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EDITORIAL

J Ar M Coll Cu. 2022, January; 5(1): 1-2

An Updated Perspective on the Review of the Association Between Long Term Use of Omeprazole and Osteoporosis

Jahid ABMM

It is not unusual for a consensus to be questioned, revised, or even overturned in the ever-evolving area of medical research. This is because the field is dynamic. The potential relationship between the long-term usage of omeprazole, a proton pump inhibitor (PPI) that is often given, and the risk of developing osteoporosis is a topic that has attracted increasing research over the past few years.[1]

Reyes et al. revealed that the most common reasons to prescribe omeprazole and other proton pump inhibitors (PPIs) are to treat gastroesophageal reflux disease (GERD), peptic ulcers, and other acid-related illnesses. The use of these drugs has proven to be of tremendous assistance in the management of various disorders.Concerns have been expressed, about the possible long-term implications of their use, in particular with reference to bone health.[2] A preliminary study from the two thousands patients revealed a possible relationship between long-term PPI usage and an increased risk of hip fractures. This led to the hypothesis that these medicines might induce osteoporosis. It was hypothesized that a decrease in the amount of acid produced by the stomach might prevent calcium absorption. Calcium is an essential element for maintaining healthy bones.[3] Further investigation, however, reveals a more complex web of interconnections between PPI use and the onset of osteoporosis. According to more recent research, a variety of factors—including age, gender, lifestyle factors, and concurrent medication use—are likely to be at play in this association.[4] These more recent studies do not disprove the conclusions of the older research, but they do add a layer of complexity to our comprehension of the connection between the use of PPIs and osteoporosis. It is not yet known whether PPIs are directly responsible for the development of osteoporosis. PPIs may be just one component of a much wider picture when it comes to bone health; nonetheless, it is abundantly obvious that there are numerous elements that contribute to bone health. According to Freedberg et al., the benefits of using PPIs in the management of acid-related illnesses exceed the potential risks for a large number of people.[5]

Having said that, the possible hazards connected with the use of PPIs over an extended period of time should not be ignored. It is important for patients and their doctors to make decisions together, taking into account the possible advantages as well as the hazards, and investigating alternative treatments where necessary. According to Gray et al., doing regular bone health exams for those who are receiving long-term PPI medication might act as an effective preventive intervention.[6] More in-depth study is required in order to achieve a complete comprehension of the connection between the use of PPIs and the development of osteoporosis. This involves conducting long-term research that takes into consideration a larger variety of factors as well as randomized controlled trials in order to determine whether or not there is a causal relationship between the two.[7]

In conclusion, the medical field is in a constant state of evolution and perceptions shift as new research sheds light on traditional ideas. The association between long-term use of omeprazole, a commonly prescribed proton pump inhibitor, and osteoporosis has attracted considerable attention, as suggested by preliminary research. Recent studies, however, suggest that the association may be complex, with age, gender, lifestyle, and other medications potentially playing a role. Although it is unknown whether PPIs directly cause osteoporosis, it is evident that a variety of factors influence bone health. Therefore, even though the benefits of PPIs outweigh their potential adverse effects, their long-term therapy should be monitored. Patients and physicians need to make decisions together regarding long-term medication, considering both the benefits and hazards of PPI. In the meantime, it is essential that preventive measures, such as routine bone health examinations for long-term PPI users, be implemented. This will contribute to the reduction of the potential hazards of long-term use of PPI with good outcome in patient care.

