Summarize the rationale for the study with pertinent references. The purpose(s) of the study should be clearly stated.

▶ **Materials and Methods:** Identify type of study and describe the study subjects and methods used. Provide methods of statistical analysis, Cite reference(s) for standard study and statistical methods. Describe new or modified methods. Identify apparatus (with name and address of manufacturer) used. Generic names of drugs must be given. Manuscripts that describe studies on humans must indicate that the study was approved by an Institutional Ethical Committee and that the subjects gave informed consent. Add statistical analysis.

▶ **Results:** Present only important results/observations in logical sequence in the text, tables or illustrations with relevant statistics.

▶ **Discussion:** Emphasize new and important results and the conclusions that follow including implications and limitations. Relate observations to other relevant studies.

▶ **References:** Accuracy of reference data is the author's responsibility. Verify all entries against original sources, especially journal titles, inclusive page numbers, publication dates. All authors must be listed if less than six. Use et al, if more. Personal communications, unpublished observations, and submitted manuscripts must be cited in the text as "([Name(s)], unpublished data, 20XX)." Abstracts may be cited only if they are the sole source and must be identified in the references as "Abstract". "In press" citations must have been accepted for publication and add the name of the journal or book including publisher. Use Vancouver style, for example.

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Tables

▶ Each table must be typed on a separate sheet and double-spaced. The table number should be Roman, followed by a brief informative title. Place explanatory matter in footnotes. For footnotes use symbol in this sequence. *, **, t, tt" etc.

Figures

▶ Line drawings, photomicrographs, colour prints and halftones should be camera ready, good quality glossy prints (highest quality reproduction with 300 dpi or higher). Submit only originals of laser prints, not photocopies. A set of original figures must be submitted. Indicate figure number, short figure title on top of figure lightly in pencil. Any abbreviations or symbols used in the figures must be defined in the figure or figure legend. Legends or captions for figures should be listed on a separate page, double spaced. Keep an extra set of original figures for your records.

Editorial

Challenges of Conducting Quality Research

Professor Dr. Moudud Hossain Alamgir

It is often a very commonly asked question that why we cannot conduct Quality Medical research in Bangladesh. A country having a population of more than 180 million and widespread Medical Institutes including primary, secondary and tertiary health institutions throughout the country along with huge number of patients entry both at outpatient and indoor settings. Diversity of the disease profile is also a very positive research variable which covers every aspect of Medical Science. Another interesting point to be mentioned that, there is very little restrictions on accessing the patient. Responders and the subjects are very cooperative. Despite having all this facilities the number of quality research works is lacking.

Several studies has been conducted to explore the challenges and difficulties the medical professionals are facing while conducting quality Medical Research. There are some very interesting findings in those Publications. The common observations are-difficulties in study design, lack of good understanding about research methodology, inadequate statistical knowledge. Another interesting finding was that most of the published papers are on qualitative questions. So obviously whose research work had questionable qualities and most of the studies was lacking in validity and reliability. Another interesting observation was even after the research was completed ,the final outcome of publishing those research articles in journals was surprisingly very less.

Research works based on qualitative data are not a very good choice for any international journal for Publication. One very essential component of quality research is utmost sincerity but unfortunately most the studies conducted here are based on the authors personal job need. Most of our clinicians think that they are overworked with their clinical activities and they have hardly enough time to conduct research. Most of the postgraduate students conduct their researches only for the purpose of examination. Although having a rich field for conducting Medical Research with all potential components that it needs we are failing to produce quality search activities but interestingly the pictures around our country is little different, Simply based on efficient record keeping system some centres are conducting quality research activities and producing numbers of quality research papers every day. Sometimes it is told that if we make it obligatory to publish at least a fixed number of papers in journal or conduct certain number of research for a faculty for continuation of his teaching position to be evaluated based on those. But perhaps it is not a genuine solution to address such a serious issue.

Research initiatives should come from someone's bottom of the heart. It cannot be produced by an order. We have tried many ways to improve this situations but the outcome is better but perhaps is not the best. Research funding is not a problem here but perhaps we have missed one important point which could change the scenario to some extent is 'encouragement'. If someone feels that he is capable of conducting quality research, may be the whole situation will be changed.

Another misperception about quality of research is prevailing in some of our minds, as we are lacking in state of the art Biomolecular laboratories and our understanding about Genetics are mostly theoretical. It

is beyond our scope to generate quality studies compatible with contemporary world. But we often forget that what the western world is lacking is the diversity of human factors where our resources are rich. A successful collaborative research could easily be designed and an effective avenue of bilateral collaboration and exchange of intellectual properties could easily be established.

 Conducting research is a passion and only a true lover of research can be a good producer of quality research work. A package of encouragement and building self-confidence will help someone to develop quality research questions, which is the basic of a research design, together with some knowledge on research methodology. Finally changing the mindset from traditional qualitative research question to a more specific one will definitely bring visible changes in a shortest possible time.

Professor Dr. Moudud Hossain Alamgir
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Original Article

Hypertension in Pregnancy Affects the Placental Weight and Fetal Outcome

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Abstract

Background: Hypertensive disorders of pregnancy and their complications rank as the major cause of maternal and perinatal mortality and morbidity. The placenta reflects the complications of hypertension and also provides the exact status of a baby's gestational time. **Materials and Methods:** The study was carried out in Department of Anatomy, Rangpur Medical College, Rangpur from July 2014 to June 2015 on 60 (sixty) human placenta 30 from normotensive mothers (control group) and 30 from hypertensive mothers (hypertensive group). The placenta was selected from the obstetric ward of Gynecology and Obstetrics Department, Rangpur Medical College Hospital, Rangpur after taking written permission. Birth weight was recorded. The weight of the placenta was measured using standard procedure. **Results:** The mean (± SD) of weight of placenta in hypertensive and control groups were (331.10 ± 67.54 gm vs 436.27 ± 55.61 gm, p<0.000). The mean (±SD) birth weight of baby in hypertensive and control groups were 2.24±0.51 kg vs 3.05±0.35 kg, (p<0.000) and the mean feto-placental weight ratio in hypertensive group was 6.87±1.42 and in control group 7.04±0.70. **Conclusion:** The weight of the placenta as well as birth weight of baby was reduced in pregnancies complicated with hypertension. The reduction of birth weight of the baby was proportional to the reduction of placental weight.

Keywords: Placental weight, Birth weight, Hypertension in pregnancy.

Introduction

The placenta is unique organ; it is fastest growing,[1] short lived by design, its brief existence ensures survival of human fetus in the intrauterine environment,[2] The placenta performs diversity of functions, ranging from anchoring the fertilized ovum, preventing its rejection by the maternal immune system to enabling the transport of nutrients and wastes between the mother and fetus.[3] So, the wellbeing of the fetus is affected by many factors but a healthy placenta is the most important factor in producing a healthy baby. Yet most of the time following delivery, placenta is consequently set aside, forgotten or put into storage for subsequent disposal. Examination of the placenta gives a clear idea of what had happened in the mother's womb and what is going to happen with the fetus in the future.[4] The expelled mature placenta weighs 470g (range 200-800g),[5] approximately one sixth of the birth weight of the baby.[6] The placental weight is a significant parameter reflecting fetal development during pregnancy and, on a population basis, may predict the development of diseases in adulthood.[7] Hypertension is one of the common complications of pregnancy and contributes significantly to maternal and perinatal mortality and morbidity.[8] Hypertensive disorders of pregnancy and their complications rank as the major cause of maternal mortality in the low-income countries of the world and accounts for 16%;[9] in Bangladesh 20%.[10] In addition, hypertensive disorders are strongly associated with fetal growth restriction and prematurity.[8] Pregnancy complicated by hypertension is commonly associated with placental insufficiency.[11] Increased resistance to utero-placental circulation adversely affects the growth and structure of placenta.[12] This study reveals the changes in placental weight in relation to fetal outcome in pregnancies associated with hypertensive disorders in northern region of Bangladesh.

Materials and Methods

This is a cross sectional analytical study. The study was carried out on 60 (sixty) human placenta; 30 were collected from normotensive mothers of uncomplicated pregnancies (control group) and 30 from mothers with hypertensive disorders of pregnancy (hypertensive group). Ethical clearance was taken from the Ethical Board of Rangpur Medical College. The placenta was selected from the obstetric ward of Gynecology and Obstetrics Department, Rangpur Medical College Hospital, Rangpur after taking written permission. All samples were collected from singleton live pregnancies of both normal vaginal and caesarian delivery. The birth weight was measured with baby weighing machine in kg. Gestational period was between 35-42 weeks and maternal age within 20 − 45 yrs range.

Inclusion criteria for Control Group:

Placentae delivered from mothers having normal blood pressure less than 140/90 mm of Hg.

Inclusion criteria for Hypertensive Group:

Placentae delivered from mothers having blood pressure 140/90 mm of Hg and above.

Common exclusion criteria:

1. Placentae delivered from mothers with Rh negative blood group, VDRL positive, HBsAg positive.
2. Presence of any other known systemic pathology
3. Multiple pregnancy (twining)
4. Congenital anomalies of the baby

The specimens were collected immediately after delivery, in the presence of researcher and were examined for completeness in recent state. Each specimen was gently washed in tap water on a dissection tray; the film of blood and blood clots on the maternal surface were removed with hand gently. The umbilical cord was cut 2 cm away from disc margin. The amniotic membrane was trimmed at disc margin with a scissors. Then the placenta was mopped and dried with dry cotton pad and blotting papers very gently. Measurement of weight of the placenta was done by means of digital electronic balance graduated in grams (gm) in a fresh state. Statistical test such as Student's 't` (unpaired) test, and correlation co-efficient test as applicable was done at 95% level of confidence (p <0.05).