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ORIGINAL ARTICLE

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Knowledge, Attitudes and Practices about Diabetes Mellitus and Hypertension among Serving Personnel at Cumilla Cantonment Area-A Cross Sectional Study

Hamid MA[1]

Abstract

Introduction: Diabetes Mellitus and Hypertension among all non-communicable diseases (NCDs) represent the foremost cause of mortality worldwide including Bangladesh. The study objective is to assess the level of knowledge, attitudes and practices on NCDs especially Diabetes Mellitus and Hypertension using a validated questionnaire. **Methods:** A descriptive cross-sectional study was conducted among the serving population at Cumilla Cantonment Area from January 2023 to May 2023. Samples were taken purposively and 210 respondents with informed consent were selected for this study. **Results:** Among 210 respondents, 207(98.6%) were male and only 03(01.4%) were female. The mean age of the respondents was 39.35years SD±4.77. There was strong association between accommodation and family pattern (p=0.002). There was significant association between age group with income group (p=0.000), whereas there was no association between age and education group (p=0991) statistically. More than 2/3rd of the respondents (79.44%) showed good knowledge, 70.62% good attitude and > 2/3rd (86.76%) stated good practice. The mean length of service was 21.10 years and SD±5.22 whereas the mean monthly income was 39,640 taka & SD±5.22. **Conclusion:** This study identified that even with adequate knowledge, positive attitude was less than good practices towards NCDs especially Diabetes Mellitus and Hypertension. Considering the future burden of NCDs management and complication, efforts are needed to assess the factors that influences the positive attitude and healthy lifestyle practices for the prevention of NCDs, particularly Diabetes and Hypertension among the serving population at urban area like Cumilla Cantonment of Bangladesh.

Keywords: NCDs, Diabetes Mellitus, Hypertension, SD

Introduction

The enjoyment of the highest achievable standard of health is one of the requisite rights of every human being without boundary of race, religion and political belief, economic or social condition. The biological, environment, lifestyle, and organizational health care are the determinant factors of health[1]. Non-communicable diseases (NCDs) or more commonly known as chronic medical condition or illness are the result of a combination of genetic, physiological, environmental and behavioural factors[2-3] that were firmly related to the factors of health determinants. The most common non-communicable or lifestyle-related diseases are hypertension, diabetes and obesity[4]. According to the WHO report, NCDs are now recognized as a significant disease burden to a developing country including Bangladesh[5-6].Until now, even though the importance and magnitude of NCDs are increasing, there is limited data on the level of knowledge, attitude, and practice (KAP) of NCDs among the general population in Bangladesh. A literature search on knowledge about NCDs in the country has yielded very few studies. Most of the studies specifically focused on the knowledge and awareness of a more specific type of NCDs such as hypertension and diabetes mellitus[7-10]. Such data is fundamental to plan public health policies with specific reference to the implementation of the national program. By understanding the population knowledge, attitude, and practices, a better-informed policy and public-health responses to the impact of the growth in NCDs can be designed for the prevention of developing the diseases among the population in future. This survey conducted to assess the level of knowledge, attitude and practices on NCDs among serving people at Cumilla Cantonment of Bangladesh.

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Methods

A cross-sectional study conducted among serving population in Cantonment Area Cumilla. More than 20 years age group of respondents were selected for this study among210 respondents. Ethical approval was obtained from the respective highest authority of the Cumilla Cantonment and written informed consent obtained from respondents before the interview. This study was carried out using a pre-tested, modified, validated questionnaire. The study was conducted through a face-to-face interview with the respondents. The inclusion criteria for the respondents to take part in this survey were being a serving citizen at Cumilla Cantonment. Respondents excluded if they had unwillingness or suffered from DM & HTN.

Instrumentation

A detailed mixed questionnaire were used to obtain data regarding the respondents' demographic profile and chronic disease profile. For chronic disease status, presence or absence of chronic diseases was based on self-reported information previously diagnosed by medical professionals at Combined Military Hospital Cumilla. Respondents asked, followed hypertension and diabetes mellitus, to which the answer is 'yes' or 'no'[11]. Knowledge and attitude contained questions regarding NCDs especially diabetes and hypertension adapted from WHO (2017)[12]. Knowledge section covers general knowledge regarding diabetes and hypertension. In addition, questions were on risk factors, disease management and preventive factors of major NCDs that is, hypertension and diabetes mellitus. Answer options included yes/no with questionnaire. The attitude towards NCDs was assessed based on the Likert criteria 'strongly agree' to 'strongly disagree' option. For determining their practice, the respondents' exercise activity, food consumption, body weighing practice and stress management, etc. were assessed (WHO 2017)[12]. The choices of the response are 'yes,' and 'no' for practice. Following the content validity of the questionnaire by experts through a pre-test study a few corrections and amendment were made to improve the questionnaire.

Scores of KAP regarding NCDs especially Diabetes and Hypertension: Each of the knowledge, attitude and practice categories consisted of 20, 10 and 10 questions, respectively. The scoring system was adapted and modified from previous studies[13-14]. Responses of correct and wrong/unsure for knowledge section given the scores of 1 and 0, respectively. Responses of 'strongly disagree', 'disagree', 'neutral', 'agree', and 'strongly agree' based on statements about attitude were given the scores of 1, 2, 3, 4, and 5, respectively. Whereas responses of 'yes,' and 'no' for practice is given the scores of 1 and 0, respectively. The total scores converted to a percentage of KAP for categorization. Minimum scores of knowledges, attitudes and practices were 0, 10 and 0, respectively, and maximum scores were 20, 50 and 10 respectively. The knowledge, attitude and practice categorized in percentages are poor (0-50%), moderate/fair (51-75%) and good (76-100%).

The data was edited, cleaned, coded and transferred to SPSS version 27 for analysis. All descriptive data presented as percentages, means and standard deviations. Chi-Square test used to determine the association. Statistical significance set at p-values <0.05.

Results

Table I: Descriptive information on the sample population by age, gender, educational level and employment status and other characteristics of the study respondents (n = 210)

Sl.	Variables	Frequency (n) and Percentage	Remarks
1	Sex		
	Male	207 (98.6%)	
	Female	03(01.4%)	
2	Marital Status		
	Married	209(99.5%)	
	Unmarried	01(0.5%)	
3	Family Type		
	Joint	108(51.40%)	
	Single	102(48.60%)	
4	Age Group		
	<40 years	107(51.0%)	Mean=39.35
	40 years & above	103(49.0%)	SD±4.77
5	Education		
	Up to HSC	161(76.7%)	
	Above HSC	49(23.3%)	
6	Rank		
	Sainik-NCO	144(68.65%)	
	JCO	49(23.3%)	
	OFFR	17(08.0%)	
7	Service Length		
	<10 years	04(1.9%)	
	10-20 years	86(41.0%)	Mean=21.10
	>20 years	120(57.1%)	SD±5.22
8	Serving Profile		
	Fighting troops	120(57.0%)	
	Supporting & svc troops	90(42.9%)	
9	Monthly Income		
	<40 Thousamnd	139(66.2%)	Mean=39640
	40 Thousand and above	71(33.8%)	SD±11058
10	Family Status		
	Nucleus/Single family	102(48.6%)	
	Joint family	108(51.4%)	
11	Accommodation Type		
	Sanik line/ Mess	130(61.9%)	
	Quarter	80(38.1%)	

Table II: Association between various groups among the study respondents (n=210)

Sl.	Group Variables	Type of Variables	Remarks
1.	Family type	Single/nucleus family Joint family	X^2 =10.037 df =1
	Accommodation pattern	Mess/Sainik line Quarter	p = 0.002
2.	Age group	Below 40years 40years and above	X^2 =0.000 df =1
	Education group	Up to HSC Above HSC	p =0.991
3.	Age group	Below 40 years 40 years and above	X^2 =31.310 df =1
	Income group	Less than 40 thousand 40 thousand and above	p =0.000

Table III: Characteristics of Knowledge of respondents regarding DM and Hypertension among the study respondents (n=210)