Results

The mean (±SD) of weight of placenta in hypertensive group and control group were 331.10±67.54 (gm) and 436.27±55.61 (gm) respectively. This data showed a highly significant decrease (P<0.000) in weight of placenta in hypertensive group when compared with weight of placenta in control group. (Figure 1)

Table-I: Placental weight, birth weight and feto-placental weight ratio in hypertensive and control group (n=30 in each group)

Variables	Groups		P value
	Hypertensive	Control	
Placental Weight (gm)	230 − 500 331.10±67.54	338 − 595 436.27±55.61	0.000(S)
Birth weight (kg)	1.20 − 3.30 2.24 ± .51	2.50 − 3.80 3.05 ± .05	0.000(S)
Feto-placental weight ratio	4.15 − 9.26 6.87±1.42	5.88 − 8.88 7.04±0.70	0.591 (NS)

Results are shown as ranges and mean±SDs
P values were reached from unpaired t test
S: significant at 95% confidence level
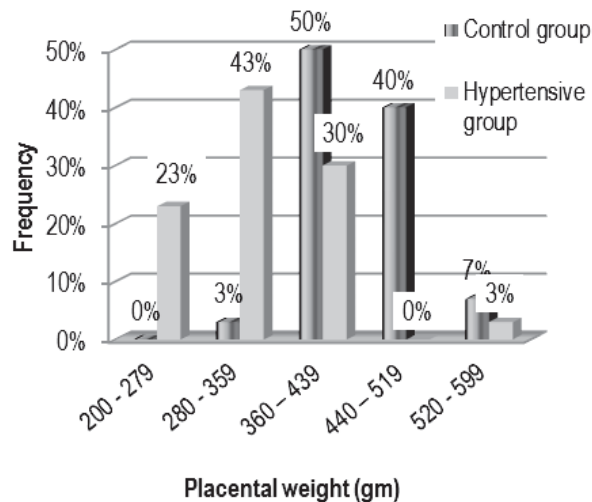NS: non-significant at 95% confidence level

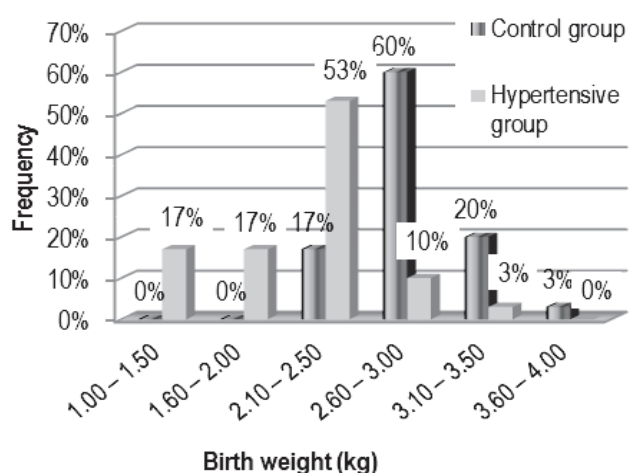**Figure-1: Distribution of placental weight in two groups.**

Figure-2: Distribution of birth weight in two groups.

The mean (±SD) birth weight in hypertensive group was 2.24±0.51 kg as compared to 3.05±0.35 kg in control group. Present study showed that there was a significant decrease in the birth weight in hypertensive group as compared to control group (P=0.000) (Table I, Figure 2).

In both the groups there was a significant positive correlation between placental weight and birth weight hypertensive group (r=0.503, P<0.01) and in control r=0.532, P<0.01) (Figure 3).

As per table I, on calculation; the mean (±SD) feto-placental weight ratio in hypertensive group was 6.87±1.42 and in control group 7.04±0.70. Though the difference in the mean feto-placental weight ratio was reduced in the hypertensive group, don't reach significant level (P >0.05).
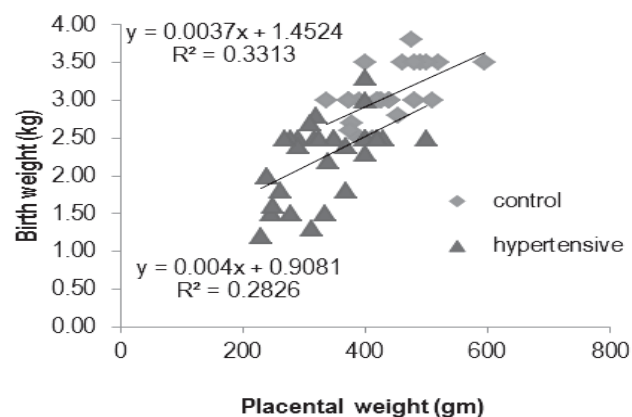
Figure-3: Correlation between placental weight and birth weight in two groups.

Discussion

Placental weight is a summary of different dimensions of growth, including placental thickness, shape, and number of blood vessels, cord insertion and arborisation of the villous and vascular nutrient exchange surface, reflected in increasing thickness of the disk. Although the placenta adapts well to the hypoxic condition in hypertension, the compensatory changes that occur are insufficient. These compensatory changes cause placental dysfunction that leads to oxidative stress and chronic fetal hypoxemia.[13] In the present study, mean placental weight in hypertensive group was 331.10±67.54 gm and in control group was 436.27±55.71 gm. It is clear that mean placental weight was significantly reduced in case of hypertensive group as compared to control group. The reduction in placental weight found in our study was analogous to the findings of previous workers.[1,14-21]

Hypertensive disorders not only affect maternal health but also jeopardize fetal growth and wellbeing.[15] The main impact of hypertension in pregnancy is under nutrition due to utero-placental vascular insufficiency which leads to growth restriction. In present study birth weight was significantly reduced in hypertensive group than control group. Birth weight was also found to be reduced by previous workers in pregnancies complicated with hypertension.[14-19, 21, 22] A significant positive correlation was found between placental weight and birth weight (p<0.001) in both control and hypertensive groups in the present study.

The linear relationship of placental weight and fetal weight can be very well showed by mean feto-placental ratio. The feto-placental weight ratio in our study was lower in hypertensive group as compared to control group; though the difference didn't reach the significant level.

Table II: Comparison of feto-placental weight ratio with other studies

SL	Study	Hypertensive Group	Control Group	Statistical significance
1.	Kaur etal 2013[15]	6.31±0.36	6.34±0.95	NS
2.	Nag et al 2013[18]	6.02 ± 0.36	5.94 ±0.86	(↑) S(P<0.05)
3.	Sankar et al 2013[13]	5.18±1.03	5.63±0.94	S (p<0.01)
4.	Anjankar et al 2014[14]	7.75±1.89	6.49±0.55	(↑) S(p<0.001)
5.	Singh et al 2014[21]	6.7±0.32	7.2±0.30	S (p<0.001)
6.	Keche et al 2015[17]	5.51	6.05	S (p<0.001)
7.	Thakur et al 2018[19]	6.70 ± 1.13	5.96 ±0.82	(↑) S(p<0.02)
8.	Our study	6.87±1.42	7.04±0.70	NS.

Results are shown as Mean + SDs and

P values were reached from unpaired t test

S: significant at 95% confidence level, NS: non-significant at 95% confidence level, (↑) S: significantly increased

Table II shows comparison of feto-placental weight ratio in our study with that of previous studies. Anjunkar et al (2014)14 found feto-placental weight ratio increased in hypertensive group and suggested that the placental weight is more severely affected than that of fetal weight. Placental weight and its ratio to birth weight have been reported to predict later chronic disease.[7] The majority of placental growth is completed by the end of second trimester but the fetal weight increases mostly in third trimester. If necessary steps are taken to control blood pressure in time we can improve placental growth therefore fetal outcome.

Conclusion

Considering the findings of the present study and correlating them with the findings of previous workers, it may be concluded that birth weight as well as the weight of placenta are reduced in hypertensive pregnancies. This study would help to create awareness and would be helpful in early recognition of fetus at risk and better management of such pregnancies.

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Original Artical

Study on Management Adherence of Parents of Thalassemia Patient

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Abstract

Background: Thalassemia is a chronic disorder requiring lifelong transfusions and medications causing emotional and financial burden to the family. This study was done to assess the knowledge and awareness of parents having a Thalassemic child and to ameliorate their experiences in the upbringing of their child. **Objective:** To find out the management adherence of parents with Thalassemia children **Materials and Methods:** A cross sectional, descriptive study was conducted in department of Pediatrics in TMSS Medical College and Rafatullah Community Hospital, Bogura, Bangladesh from May 2018 to April 2019. Parents were interviewed through a pretested questionnaire to assess their knowledge, awareness, and the practices in management adherence as they follow in regard to the transfusion, treatment, vaccination and prevention of thalassemia. **Results:** About 66% patients were males, 34% were females. Family history of thalassemia was present in 26% of the cases and history of consanguineous marriage was present in 7% of the cases. Seventy six percent of the parents were aware of the prenatal diagnosis that could be performed to prevent the birth of thalassemia children ($P<0.05$). About 82% of the parents were undergone for prenatal diagnosis and it was found more in middle income family. So, socioeconomic status-wise difference in attitude towards prenatal diagnosis ($P=.001$) was found statistically significant. Maximum number of parents who gave 6-10 correct answers regarding management adherence were coming for regular follow up, monitoring ferritin levels of their children, whose children were using chelating agents and were screened for HIV, HBsAg and HCV i.e. 52%, 56.2%, 56.7%, 61.8%,58.9% and 60% ($P<0.05$). So relation of knowledge and management adherence was found statistically significant.

Conclusion: A community based educational efforts, social and behavior change to increase awareness against Thalassemia should be developed in Bangladesh based on the findings of this study. Control of thalassemia requires management adherence of the individual Thalassemia parents as well as a community based educational effort to increase the awareness of this problem.

Keywords: Thalassemia, Transfusion, Management adherence.