		Knowledge about Hypertension and Diabetes		
Sl.	Questions	Yes (%)	No (%)	Remarks
1.	Smoking is good for Hypertension	07(3.3%)	203(96.7%)	
2.	Obesity is good for Hypertension	6(2.9%)	204(97.1%)	
3.	High Cholesterol is good for Hypertension	07(3.3%)	203(96.7%)	
4.	Anybody having Hypertension in the family	57(27.1%)	153(72.9%)	
5.	Liking of fatty food	33(15.7%)	177(84.3%)	
6.	Extra salt with the food	14(6.7%)	196(93.3%)	
7.	Having habit of taking Cold drinks with food	42(20.0%)	168(80.0%)	
8.	Anybody having kidney disease in the family	15(7.1%)	195(92.9%)	
9.	Anybody in the family has suffered with stroke	57(27.2%)	153(72.9%)	
10.	Hypertension may damage eye	175(83.3%)	35(16.7%)	
11.	Have you heard the disease named Diabetes	208(99.0%)	02(1.0%)	
12.	Do you eat more carbohydrate rich food?	78(37.1%)	132(62.9%)	
13.	Do you habituate with sedentary work?	28(13.3%)	182(86.7%)	
14.	Anybody in the family having Diabetes	90(42.9%)	120(57.1%)	
15.	Diabetes may be due to overweight	205(97.6%)	05(2.4%)	
16.	Diabetes may damage eye and kidney	192(91.4%)	18(8.6%)	
17.	Could you measure and monitor blood glucose as diabetes patient	161(76.7%)	49(23.3%)	
18.	How to measure blood glucose of diabetes patient	113(53.8%)	97(46.2%)	
19.	Diabetes could be controlled by daily exercise	207(98.6%)	03(1.4%)	
20.	Diabetes might be hereditary	188(89.5%)	22(10.5%)	

Note: Knowledge among the respondents; Good Knowledge 79.44%, Moderate Knowledge 07.29% and Poor Knowledge 13.27 %

Table IV: Characteristics of Attitude among the study respondents (n=210)

		Attitude					
Sl.	Question	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Remarks
1	Everyone should know the normal blood pressure in human body	147 70%	50 23.8%	08 3.8%	-	05 2.4%	
2	Everyone should know the normal cholesterol level in human body	130 61.9%	62 29.5%	16 7.6%	02 1.0%	-	
3	Everyone should know the normal blood sugar level in human body	116 55.2%	70 33.3%	20 9.5%	01 0.5%	03 1.4%	
4	Everyone should know normal body weight	168 80.0%	35 16.7%	05 2.4%	01 0.5%	01 0.5%	
5	Everyone should do regular physical exercise	149 71.0%	59 28.10%	-	-	02 1.0%	
6	Everyone should lead healthy life.	159 75.7%	45 21.4%	03 1.40%	01 0.5%	02 1.0%	
7	Everyone should avoid extra sugar in daily food	147 70%	57 27.1%	02 1.0%	03 1.4%	01 0.5%	
8	Everyone should avoid extra fat in daily food	148 70.5%	59 28.1%	02 1.0%	01 0.5%	-	
9	Every diabetic patient should control high BP	157 74.8%	47 22.4%	04 1.9%	-	02 1.0%	
10	Everyone should take balanced food	162 77.1%	45 21.4%	02 1.0%	-	01 0.5%	

Note: Attitudes among the respondents; Moderate attitude 70.62%, Poor attitude29.38 %

Table V: Characteristics of Practices among study respondents (n=210)

		Practice		
Sl.	Question	Yes	No	Remarks
1	Do you exercise daily minimum 20 min at least 3days in week?	208 99.0%	02 01.0%	
2	Do you play daily in the field at least 3days in week?	184 87.6%	26 12.4%	
3	Do you try to maintain normal body weight?	208 99.0%	02 01.0%	
4	Do you often take food in restaurant?	19 09.0%	191 91.0%	
5	Do you take >3tsf extra salt in your daily meal?	06 02.9%	204 97.1%	
6	Do you try to reduce mental stress?	193 91.9%	17 08.1%	
7	Do you try to know about DM and HTN from social media?	155 73.8%	55 26.2%	
8	Have you ever been tested for DM or HTN?	137 65.2%	73 34.8%	
9	At what interval you do your blood test?	65 31.0%	145 69.0%	
10	Do you exercise at regular interval?	197 93.8%	13 06.2%	