Introduction

B-thalassemia is an autosomal recessive single gene disorder characterized by defective production of hemoglobin and excessive destruction of Red Blood Cells. Hemoglobin is formed of four protein subunits, normally two α and two β. Genetic mutation in the gene encoding for β subunits of proteins, results in reduced or totally absent synthesis of β globin chain leading to the formation of abnormal hemoglobin or even to the absence of β hemoglobin. Thalassemia is a hereditary haemoglobinopathy resulting from the absence or reduced synthesis of either alpha or beta globin chain. Depending upon the globin chain involvement, thalassemia is categorized into Alpha-thalassemia and Beta thalassemia. The worldwide prevalence of annually affected conceptions with Beta thalassemia is 42,409 cases with annual births worldwide being 1,28,667,000.[1] High prevalence is present in populations in the Mediterranean, Middle-East, Transcaucasia, Central Asia, Indian subcontinent, and Far East. The South-east Asia alone accounts for 21,693 annually affected conceptions with annual births being 38,139,000. Every year, 10,000 children with Thalassemia are born in India.[1] Thalassemia exists in three forms: Thalassemia trait or the asymptomatic carrier stage – carry a single beta globin mutation and

are generally asymptomatic except for microcytosis and mild anemia.[2] Thalassemia intermedia have at least 1 beta + thalassemia mutation and is less severe phenotype such that they do not require regular transfusions. Thalassemia major-In β thalassemia major, the production of β-globin chains is severely impaired, because both β-globin genes are mutated (homozygous state). The severe imbalance of globin chain synthesis and production results in ineffective erythropoiesis that causes severe microcytic, hypochromic anemia leading to early transfusion therapy. Children usually become symptomatic from profound weakness and cardiac decompensation during the latter half of first year.[3] Transfusions begin in the 2nd month to 2nd year of life but rarely later. Affected children fail to thrive and become progressively pale. Bone deformities secondary to marrow expansion, hepatosplenomegaly, cachexia, classical haemolyticfacies (maxilla hyperplasia, flat nasal bridge, frontal bossing) or pathological fractures may develop. Management of patients includes regular blood transfusions to keep haemoglobin (Hb) above 9-10gm/dl, iron chelation therapy to reduce iron overload, surgical interventions like splenectomy. Allogenic hematopoietic transplantation is the definitive curative treatment available till date.[4] Since the past three decades, regular blood transfusions and iron chelation have transformed thalassemia from a rapidly fatal disease in early childhood to a chronic disease compatible with prolonged life. Today life expectancy of a thalassemic varies between 25-55 years, depending on the compliance with medical treatment. Despite increased life expectancy, complications keep arising which are mainly transfusion induced haemosiderosis. The best way to reduce the burden of thalassemia is prevention. There are different strategies to prevent thalassemia, which include parental awareness, population screening, genetic counselling, and prenatal diagnosis. Creating awareness and educating parents can prove to be cost-effective in the prevention of the disease and improvement of quality of life of patients with thalassemia. In our country, there are studies on general population about screening and prenatal diagnosis of thalassemia, but very few studies emphasize on the awareness and experiences of parents raising a thalassemia child. The emotional affliction and financial anguish with the agony and apprehension of the future of their children is put forth by this study.

Materials and Methods

Study design and setting: A cross sectional descriptive study was conducted in the Department of Pediatrics of TMSS Medical College and Rafatullah Community Hospital, Bogura from May 2018 to April 2019. Parents of Thalassemia major patients were interviewed by pretested structured questionnaire for knowledge, attitude, and practices in management adherence of Thalassemia parents in a language best understood by them. Parents who did not give consent were excluded from the study.

Sample collection: Parents of 100 patients who were coming regularly to have blood transfusion from Department of pediatrics, TMSS Medical College and Rafatullah Community Hospital, Bogura.

Inclusion criteria: All the patients coming for regular blood transfusion in the Pediatrics department from 0 year to 15 years of age and submitted the written consent from parents to participate in the study.

Exclusion criteria: Those patients who do not give written consent and are not coming for regular transfusion in the centre during the period of study

Statistical methods: The variables were compared by Chi Square test and results so obtained were analysed using SPSS version 21.0 and level of significance was determined as its 'P' value with $P<0.05$ taken as statistically significant.

Scoring System: The patients were divided into four groups according to age i.e. 0-4 years; 5-9 years; 10-14 years and 15 years and into five groups according to socio-economic status of the patients applying Kuppuswamy Scale. The patients were also divided into three groups on the basis of number of questions regarding knowledge correctly answered i.e. 0-5; 6-10 and 11-15.

Results

Table-I: Distribution of the patients according to their bio-demographic characteristics

Characteristics	Value	
	n	Percentage
Age groups (months)		
0-4	24	24
5-6	35	35
10-14	29	29
15	12	12
Total	100	100
Sex		
Male	66	66
Female	34	34
Total	100	100

Table I shows distribution of patients according to their bio-demographic characteristics where 66% patients were males and 35% were females. About 24% of the patients were in between 0-4 year's age group, 35% of the patients were in 5-6 years of age group, 29% patients were belonged to 10-14 year age group and rest 12% of the patients were 15 years of age.

Table-II: Distribution of the patients according to their socioeconomic characteristics

Characteristics	Value	
	n	Percentage
Area of living		
Rural	32	32
Semi urban	12	12
Urban	56	56
Total	100	100
Socioeconomic status (SES)		
Upper	02	2
Upper middle	37	37
Lower middle	21	21
Upper lower	37	37
Lower	03	3
Total	100	100

Table II shows that 32% of the patients were from rural area, 12% patients lived in semi urban area, and 56% patients were from urban areas. Again, socioeconomic status of these patients was about 37% of the patient belonged to upper middle class and upper lower class respectively. On the other hand, 21% patients SES were lower middle class, 3% patient's lower class and only 2% patient's status was upper class.

Table- III: Distribution of the Thalassemic patients according to the age at the time of their diagnosis

Thalassemia diagnosed at age in months	n	Percentage
0-6	65	65
7-12	28	28
13-36	07	07
Total	100	100

Table III depicts the distribution of the patients according to the age at the time of their diagnosis. About 65% of the cases the age of diagnosis of Thalasssemia was between 0-6 months, 28% of cases between 7-12 months, and 07% of the cases were diagnosed between 1-3 years of age. About 07% of the patients were diagnosed within 3 years of age.

Table-IV: Distribution of the patients according to their family history of Thalassemia and consaguineous marriage of parents

Characteristics		Male n (%)	Female n (%)	Total (%)
Family History				
Thalassemia	Present	14(52)	12(48)	26
	Absent	50(69.5)	22(30.6)	72
Consanguineous Marriage	Present	3(42.8)	4(57.1)	07
	Absent	63(67.7)	30(32.2)	93
Total		66	34	100

Table IV shows distribution of the patients according to their family history of Thalassemia and consaguineous marriage of parents where family history of Thalassemia was present in 26% of the cases and absent in 72% of patients. Again, history of consanguineous marriage was present in 7% of the cases and rest 93% had no history

Table-V: Knowledge and awareness of the parents about Thalassemia disease and its treatment options in relation with age of the Thalassemia patient

Age group	Age in years in months				Total	Statistical Analysis	
	0-4	5-9	10-14	>15	n		
knowledge and awareness	24	35	29	12	100	χ^2	P
	n (%)	n (%)	n (%)	n (%)			
Type of b lood disorder	11(25.6)	16 (37.2)	9 (20.9)	7 (16.3)	43	7.855	.04
Genetic disorder	10(1 1.9)	38 (45.2)	25(29.8)	13(15.5)	84	9.80 9	.021
3 Types of Thalassemia	3(10.7)	5(17.8)	16(57.1)	4 (14.3)	28	8.8 14	.016
Role of Consaguiniy	8 (14.0)	16(28.1)	15(26.3)	18(31.6)	57	9.965	.012
Prenatal Diagnosis	13(17.1)	27(35.5)	20(26.3)	16(21.1)	76	7.408	0.4 5
Is the disease manageabl e	7 (13.7)	20(39.2)	14(27.5)	10(19.6)	51	9.632	.02 1
Need for BT	20(26)	28(36.4)	19(24.7)	10(13.05)	77	8.3 20	0.2 7
Importance of Ferritin Levels	8 (13.1)	22(36.1)	19 (31.1)	12 (19.7)	61	14. 654	.00 3
Role of chelation therapy	9 (14.1)	22 (34.4)	20 (31.2)	14(21.9)	64	10. 560	.01 3
BMT	14(19.2)	26(35.6)	20(27.4)	13(17.8)	73	8.5 17	.03 1
Role of Hydroxyurea	4 (4 8)	2 (16.7)	3 (20)	3 (25)	12	2.8 13	.510

BT – Blood Transfusion, DFP- Deferiprone, DFR- Deferasirox, DES- Desferrioxamine, BMT – Bone marrow transfusion.

Table V shows knowledge and awareness of the parents about Thalassemia disease and its treatment in relation with the age of the Thalassemia patient. It shows that 43% of the parents were aware of that thalassemia is a blood disorder, 84% of the parents had knowledge that it is a genetic disease and again it was known to 28% of the parents that there are three types of thalassemia. About 57%, 76% and 51% of parents were aware of the role of consanguinity, the prenatal diagnosis that could be performed to prevent the birth of thalassemia children, the disease is manageable respectively. Again, Knowledge of the parents regarding need for blood transfusion, importance of ferritin levels, role of chelation therapy and bone marrow transplantation was found in 77%, 61%, 64%, and 73% of the parents. ($P<0.05$)

Table -VI: Attitude of parents towards preventive treatment option for Thalassemia in relation to socioeconomic status

Characteristic	Undergone prenatal diagnosis	Agree with performing abortion	Adopting family planning method
Socioeconomic status	n (%)	n (%)	n (%)
Upper	07 (8.5)	19 (20.7)	02 (1.5)
Upper middle	36 (43.9)	37 (40.2)	26 (38.8)
Lower middle	18(21.9)	02 (1.1)	14 (20.9)
Upper lower	20(24.4)	33 (35.9)	25 (37.3)
Lower	01 (1.2)	02 (2.2)	01 (1.5)
Total (n=100)	82 (100)	93 (100)	68 (100)
χ^2	17.922	2.389	.715
P value	.001	.547	.789

Table VI shows the attitude of parents towards preventive treatment option for Thalassemia in relation to socioeconomic status. It shows that 82% of the parents underwent prenatal diagnosis and socioeconomic status-wise difference in attitude towards prenatal diagnosis (P=.001) is statistically significant. Again, 93% of parents were willing for abortion of thalassemia affected fetus, and 68% of the parents were adopting family planning methods.

Table-VII: Treatment adherence of the parents in relation to their disease knowledge

No.of questions answered by parents regarding disease knowledge	No. of patients	Coming for regular follow up	Monitoring ferritin levels	Using chelating agents	Regularly screened for			Patient undergone splenectomy
					HIV	HBs Ag	HCV	
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
0-5	28	26(26.5)	15(20.5)	13(17.6)	8(11.8)	5(9.8)	6(12)	1 (20)
6-10	51	51(52)	41(56.2)	42(56.7)	42(61.8)	30(58.9)	30(60)	2 (40)
11-15	21	21(21.4)	17(23.3)	19(25.7)	18(26.5)	16(31.4)	14(28)	2 (40)
Total	100	98(100)	73(100)	74(100)	68(100)	51(100)	50(10)	5(100)
Statistcal analysis	χ2	9.057	13.956	39.292	8.177	18.470	20.310	1.802
	P	.35	.001	.000	.43	.000	.000	.387

Table-VII shows the treatment adherence of the parents in relation to their disease knowledge It shows that maximum number of parents who were coming for regular follow up, monitoring ferritin levels of their children, whose children were using chelating agents and were screened for HIV, HBsAg and HCV and splenectomy i.e. 52%, 56.2%, 56.7%, 61.8%,58.9%, 60% and 40%. About 51% parents were give 6-10 correct answers. It also shows that 100% i.e. 21/21, 80.9% i.e. 17/21, 90.5% i.e 19/21, 85.7% i.e 18/21, 76.2% i.e 16/21, 66.7% i.e 14/21 of parents who gave 11-15 correct answers regarding disease knowledge were coming for regular follow up, monitoring ferritin levels of their children, using chelating agents and getting their children screened for HIV, HBsAg, HCV respectively. Here, the relation of knowledge and treatment adherence was found statistically significant (P<0.05).

Discussion

In this study, the parents of hundred thalassemia parents were asked questions regarding knowledge about disease and various treatment options available, their attitude towards prevention of birth of thalassemia affected baby and practices followed by them as per pre-designed and pre-tested performa. In this study, 66% patients were males and 34% were females. This finding of male preponderance is in concordance with other studies done by Bandyopadhyay et al (2003); Shukr et al (2011); Yagnik (1997) and Sen et al (1994).[4, 5, 6, 7] In our study 24% of the children were in age group 0-4 years, 35% in 5-9 years, 29% were in 10-14Years and 12% were >15 years. In other studies done by Shukr et al (2011) and Ishaq et al (2012) mean age of the patients was 9.5 years. There is no data available in literature to make age group wise comparison. (Table -I).[5, 8] In our study,

32% of the patients were from rural area,12% patients from semi-urban area and 56% were from urban areas. In this study majority of the parents about 58% are belonged to middle class family. This finding is not in concordance with a study done by Arif et al (2008) where majority of the parents were from low socioeconomic status.[9] There is no study available in literature to make geographical distribution wise comparison. (Table II) In our study, 65% of Thalassemia cases were diagnosed with in 6 month of life. A study conducted by Upadhyay and Chatterjee (2009) shows similar results where 80% of the patients were diagnosed by the age of 3 year. This shows that maximum number of patients of thalassemia major became symptomatic in infancy and the rest in 1st 3 years of life. (Table III).[10] In our study, family history of thalassemia was present in 26% of the cases and

history of consanguineous marriages was present in 07% of the cases. Naseri et al (1997) in their study on status of thalassemia in Iran also reported that 66% of thalassemia children had consanguineous parents. The difference being due to the fact that consanguinity is high in Muslims. (Table IV).[11] In our study 43% of the parents were known that it is a blood disorder, 84% of the parents had knowledge about genetic disease and 76% of the parents were aware of prenatal diagnosis. This is in concordance with study done by Ishak et al (2012) which reported that 76.5% parents knew about prenatal diagnosis.[8] In our study 51% of the parents were aware of that this disease is manageable. About 77% of parents were known that blood transfusion is needed for growth of the child and to maintain hemoglobin levels, 61% of the parents knew the role of ferritin levels and 62% of the parents knew the role of chelation therapy. A statistic significance was found in the knowledge of parents regarding the management of disease (P=.021), need for blood transfusion (P=.027), importance of ferritin levels (P=.003), role of chelation therapy (P=.013) and bone marrow transplantation (BMT) (P=.031). On other hand, knowledge of the parents regarding the inheritance and types of thalassemia, prenatal diagnosis, curability of the disease was also statistically significant in relation to the sex of the patient (P<0.05). Likewise, knowledge of the parents regarding use of deferiprone and desferrioxamine, splenectomy and role of hydroxyurea was not different statistically in the relation of the sex of their children. (Table V) In the present study, 82% of the parents underwent prenatal diagnosis (P<0.05). Similar results were found in study done by Shukr et al (2011).[5] In this study, 93% of the parents were willing for abortion of thalassemia affected pregnancy (P>0.05). Similar results were shown in studies of Ahmad (2007) where majority of the parents and Karimi et al (2010) where 86.7% of the parents were in favor of termination of the affected foetus. In our study majority of the parents were willing for termination of pregnancy with affected fetus because of poor outcome and prognosis. Again, in those who were not willing for abortion the reason was emotional and religious in majority of them.[12, 13] Maximum numbers of parents who underwent prenatal diagnosis was from upper middle class about 43.9%. Here, socioeconomic status wise difference in attitude towards prenatal diagnosis was found statistically significant (P=.001).There was no significant difference in the attitude of the parents towards prevention of disease like performing abortion and adopting family planning in relation to socioeconomic status as P values were >.05. (Table VI). A study by Department of Psychiatry, National Institute of Mental Health and Neurosciences, Bangalore, by Shaligram et al (2007) showed that 44% children had psychosocial problems.[14] Further research can be done regarding psychological issues of Thalassemic childen and their parents. Again, Zahed et al (2002) in their study showed that the recent emergence of oral iron chelation therapy with deferiprone, has helped to lessen the burden of desferrioxamine infusion and thus is improving compliance.[15] Table VII shows the division of parents giving correct answers for knowledge questionnaire into three groups i.e. 1st giving 0-5 correct answers, 2nd giving 6-10 correct answers, 3rd included parents who gave 11-15 correct answers. Then the knowledge was correlated with treatment adherence Maximum percentage of parents who gave 11-15 correct answers, were coming for regular follow up, monitoring ferritin levels of their children, giving chelating agents to their children, getting the screening for HIV, HBsAg and HCV was done. Relation between the treatment adherence and knowledge of the parents was found significant with P values =.35, .001, .000, .43, .000, .000 regarding regular follow up, monitoring of ferritin levels, use of chelating agents, screening for HIV, HBsAg and HCV. This is in concordance with study done by Lee et al (2009) the score for the patient's disease knowledge about thalassemia major was positively correlated with follow-up visit adherence (P<0.001) and with desferrioxamine infusion adherence (P<0.001). [16]

Conclusion

This study has focused on the lack of knowledge among parents of thalassemia children about issues like prenatal awareness, additional vaccines, need for transfusion, chelators, etc but depicts their good outlook and mindset in treatment of their child. Parents

may be emotionally or financially weakened but it has only impassioned them for the optimal treatment for their child. We have witnessed that the adequacy of knowledge and prenatal awareness had declined incidence of thalassemia in Cyprus drastically and we must take motivation from such places and take suitable measures to do so.

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Original Artical

Rationale of Day Care Blood Transfusion Services: Recent Trends in Transfusion Medicine

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Abstract

Background: Day Care Transfusion Unit (DCTU) within Transfusion Medicine Department plays a key role to provide Transfusion therapy for those who are getting transfusion regularly or desperately need one or two units of blood for their treatment. Transfusion in a DCTU is also an alternative to hospital admission and cost effective benefit for recipient. The purpose of the study is to assess transfusion services in our Day care settings. **Materials and Methods:** We conducted a cross sectional observational study in DCTU of Transfusion Medicine Department of TMSS Medical College and Rafatullah Community Hospital, Bogura from January 2020 to December 2020. All prescribed data of blood recipient like name, age, sex, Blood group, clinical diagnosis, blood and blood component used etc were collected from record register. Recorded data were analyzed as percentage and proportion. **Results:** In this study total 715 blood recipients attended in our DCTU. Among those 408 (57%) were male, 307 (43%) were female and majority 283 (39.58%) of recipient were below 10 years. Transfusion was required more frequently in Thalassemic patient 525 (73.42%) & other diseases include undiagnosed Anemia 52 (7.27%), Chronic Kidney Disease 44 (6.15%), Ca Breast- 18 (2.51%), Ca Lung- 16 (2.23%) and Iron deficiency anemia- 12 (1.67) etc. Among recipient B +ve blood group 240(33.56%) being more prevalent. Out of 715 units transfusion, Red Cell Concentrate (RCC) was most commonly utilized product 683(95.52%) followed by Whole blood 30 (4.19%) and then Fresh Frozen Plasma 2 (0.27%). **Conclusion:** DCTU is now popular, convenient and hassle free transfusion services. We recommended establishing more DCTU for the Transfusion needed patients.

Key words: Blood Transfusion, Day Care transfusion unit, Recipient.

Introduction

Medical day care (MDC) is an outpatient clinic that provides medical interventions, as well as minor procedures for patients who required non-emergent infusions, transfusions and medical procedures. Some of the services provided at this clinic include: blood transfusions, intravenous immunoglobulin infusions, intravenous iron infusions, phlebotomies, IV medications, Thoracocentesis and Paracentesis, etc.[1] On the contrary, Day Care Transfusion Center (DCTC) is a specialized outpatient service center of Transfusion Medicine Department that provides only transfusion of blood or blood products, iron cheletion and very recently started Platelet Rich Plasma(PRP) therapy to patients who do not require admission to the hospital rather receive above mentioned services as outdoor patients.