Note: Practices among the respondents; Good practice 86.76% and Poor practice13.24%

Demographic characteristics: A total of 210 respondents were involved in this interview. The complete socio- demographic characteristics of the respondents were presented in Table I. The mean age for all the respondents was 39.35 years (SD±04.77), ranging from 26 to 54 years. Most of the respondents were male 207(98.67%). More than two third of the respondents have education in higher secondary college 161 (76.70%). The mean household income was 39,640Tk (SD±11,058) among the serving personnel respondents communities at Cumilla Cantonment.

Knowledge of respondents regarding diabetes mellitus and hypertension: The knowledge of the respondents is shown in the Table III. Among the respondents 79.44% had good knowledge, 07.29% had moderate knowledge and 13.27% had poor knowledge. There was significant association between age group with income group (p=0.000), whereas there was no association between age and education group (p=0991) statistically. There was strong association between accommodation and family pattern (p=0.002).

Attitude of respondents regarding NCDs especially diabetes mellitus and hypertension: The results showed that strongly positive attitude was only 70.62%, which is closer to good attitude (76-100%) and just positive attitude was only 25.19%. As a whole no one among the respondents showed good attitude in this study.

Practices of respondents regarding NCD sespeciallydiabetes mellitus and hypertension: This study stated that most of the respondents practiced the healthy life styles regarding the prevention, control of non communicable disease like diabetes mellitus and hypertension. Only 13.24% respondents did not practice the healthy life styles against these noncommunicable diseases.

Discussion

This study sought to assess the knowledge, attitude, and practice of non-communicable diseases among selected populations at Cumilla Cantonment. Findings from this study showed the similarities with the report published by the Malaysian NHMS in 2015[6]. However, the percentages of NCDs reported in this study was higher. These might be due to most of the respondents involved in this survey were aged above 26 and the prevalence of NCD increases with age[11]. This situation is worrying as these diseases, which most commonly correlated to lifestyle is dominant. These may result in a substantial negative impact to the economy and society of developing countries including Bangladesh as the diseases usually affect people between the age group of 45 to 64 years and those in their peak lives[15].

Most of the respondents in this study showed good knowledge towards NCDs like diabetes mellitus and hypertension. Results also showed that most of the respondents had good knowledge 79.44% and practice 86.76% towards NCDs. However, most of the respondents had only moderate attitude 70.62% toward preventing NCDs activity. Several studies conducted on specific types of NCDs in Malaysia, such as on hypertension and diabetes mellitus also reported satisfactory levels of knowledge[7-9]. Contrasty, in studies[16-17]conducted in Malaysia reported the level of knowledge towards diabetes mellitus was good as also shown in my study. The attitude of urban communities regarding NCDs behavioural risk, disease management including lifestyle change and also support network is lower than rural communities. Referring the studies[18] there is a critical link between population, environment and health. The population rely on the environmental factor, which is also the factor of health determinant[1]. This limitation reduced the positive attitude on health among the urban communities. Current scientific evidence has also shown that increasing knowledge and awareness alone do not guarantee behavioural modification[10,19]. The unhealthy environment associated with a sedentary lifestyle, lack of exercise, excess dietary intake of sodium and fat and poor diet with a stressful life are challenging factors for the population to implement and maintain a good standard of living[20]. Besides, a study[21]found that living in a rural area is independently associated with adequate physical activity. Among the factors contributing to this occurrence include environmental factors such as more open and green space, the presence of enjoyable scenery in the neighborhood in addition to the elements of less traffic may influence residents to participate in a healthy lifestyle[22-23]. Knowledge does not always demonstrate a significant association between both attitude and practice, as also shown in this study. Even though their knowledge and practice for these two diseases was high, the attitude remained low, especially in this cantonment communities. Since behavioural risk factors contribute to developing NCDs, the use of public awareness, healthy diet and lifestyle education with law and regulatory enforcement to disseminate information regarding risk factors and consequences of NCDs to the target population recommended[24-25] in reducing the public health burden in the future. To increase the positive attitude and practices among respondents to undergo a healthy and balanced