Transfusion of blood components and related services has become one of the essential components of medicine due to the development and modernization of medical services. Once Transfusion Medicine was a branch of clinical pathology, however the field has now expanded into a clinical, hospital-based specialty. Now Transfusion medicine (or transfusiology) is the branch of medicine that encompasses all aspects of the transfusion of blood and blood components including aspects related to hemovigilance. It includes issues of blood donation, immunohematology and other laboratory testing for transfusion-transmitted diseases, management and monitoring of clinical transfusion practices, patient blood management, therapeutic apheresis, stem cell collections, cellular therapy, and

coagulation. Laboratory management and understanding of state and federal regulations related to blood products are also a large part of the field.[2] In Bangladesh, blood transfusion service was started in Dhaka Medical College in 1950 by late Dr. Atabuddin who previously worked as one of the medical officer of Red Cross Blood Bank of Kolkata.[3] The first blood transfusion service committee was formed in year 1952 and functioned till 1961. By the year 1968 three more centers were opened at Mitford Hospital Dhaka, Chittagong Medical College and Rajshahi Medical College Hospital. Since then other transfusion centers have been opened at Mymensing Medical College Hospital, Sylhet Medical College Hospital, Khulna Sadar Hospital and Barishal Sadar Hospital. In 1969 a new service committee was formed.[4] Institute of Postgraduate Medicine and Research (IPGM&R) started this service on 8th October 1972. This service was inaugurated by the Prime Minister Bangabondhu Sheikh Mujibur Rahman as well as it expanded to other hospitals.[4, 5] There was no day care transfusion service in any blood transfusion centers in Bangladesh till 1990. In early 1990 the authorities of the IPGM&R, Dhaka, Bangladesh, established first time a DCTC within Transfusion Medicine Department to provide transfusion therapy to patient who are waiting for long period for hospital beds and desperately need one or two units of blood transfusion for their treatment.[6] Second DCTC was established in Dhaka Medical College Hospital (DMCH) in 2005 with a single bed aiming to provide transfusion of those patients who needed transfusion before or after chemotherapy or radiotherapy or those required transfusions at regular interval like Thalassemia and others.[7] Now the number of beds are ten.

The third DCTC was established in TMSS Medical College and Rafatullah Community Hospital, Bogura a tertiary care hospital having 750 beds on 1st December. 2016 with only 5 bedded wards by the Transfusion Medicine Department of TMSS Medical College.[8] Now it has 10 bedded wards including 2 cabins. Average daily patients are about 5 to 7 in number who are getting transfusion therapy per day

without requiring any admission in the hospital. The patients and their relatives are happy for such kind of transfusion therapy in this DCTC. Blood and blood components are transfused in this DCTC under direct supervision of Transfusion Medicine Specialist. There are a few studies about the services of these units in our country. The aim of the study is to assess transfusion services given in this DCTC in relation to age and sex, to find out the disease modalities of blood recipient and to find the type of blood components used in our day care settings.

Materials and Methods

This is cross sectional observational study was carried out during a period from January 2020 to December 2020, in the Transfusion Medicine Department of TMSS Medical College and Rafatullah Community Hospital, Bogura. Blood and blood components transfused to all referred patients for day care transfusion therapy were recorded. During blood transfusion every patient was carefully monitored by Transfusion Medicine Specialist. ABO and Rh blood grouping of blood recipients were determined by standard method with auto control. The types of blood components in day care unit were Whole Blood (WB), Red Cell Concentrate (RCC), Fresh Frozen Plasma (FFP). No medication was used before or during Transfusion except multi-transfused recipients having previous allergic reaction received anti-histamine as pre-medication. Some patients received antipyretic 30 minute before transfusion who had history of Febrile Non-Hemolytic Transfusion Reaction (FNHTR). Recorded data were analyzed as percentage and proportion.

Results

Table I: Sex distribution of patients (n=715)

Sex	Number	Percentage (%)
Male	408	57
Female	307	43

In the present study 715 blood recipients attended in DCTC of Rafatullah Community Hospital. Among the patients 408 (57%) were male and 307 (43%) were female (Table I).

Table II: Age distribution of patients (n=715)

Age (in years)	Number	Percentage (%)
< 10	283	39.58
11-20	153	21.39
21-30	95	13.28
31-40	42	5.87
41-50	22	3.07
51-60	38	5.31
> 60	82	11.46

Majority 283 (39.58%) of recipient were below 10 years (39.58%) followed by age group 11-20 (21.39%), 21-30 (13.28%) and then others (Table II).

Table III: Distribution of different diseases among patients (n=715)

Diseases	Number	Percentage (%)
Thalassemia	525	73.42
Undiagnosed Anemia	52	7.27
Chronic Kidney Disease	44	6.15
Ca Breast	18	2.51
Ca Lung	16	2.23
Iron Deficiency Anemia	12	1.67
Sickle Cell Anemia	11	1.53
Ca Prostate	10	1.39
Ca Cervix	8	1.11
Aplastic Anemia	5	0.69
Menorrhagia	4	0.55
Progressive Bone Marrow Failure	3	0.41
SLE	2	0.27
Ca Stomach	2	0.27
Leukemia	2	0.27
Hemophilia	1	0.13

Majority of transfusion-requiring patients were of Thalassemia- 525 (73.42%) followed by Undiagnosed Anemia- 52 (7.27%), then Chronic Kidney Disease(CKD)- 44 (6.15%), Ca Breast- 18 (2.51%), Ca Lung- 16 (2.23%), Iron deficiency anemia- 12 (1.67%), Sickle Cell Anemia- 11 (1.53%), Ca Prostate- 10 (1.39%), Ca Cervix- 8 (1.11%) and then others (Table III).

Table IV: Distribution of blood group among patients (n= 715)

Blood Group	Number	Percentage (%)
" B" Positive	240	33.56
" O" Positive	229	32.02
" A" Positive	152	21.25
" AB" Positive	90	12.58
" A" Negative	2	0.27
" B" Negative	Nil	Nil
" O" Negative	1	0.13
" AB" Negative	1	0.13

Table IV showed that out of all patients, 240 (33.56%) were of "B" Positive, 229 (32.02%) of "O" Positive, 152 (21.25%) of "A" Positive, 90 (12.58%) were of "AB" Positive then 2 (0.27%) and then others as negligible. None was of 'B' Negative.

Table V: Distribution of blood components among patients (n=715)

Component	Number of units	Percentage (%)
Red Cell Concentrate (RCC)	683	95.52
Whole Blood (WB)	30	4.19
Fresh Frozen Plasma (FFP)	2	0.27

Table-V: described the distribution of blood components used in our day care unit. Total 715 units of blood and blood components were used during this period. Red Cell Concentrate (RCC) was mainly transfused in patients with Thalassemia and Undiagnosed anemia and Malignancy. Whole Blood units were used in patients with Aplastic anemia, Progressive Bone Marrow failure and Sometimes after Chemotherapy. Most common utilized product RCC was 683 (95.52%) followed by WB 30 (4.19%) and then FFP 2 (0.27%).

Discussion

Day care transfusion center is essential for those patients who require blood transfusion regularly for treatment purpose. As there are plenty of patients with various diseases requiring transfusion of blood and blood components, iron cheletion, now newly introduced PRP therapy, usually the patients had to pay for admission in hospital, for consultancy of doctors, for hospital beds, service charges. On the

contrary, these patients could get those services for a minimum cost and sufferings in a DCTC as they are treated as outpatient and need not get admission to a hospital; they get the services in a day and leave the hospital within a few hours.

In this study, 715 patients received blood transfusion from our DCTC, majority of them were patients of Thalassemia (73.42%), followed by Undiagnosed anemia (7.27%) and then CKD (6.15%), Malignancy (average 2%) and others (Table III). A study on DCTC by Kashem et al at IPGM&R now BSMMU, showed that out of 104 patients getting transfusion 76 (73.06%) were Thalassemic, which is similar to present study.[8] Parvin et al also reported on a similar number of patients (n= 718) getting transfusion where Thalassemic patients were of much lower percentage (50.88%).[9]

Two studies done by Begum IA et al[7] and Karim et al.[10] carried out on patients attending in DCTC at Dhaka Medical College Hospital (DMCH) found that majority of patients were of Malignancy (73.23% and 73.45% respectively), followed by other diseases like Myeloproliferative disease, Aplastic anemia, menorrhagia and Thalassemia, CKD, anemia due to other diseases, etc. These studies are quite different from our study, Prevalence of patients with Thalassemia were very less compared to other diseases whereas Thalassemic patients were most prevalent in our situation. This variation may be due to facilities for admission of abundant malignant patients at DMCH coming from all over the country for transfusion. Another study in a private DCTC in Dhaka city stated that out of 383 patients, 180 (47.00%) suffered from anemia of various diseases and 120 (31.33%) suffered from carcinomas of various kinds.[11] As the study did not mentioned the diseases causing anemia, comparison with our study was not possible.

Types of blood components and amount of blood units required for patients were as follows: B+ 240 (33.56%), O+ 229 (32.02%), A+ 152 (21.25%), AB+ 90 (12.58%) and then others as negligible amount (Table IV). This results are dissimilar to Karim et al[12] who found most common blood group O+ 305 (41.10%) followed by B+197(26.54%), then A+ 167(22.50%), AB+ 49(6.60%) and so on which is similar to studies of Parvin F et al.[6] and Begum IA[7]

Mainly three blood products were used in our center;

most common utilized product RCC was 683 (95.52%) followed by WB- 30 (4.19%) and then FFP- 2 (0.27%) (Table V), which is dissimilar to studies by others where use of whole blood was the highest utilized component.[6, 10, 12] As the maximum patients need the correction of anemia, RCC is best for them. It is not clear why the other centers use WB as the majority of transfusion reactions occur due to WBC and plasma.

Conclusion

Now a day, DCTCs are becoming popular as they are very convenient options for patients who receive frequent blood transfusions for their survival. They need not admission in hospital for transfusion which reduces their sufferings. In our country day care transfusion facilities are very few (only three) in private as well as in Govt. medical college hospitals. So it is very essential to establish DCTCs in every hospital for such patients requiring transfusion of blood and other therapies. A combined effort of Govt. and non Govt. organizations should extend their hands to establish DCTCs and help for those patients.

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Effects of Green Tea Consumption on Serum Lipid Pattern in Women.

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Abstract

Background: Dyslipidaemia is an important risk factor for Coronary artery diseases (CAD) and stroke. The National Cholesterol Education Program-Adult Treatment Panel (ATP-III) suggested lifestyle intervention including diet, exercise and judicious use of pharmacologic agent for management of CAD. Green tea became very much popular due to various pharmacological effect and nutritional profile. **Objective:** In this study our main goal is to evaluate the beneficial effects of green tea on lipid profile in women. **Materials and Methods:** This interventional study was conducted in the Department of Physiology of Dhaka Medical College from January 2016 to December 2016. After fulfilling the ethical aspect, a total number of 42 women with age ranging from 40 to 50 years were selected and randomly assigned in study group (22 women) and control group (20 women). Study group consumed green tea for 12 weeks and the control group did not consume green tea. The study variables were serum lipid profile levels. Variables of both groups were estimated 2 times (at baseline and after 12 weeks). Data were analyzed by paired Student's 't' test and unpaired Student's 't' test. **Results:** After intervention, significantly lower values were found in following variables [TC ($p<0.001$), LDL ($p<0.001$), TG ($p<0.05$)] in study group in comparison to their baseline values. Moreover, significant reduction in LDL ($p<0.001$), TC and TG ($p<0.05$) was observed in study group comparison to that control group after 12 weeks. No significant change was observed in HDL level in both group after green tea consumption. **Conclusions:** The study concluded that, regular consumption of green tea may improve lipid profile.

Introduction

Dyslipidemia plays a crucial role in development of cardiovascular diseases, which has become the leading cause of death in most developed countries as well as developing countries including Bangladesh.[1,2] According to WHO, 17.7 million people died from CVD in 2015, representing 31% of global death. 80% of these deaths occur in the population from lower and middle income countries like Bangladesh.[3,4]

Green tea, one of the healthiest drinks is rich in caffeine, antioxidant polyphenol and other beneficial nutrients like protein, carbohydrate, vitamins and minerals. The polyphenols are rich in catechins and the EGCG is the strongest bioactive polyphenol. From centuries it was used in traditional Indian and Chinese medicine for various diseases. A number of studies showed its anti-microbial, anti-inflammatory, anti-allergic, neuroprotective and hepatoprotective properties. It also decreases platelets aggregation, stimulates the immune system and modulates detoxification of enzymes. It also has potential benefit on Alzheimer's diseases, heart diseases, stroke and inflammatory skin diseases.[5,6] Some study showed that it can reduce malondialdehyde (MDA) thereby lower the incidence of chronic disease that may occur due to the consequences of increased oxidative stress.[7] An epidemiological survey exhibited that regular green tea

drinking population like Japanese have low risk of type 2 DM and cardiovascular disease (CVD). Daily intake of more than two cups per day can lower the plasma cholesterol level and reduce the risk of death from CVD by 22-33%.[8] It also stimulates hepatic beta-oxidation and has hypolipidemic activity.[9]

Materials and Methods

This prospective interventional study was conducted in the Department of Physiology, Dhaka Medical College, Dhaka from January 2016 to December 2016 after obtaining ethical clearance from concerned Departments, Research review committee and Ethical review committee of Dhaka Medical College. At the beginning of the study 48 female subject were selected on the basis of inclusion and exclusion criteria from outpatient department of Endocrinology, Dhaka Medical College Hospital and by personal contact from different areas of Dhaka city. The nature, purpose and benefit of the study was explained to each subject in details. Informed written consent was taken from the participants. Detailed history of food habit, drug, daily physical activity and medical history were taken. Data were collected in pre-designed structured questionnaire form by the researcher herself. For statistical analysis, paired Student's 't' test and unpaired Student's 't' test were done. Anthropometric measurement (Height, weight and waist circumference) of the subjects was done and BMI was calculated. Blood pressure was measured. All the information's were recorded in a prefixed questionnaire. Fasting serum total cholesterol (TC), triglycerides (TG), low-density lipoprotein, high-density lipoprotein (HDL) were estimated two times in the department of clinical pathology of Dhaka Medical College, Dhaka. The subjects were asked to maintain former food habit, physical activities and type and doses of medicine (oral hypoglycemic drugs, antihypertensive or lipid lowering agent) during the course of study. Regular telephonic contact and periodic visit had made them to supply green tea and to ensure compliance with intervention. The participants were instructed to prepare a cup of green tea by dipping one tea bag of green tea in 150 ml of hot water and allowed to infuse for 3 minutes.[10] At the end of the study, 4 subject from study group and 2 from control group leave the experiment for different causes. So, finally, 22 subject from study group and 20 subject from control group had completed the study. For statistical analysis, paired students t test and unpaired student t test were performed as by using SPSS version 22.0.

- **Grouping of the subjects**:
- the sample size was divided into two groups
- Group A (control group): consisted of 20 women who did not consume green tea
- Group B (Study group): consisted of 22 women who consumed green tea for 12 weeks
- Both groups are studied two times and designated as-
  A_1: Baseline study
  A_2: After 12 weeks of study period
  B_1: Before consumption of green tea
  B_2: After 12 weeks of consumption of green tea

Results

At the beginning of the study, the baseline characteristics of all subjects (n=42) from both study group (B_1) and control group (A_1) were studied and there was no significant difference between study and control group (Table I). The baseline values of mean TC, TG, LDL & HDL of both groups (A_1 vs B_1) showed no statistically significant difference (Table II). Again, in control groups, mean TC, TG, LDL & HDL values showed no significant difference at baseline and after 12 weeks (A_1 vs A_2). But in study group, after consumption of green tea, the TC (P<0.001), TG (P=0.001), LDL (p<0.001) were significantly decreased in comparison to their baseline values (B_1 vs B_2). Furthermore, TC (P=0.035), TG (P=0.047), LDL (P<0.001) were found significantly lower in B_2 group, in comparison to A_2 group whereas HDL remain nonsignificant (A_2 vs B_2).

Table I- General characteristics of the subjects in both groups (n=42)

Parameters	Groups		*p* value
	Control group (n=20)	Study group(n=22)	
Age (year)	47.80 ± 4.33	48.81± 4.76	0.475[t]
BMI	31.62 ± 1.80	32.22 ± 2.14	0.629[t]
Systolic BP (mm of Hg)	128.40 ± 14.87	122.72 ± 6.85	0.115[t]
Diastolic BP (mm of Hg)	79.75 ± 6.97	83.86 ± 6.53	0.055[t]

Data were expressed as mean ± SD. Unpaired student's 't' test was performed for comparison. p value < 0.05 was accepted as level of significance. N = Total number of subjects, n = number of subjects in each group, t =nonsignificant,

Table II- Lipid profile in different groups (n=42)

Parameters	Groups			
	A_1 (n=20)	A_2 (n=20)	B_1 (n=22)	B_2 (n=22)
TC (mg/dl)	198.75 ± 59.00	190.75 ± 53.12	213.18 ± 48.08	161.36 ± 32.63
TG (mg/dl)	197.85 ± 76.89	187.04 ± 89.50	194.85 ± 76.89	156.68 ± 56.52
LDL (mg/dl)	168.35 ± 48.07	164.50 ± 50.02	146.81 ± 37.02	111.31 ± 26.60
HDL (mg/dl)	29.65 ± 4.45	30.05 ± 3.94	28.22 ± 4.75	29.36 ± 4.11

Statistical analysis

Groups	P value			
	TC	TG	LDL	HDL
A_1vs A_2	0.090[t]	0.539[t]	0.667[t]	0.418[t]
A_1vs B_1	0.388[t]	0.679[t]	0.110[t]	0.324[t]
B_1vs B_2	<0.001[***]	0.001[**]	<0.001[***]	0.399[t]
A_2vs B_2	0.035[*]	0.047[*]	<0.001[***]	0.585[t]

Results are expressed as mean ± SD. Paired t test was performed for comparison within groups and unpaired t test was performed to compare between groups. The test of significance was calculated & p value < 0.05 was accepted as level of significance.

n = number of subjects,
t = non significant
*/**/*** = significant
A1: Control group at baseline
A2: Control group after 12 weeks
B1: Study group at base line
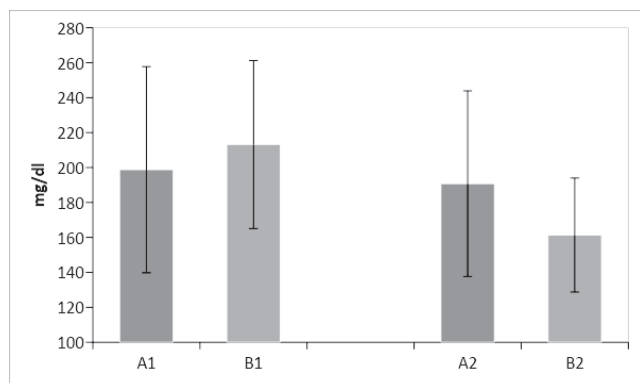B2: Study group after 12 weeks of consumption of green tea

Figure- 1: Mean total cholesterol (TC) level in different groups (n=42)

A1: Control group at baseline

A2: Control group after 12 weeks

B1: Study group at baseline

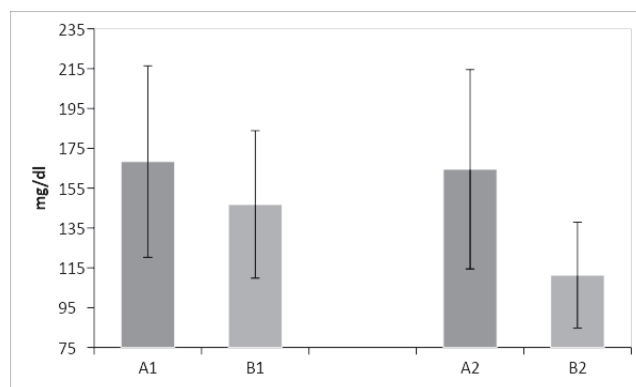B2: Study group after 12 weeks of consumption of green tea