lifestyle is essential[26-27]. Besides, continuous education on a healthy lifestyle and regular check-ups at all levels of age and society to increase their knowledge of the disease is beneficial. In today's world, the use of media such as social media can offer opportunities for the modification and intervention of health behaviour as it is considered as a potential tool for health promotion and education[28-29].

Limitations

Some limitations of this study shall be considered. First, this study adopts a crosssectional design which does not allow for the determination of causal effect relationships. Secondly, the study population also had only served individuals inside a cantonment. These may be, because respondents were working during the time of the survey conducted. Future research is warranted to obtain data from multiple locations of Bangladesh as this study only covered one place like cantonment Cumilla.

Conclusion

Findings from this study showed that the levels of knowledge and practice were adequate among the population of Cumilla Cantonment, but the positive attitude were low. An in-depth qualitative study is needed to understand the underlying factors for unsatisfactory attitude. Future studies are also highly recommended for a better assessment of the elements that enhance the good lifestyle behaviour in the population. Education to increase the knowledge regarding the disease and the importance of good lifestyle practice are also essential to reduce the prevalence of NCDs especially diabetes mellitus and hypertension in this community.

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ORIGINAL ARTICLE

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Outcome of Silicone Oil Removal after Vitrectomy Surgery: A Study of 50 Cases in a Tertiary Eye Hospital, Dhaka

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Abstract

Background*:* The use of silicone oil for the treatment of retinal detachment has become a standard technique and improves the prognosis of complex retinal detachment. The purpose of silicone oil as vitreous substitute is to provide short to long term internal retinal tamponade in the management of complex retinal detachment, proliferative vitreoretinopathy, diabetic retinopathy, giant retinal tear, ocular trauma and different retinal conditions. After removal of silicone oil, outcome is assessed by improvement in visual acuity, reduction in intraocular pressure and less number of post surgical complications. **Objectives:** Objective was to determine anatomic status of retina, evaluate visual outcome, changes of intraocular pressure and presence of other complication after removal of silicone oil. **Material and Method:** A follow up prospective study was conducted to determine the outcome of silicone oil removal after vitrectomy surgery. The study was conducted in between October 2010 to September 2011, over a period of 12 months at Ispahani Islamia Eye Hospital, Dhaka. Patients were selected who underwent pars planavitrectomy with silicone oil tamponade earlier for variable durations and indications and came for silicone oil removal surgery. Inclusion criteria included patients with vitrectomy surgery with silicone oil tamponade who required silicone oil removal for emulsification alone, emulsification associated with elevated IOP and varying degree of keratopathy. Ages between 11 to 80 years were included. Exclusion Criteria were unwilling to participate, patient with posterior segment open globe trauma and those who underwent multiple retinal surgeries. Both male and female of total 50 cases were taken for the study. Patients were followed up at 3 months, 6 months and 12 months.Visual acuity recording, IOP measurement, anatomical status of attached and re-detached retina and other complications were noted for assessment in each followup visits. **Results:** After silicon oil removal VA improved in 50% cases, remained unchanged in 30% cases and worsened in 20% cases. After removing silicone oil retina remain attached in 76% cases and retina detached in 24% cases at 12 months follow up. In our other important parameter of study regarding IOP, before oil removal 56% patients had IOP >21 mmHg which was decreased to 10% after oil removal. On the other hand before silicone oil removal only 24% patients had IOP <21 mmHg and after oil removal 90% patients IOP was <21 mmHg. **Conclusion:** Silicone oil is used in different retinal conditions but due to long term complications associated with silicone oil, it is recommended to remove after certain period though there are no strict standard criteria for timing of removal. Our observations are, it is standard and acceptable with the finding of a slightly low level of visual acuity and higher redetachment rate. Other complication rates are almost similar to other studies carried out in different established retinal surgery facilities all over the world.

Keywords: Siliconeoil, Retinaldetachment, Visualacuity, Intraocular Pressure.

Introduction

The use of silicone oil for the treatment of otherwise inoperable retinal detachment (RD) was first described by Cibis et al in 1962.[1] Scott and Zivojnovic modified this technique and encouraging results were reported by many other surgeons.[2-7] The commercial production of medical grade silicone oil for ophthalmic use is almost not existing.[8] Currently, most of silicone oil is used by vitreo retinal surgeon are of industrial origin. The purpose of silicone oil as vitreous substitute is to provide short to long term internal retinal tamponade in the management of complex retinal detachment, proliferative

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vitreoretinopathy (PVR), diabetic retinopathy, giant retinal tear and ocular trauma. Combined with vitreoretinal surgery, silicone oil injection improved the prognosis of complex RD. Silicone oil has become the popular tamponading agent though its use is not without some complication. As silicone oil leads to long term complications, removal of silicone oil from the eye is recommended. As the retinal reattachment rate does not appear to be influenced by the duration of intraocular silicone oil, it seems reasonable to remove the oil as early as possible to avoid or minimize its complications.[9-11] In our country not many studies have been carried out regarding long term complications of silicone oil in vitrectomized eye and outcome of retinal surgery after removal. Our study was conducted with the idea whether the outcome after silicone oil removal in a tertiary eye care centre in our country is within the expected range of other studies carried out worldwide or not. Objective was to determine anatomic status of retina, evaluate visual outcome, changes of intraocular pressure and presence of other complication after removal of silicone oil.

Material & Method

A follow up study was carried out to determine the outcome of silicone oil removal after vitrectomy surgery and attributes associated with vitrectomy surgery in Ispahani Islamia Eye Hospital, Dhaka. Patients were selected purposively who underwent pars planavitrectomy earlier for different indications and received silicone oil tamponade for variable durations. Silicone oil removal indication in these patients were emulsification alone or combined with complications like raised intraocular pressure (IOP), cataract or keratopathy. Patients visual acuity (VA), IOP, retinal anatomical status and presence of any complications were documented by detailed ocular examination. These patients underwent silicone oil removal alone or combined cataract removal with IOL implantation or secondary IOL in aphakic eyes. Patients were followed up at 03 months, 06 months and 12 months. Visualoutcome, anatomical stability, reduction in IOP and presence of other complications were assessed at each follow up.

Results

A total 50 adult male and female were selected according to selection criteria. Indication for vitrectomy with silicone oil tamponade in patients with RD with proliferative vitreo retinopathy and RD associated with intraocular foreign body constitute the same proportion 15(30%) followed by retinal RD due to complication of proliferative diabetic retinopathy 13(26%) and RD associated with endophthalmitis 2(14%). In 60% cases only silicone oil removal was done. Combined oil removal with cataract extraction with IOL was done in 30% cases and another 10% cases combined oil removal with IOL implantation in aphakic eye. Majority of the patients had final VA 1/60 to 3/60 after silicone oil removal at 12 months (54%). On the other hand VA was 6/24 to 6/60 and finger counting in 30% and 10% cases respectively. Only 4% patients had perception of light and another 2% had VA 6/6 to 6/18 at final follow up at 12 months (Table I). After silicon oil removal VA improved in 50% cases, remained unchanged in 30% cases and worsened in 20% cases (Table II). After removing silicone oil retina remain attached in 76% cases and retina detached in 24% cases at 12 months follow up (Table III). In our other important parameter of study regarding IOP, before oil removal 56% patients had IOP >21 mmHg which was decreased to 10% after oil removal. On the other hand before silicone oil removal only 24% patients had IOP <21 mmHg and after oil removal 90% patients IOP was <21 mmHg. (Table IV)