Figure -3: Mean low-density lipoprotein (LDL) level in different groups (n=42)

A1: Control group at baseline

A2: Control group after 12 weeks

B1: Study group at baseline

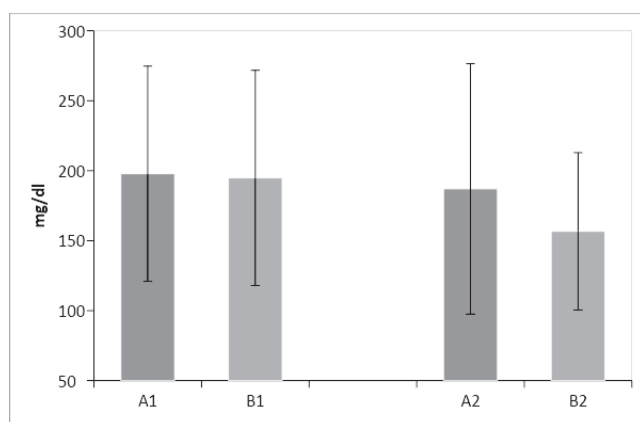B2: Study group after 12 weeks of consumption of green tea

Figure-2: Mean triglyceride (TG) level in different groups (n=42)

A1: Control group at baseline

A2: Control group after 12 weeks

B1: Study group at baseline

B2: Study group after 12 weeks of consumption of green tea

Figure -4: Mean high density lipoprotein (HDL) level in different groups (n=42)

A1: Control group at baseline

A2: Control group after 12 weeks

B1: Study group at baseline

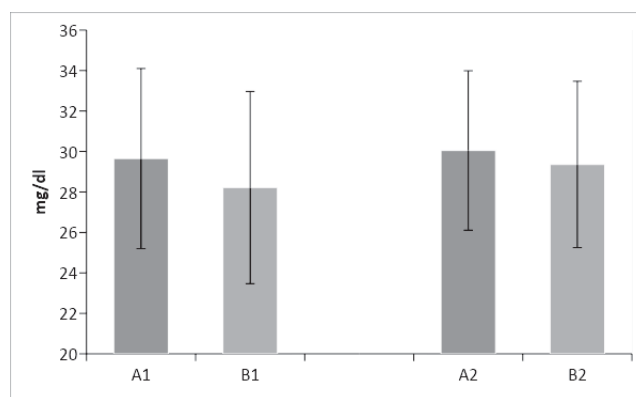B2: Study group after 12 weeks of consumption of green tea

Discussion

At the beginning (baseline) of the study TC, TG, LDL, HDL levels were almost similar and no statistically significant differences were found. After 12 weeks, the mean TC, LDL and TG were found significantly lower in study group in comparison to their base line value and to the control group. Moreover, HDL was found significantly higher in study group but remain nonsignificant in control group. The findings are supported by several studies.[10, 11, 12] Almost similar types of study were done by others that had shown varying result.[13, 14, 15] A cross sectional study on 1306 Japanese male had found that serum cholesterol level is inversely related with consumption of green tea while no association was noted with serum TG and HDL level.[16]

Several studies suggested that green tea catechins can decrease the blood lipids by interfering with its digestion and absorption process. It impedes the emulsification and micelle formation which are the essential steps of lipids digestion and absorption. The gallate esters present in catechins forms an insoluble co-precipitate of cholesterol, thus prevents the absorption of bile acid and cholesterol and increases their fecal excretion as much as 24%.[17]

This increased excretion of bile acid and cholesterol activates cholesterol 7 α-hydroxylase enzyme in liver and enhances conversion of cholesterol to bile acid to restock the loss. Decreased hepatic cholesterol content stimulates low density lipoprotein (LDL) receptor expression and increases LDL uptake from circulation and thereby decreases serum LDL level. Catechins also can reduce serum LDL level through inhibition of cholesterol synthesis. According to Hu et al. (2014), three enzymes (Mevalonate Kinase, mevalonate diphosphate decarboxylase and farnesyl pyrophosphate synthase) of mevalonate pathway of cholesterol biosynthesis can be simultaneously inhibited by green tea polyphenols. Moreover, 3-hydroxy-3-methylglutaryl, the rate controlling coenzyme of cholesterol synthesis is also inhibited by green tea. It decreases the blood triglyceride level by inhibiting activity of the enzyme pancreatic lipase and thereby slowdown its absorption. Moreover, Liver triglycerides synthesis depends on the expression of gene stearoyl-CoA desaturase (SCD 1). Green tea may suppress the expression of that gene and decrease serum triglycerides level. It also reduces the activity of acetyl-Co A which also responsible for decreased triglyceride synthesis.[5, 11, 18, 19, 20, 21]

Conclusion

After analyzing the results of the study, it can be concluded that, regular consumption of green tea may improve the lipid pattern in women.

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Case Report

Eosinophilic Ulcer of Tongue: A Case Report

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Abstract

Eosinophilic ulcer is a rare self-limiting chronic benign lesion of the oral mucosa with pathogenesis still unclear. It may resemble malignancies, traumatic ulcerations and some infections such as deep fungal infections, tuberculosis and primary syphilis. However, trauma has been found to be a contributing factor in a majority of the cases. As the condition is perhaps unknown to medical personal and due to the confusion in the literature with eosinophilic granuloma, we think the following case report deserves presentation. This is a case report of ulcerative granuloma in the lateral border of tongue with history of recurrent trauma from sharp tooth. The ulcer rapidly healed after incisional biopsy and definite diagnosis was achieved only combining histologic finding and clinical follow up.

Keywords: Eosinophilic Ulcer, Tongue

Introduction

Eosinophilic ulcer (EU) is a rare self-limiting chronic benign condition. This entity was first described in 1881 by the Italian physician, Antonio Riga, and as additional cases were subsequently published by F. Fede in 1890, it has been known as Riga-Fede disease.[1] Clinically, the ulceration has been most frequently found in tongue and it is characterized by the presence of mildly indurated borders which may resemble malignancies, traumatic ulcerations and some infections such as deep fungal infections, tuberculosis and primary syphilis.[2] EU also has been referred as traumatic ulcerative granuloma with stromal eosinophilia, traumatic eosinophilic granuloma, traumatic granuloma and ulcerative eosinophilic granuloma. In infants, usually on the ventral surface of the anterior tongue secondary to trauma from newly erupted primary teeth, EU is referred as Riga-Fede disease.[2] Trauma has been found to be a major cause. Microscopically, it is characterized by a diffuse polymorphic cell infiltrate composed predominantly of eosinophils, B and T lymphocytes, macrophages, and large atypical cells involving the superficial mucosa and extending deep into the submucosa causing degeneration of the underlying muscle.

Case Report

A 45 years old female presented with a painful ulcer on the right side of tongue since one month. She gave history of pain being moderate, continuous. There was no relief after medication. On clinical examination an ulcer was found on right lateral border of tongue opposite right first molar tooth. The ulcer was 01 x 0.5 cm in size, painful, containing borders bringing two aspects, central ulceration with white-yellow fibrous base. Patient's oral hygiene was poor and dental caries was found with sharp corner in right first molar tooth. There was no cervical lymphadenopathy. The ulcer was excised and sent for histopathology. Histopathology report revealed adjoining hyperplastic mucosa and infiltration of polymorphs rich in eosinophils in lamina propria. The patient was sent in dental department for correction of dental problem. After fifty days tongue was found completely healed.
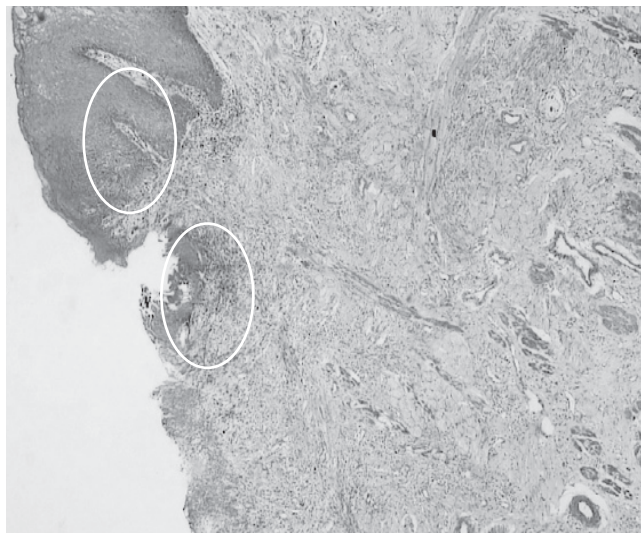

Fig-1: EU in right side of tongue

Fig-2: Polyinflammatory infiltrat

Discussion

Eosinophilic ulcer is an unique lesion with uncertain nature, aetiology and pathogenesis. Eosinophilic ulcer, traumatic eosinophilic granuloma of the tongue, traumatic granuloma, atypical histiocytic granuloma and TUGSE have been used to describe the lesion. An eosinophilic ulcer is considered to be a benign, reactive and self-limiting lesion of the oral mucosa. Trauma is considered to play a major role in the aetiology of the ulcer, however, trauma could be observed in only 50% of cases.[3] It is considered to be a benign, reactive and chronic but self-limiting reactive ulcer of the oral mucosa. Eosinophilic ulcers usually occur in the fifth and seventh decades of life with equal distribution between males and females; however, a slight male predilection was noted by Fonseca et al.[4] The entity brings several clinical differential diagnoses which include mainly malignancies, infectious diseases, autoimmune diseases or others. In this case histopathology shows the lining epithelium is partly ulcerated, the adjoining mucosa is hyperplastic and the lamina propria shows many polymorphic inflammatory infiltrate rich in eosinophil. In our case differential diagnoses included squamous cell carcinoma, non-Hodgkin's lymphoma and traumatic granuloma.

A rapid improvement of the ulcer occurred after the incisional biopsy similarly to what was described by other authors,[1,2,5] and the reason for that behavior is unknown. Accordingly to Eleni et al.[6] This behavior may be indicative that the healing response is reactivated to the surgical intervention. Different therapeutic approaches for eosinophilic ulcers have been reported in the literature, including a wait-and-see approach, antibiotics, topical, intralesional and/or systemic corticosteroids, curettage, cryosurgery and surgical excision. The most frequently performed therapy is simple surgical incision/ excision.[7] In this case after excision of ulcer and dental treatment topical steroid was given. Intralesional and systemic corticosteroids are not an option since deep fungal infection where considered as clinical hypothesis. Accordingly to el-Mofty et al.[8] in a review of 38 cases, suggest that cell-mediated immunity might play an important role in the pathogenesis of EU, since that topical, as well as systemic prednisone, is effective in the treatment of this disorder.

The latest survey reveals that these are CD30 positive cells originating from T lymphocytes. CD30 is a histological marker for lymphoproliferative disease, Hodgkin's lymphoma and RS cells. However, it also occurs in many non-neoplastic cutaneous disorders such as atopic dermatitis, adverse drug reaction, molluscum contagiosum and insects and spiders bites.[9] Segura and Pujol reviewed eosinophilic ulcer of the oral mucosa and considered it as a non-specific reactive pattern rather than a distinct entity.[10]

Surgical excision is the most commonly cited treatment procedure among the different therapies used. But surgical excision and topical steroid showed to be a reliable method with an excellent end result in this case report. Considering the benign and self-limiting behavior of EU, achieving a correct diagnosis and monitoring these patients are important to avoid possible overtreatment due to the difficulties that arise in the histopathological examination, since there is no specific hallmark of the disease and, therefore, the histopathological diagnosis of EU is by exclusion.[10] Monitoring is also important because low-grade lymphoma in routine microscopic exam, for example, may only be recognized retrospectively, when lesions recur several times, spread to other areas, or develop more pronounced malignant features microscopically.[11]

Conclusion

Diagnosis of Eosinophilic ulcer (EU) is made by the combination of clinical and histopathological features.

The pathogenesis of this condition remains uncertain and its histogenesis still remains controversial and this condition is characteristically self-limiting with a benign course. Different therapeutic approaches for eosinophilic ulcers have been reported in the literature, including a wait-and-see approach, antibiotics, topical, intralesional and/or systemic corticosteroids, curettage, cryosurgery and surgical excision. The most frequently performed therapy is simple surgical incision/excision.

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Rheumatic Fever with Concomitant Acute Post Streptococcal Glomerulonephritis in a Child: An Unusual Coincidence.

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Abstract

Rheumatic fever and post streptococcal glomeruloneoritis are both very serious consequences of rheumatogenic and nephritogenic strains of group A beta hemolytic streptococcus infections. It is a unique coincidence for both conditions to be present in a patient at the same time. We report a case of acute rheumatic fever occurring simultaneously with acute post streptococcal glomeruloneoritis in a previously well 6-year-old boy. Salient features include arthritis of multiple large joints, peri-orbital and ankle edema, oliguria, moderate poroteinuria, reduced complement (C3); and elevated streptococcal serology. The case highlights the importance of early recognition and diagnostic challenges to prevent complications that may follow if not treated.

Key Words: Rheumatic fever, Glomeruloneoritis, Post Streptococcal Glomerulonephritis, Concomitant.

Introduction

Acute Rheumatic Fever (ARF) and Acute Post streptococcal glomerulonephritis (APSGN) occurs most commonly in children aged between 5 and 15 year as a sequelae to group A beta hemolytic streptococcus (GABHS) infections as tonsillitis, pharyngitis or skin infection caused by S. pyogenes.[1] Although the co-occurrence of both in the same patient is extremely rare, several pediatric cases have been documented as literatures so far.[2-7] Here we present this interesting case of acute RF with concurrent APSGN in a 6-year-old child associated with hypertension and congestive heart failure treated successfully.

Case report

Our case was a 6-year-old boy who is a 2nd issue of non-consanguineous parents, immunized as per EPI schedule was admitted at TMSS Medical College and Rafatullah Community Hospital with the complaints of high grade continued fever for 10 days, migratory polyarthritis (Figure-1, 2, 3) not associated with morning stiffness for 5 days, passage of scanty reddish urine associated with puffiness of face (Figure-4) for 3 days and dyspnea with orthopnea for last 1 day. He had history of sore throat and skin infection one month back. He did not have any history of involuntary movement, convulsion, altered consciousness, skin rash or previous attack of similar illness. On examination he had pallor with swollen eyelids, puffy face, and bilateral ankle edema. His respiratory rate was 38/min, pulse was 120/min, blood pressure was 120/80 mm & Hg which was above 95th percentile and temperature was 100° F. His weight was 18 kg (on 25th C), height was 103 cm (on 3rd C), and Weight for Height on 75th. He had scar mark from previous skin infection, his urine was high color and heat coagulation test revealed proteinuria 2+ (Figure-5). He had multiple joints swelling (bilateral knee, elbow, wrist and ankle joints) with grade 4 tenderness, raised temp and restricted joints movement. His apex beat was shifted to the left with bilateral basal lungs crepitation. Other system examination revealed normal findings. Investigations showed microcytic hypochromic anemia (Hb-10.4 gm/dl), raised ESR (30 mm), neutrophilic leukocytosis with eosinophilia, raised CRP (28 mg/dl), raised ASO titer (800.00 IU/ml), low serum albumin-3.03 g/dl (3.5-4.8), raised 24-hour urinary total protein (0.08 gm/m²BSA/day)

and low C_3 level 0.65mg/dl (0.8-1.7 mg/dl). Urine RME shows high color, protein 2+, RBC 10-12/HPF and pus cell 3-4/HPF. His serum C_4 level, serum creatinine and electrolytes were normal and febrile antigen was negative. Chest X ray showed cardiomegaly, USG of KUB region was normal. ECG showed sinus tachycardia and Echocardiography revealed normal findings. He was diagnosed as Acute Rheumatic Fever with Acute Post Streptococcal Glomerulonephritis with Heart Failure. Treatment was initiated with Bed rest, propped up position, O₂ inhalation-2L/min with salt, fluid and protein restricted diet, Furosemide, Phenoxymethyl penicillin and high dose Aspirin. He was discharged after complete recovery 10 days later with treatment (Aspirin for 06 weeks and Benzathinepenicillin 6 lac IU Deep IM every monthly up to 21 years of age) and advised for regular follow up. At 6 months follow-up, the child remained asymptomatic with resolution of hematuria.

Figure-2: Swelling of wrist join

Figure-1: Swelling of both ankle joint

Figure-3: Swelling of both knee joints
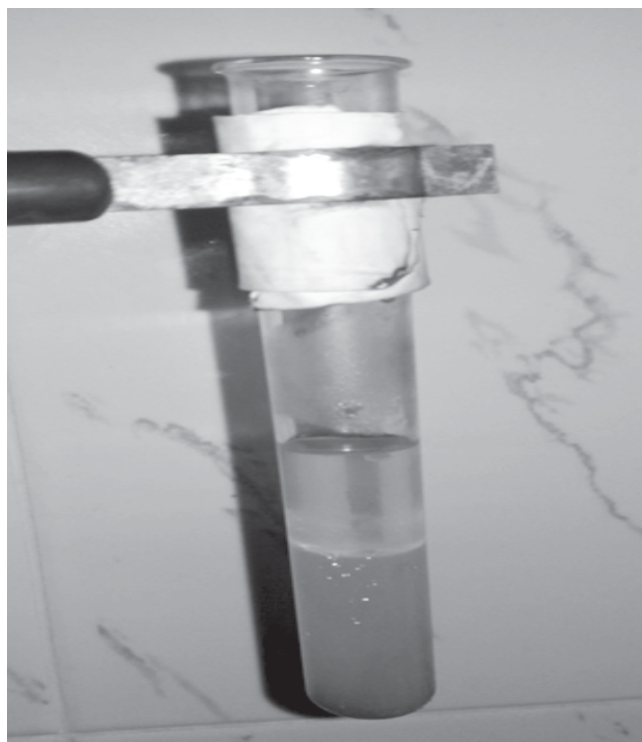
Figure-4: Puffiness of face

Figure-5: BSUA shows 2+

Discussion

The coexistence of APGN and ARF has been found in many adults over the past decades but are rarely reported in children. The explanation for the co-occurrence of both might be that certain strains have nephritogenic and rheumatogenic potential, which results in both sequels.[8, 9] In most reported cases children initially presented with features of APSGN and later on developed carditis and arthritis, however in the present case we found fever and migratory polyarthritis were the main features before appearance of edema, proteinuria and hypertension.[10] He also presented with both feature simultaneously unlike many other cases with longer duration between the two manifestations. He also developed heart failure following hypertension as a complication of APSGN which resolved by the 7th day of admission leaving no other residual cardiac lesion whereas; almost all the previous pediatric case reports had mitral insufficiency, aortic insufficiency and decreased myocardial functions confirmed by echocardiography.[2, 3, 5, 11, 12] We diagnosed ARF using the Revised Johns Criteria and treated arthritis with aspirin as the renal function was normal. There was evidence of hypertensive heart failure with cardiomegaly as a complication to APGN that resolved quickly with dietary restriction and diuretics; so the use of corticosteroids was not required. Although the serum creatinine was normal, C3 levels were moderately low with normal C4 that excludes other causes of nephritis such as; acute tubular necrosis and vasculitis.

Conclusion

This case highlights the importance of early recognition of ARF to prevent the possibility of rheumatic heart disease and infective endocarditis especially in developing countries. The co-occurrence of both APGN and ARF might create diagnostic dilemma and delay treatment which can lead to serious consequences.

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