Table I: Comparison of visual acuity before and after (12 months) silicone oil removal

Visual acuity/ Snellen's eye chart	No. of patient before oil removal	Percent (%)	No. of patient after oil removal	Percentage
6/6-6/18	1	2	1	2
6/24-6/60	12	24	15	30
1/60-3/60	24	48	27	54
Finger counting	10	20	5	10
Perception of light	3	6	2	4

Table II: Visual acuity improvement after silicon oil removal

Visual Acuity (VA)	No of cases	Percentage (%)
VA improved	25	50%
Remained unchanged	15	30%
Worsened	10	20%

Table III: Anatomical status of retina at 12 months after removing silicone oil

Anatomical s1tatus	No. of patients	Percentage (%)
Retina remain attached	38	76
Retina detached	12	24

Table IV: Comparison of Intraocular Pressure before and after silicone oil removal

Intraocular pressure	No. of patient before oil removal	Percentage (%)	No. of patient after oil removal	Percentage
>21 mm Hg	28	56	5	10
<21 mm Hg	22	24	45	90

Discussion

This is a prospective, non-randomized, follow up study of 50 eyes of 50 patients who had vitrectomy with silicone oil tamponade for various indications. All patients underwent silicone oil removal alone or with cataract removal with IOL implantation in phakic and secondary IOL in few aphakic eyes at variable durations. Cases were followed up at 3 months, 6 months and 12 months after removing oil. Our study was carried out to identify the standard outcome success of silicone oil removal after vitrectomy surgery in a tertiary eye care centre in our country. Among the study subjects majority (40%) were in the 31 to 50 years age group. Most of the patients were male 45(90%). Muhammad Kamran Khalid et al in a study of 50 cases of rhegmatogenous retinal detachment found 39 (78%) were male and 11 (22%) were female patients.[10] In our study less than one third of the patients had aphakic eye (30.0%). In 60% cases only silicone oil removal was done. Combined oil removal with cataract extraction with IOL was done in 20.0% cases and another 20.0% cases received combined oil removal with IOL implantation in aphakic eye. In our study population indication for vitrectomy with silicone oil tamponade was15 (30%), in patients with RD with proliferative vitreoretinopathy, RD associated with intraocular foreign body 15(30%), RD due to complication of proliferative diabetic retinopathy 13(26%) and RD associated with endophthalmitis 7(14%). VA was 6/6 to 6/18 in 2% patients, 6/24 to 6/60 in 24%, 1/60 to 3/60 in 48% cases , finger counting and perception of light was in 20% cases before silicone oil removal. Eyes were only graded as improved or deteriorated when VA changed two or more lines using the Snellen eye chart. In our study after silicone oil removal VA improved in 30% cases, remained unchanged in 50% cases and worsened in 20% cases. Decreased level of VA was related to underlying primary disease, multiple previous surgical processes undergone, initial poor VA and irreversible retinal changes due to long term RD and effect of raised IOP. This result conforms with study of Berker N et al though our visual outcome is less satisfactory.[11] The reduced rate of VA improvement in our study was considered for few reasons which included the primary disease progressed considerably before patient reported for management like retained intraocular foreign body, proliferative diabetic retinopathy and proliferative vitreo retinopathy and long duration of detached retina. Patients initial VA affected final acuity level. Patient compliance in post operative follow-up in our country is less satisfactory which caused progression of complications. Long duration of RD, multiple surgical procedures, irreversible damage to retinal photoreceptor and ganglion cells and high IOP all resulted in lower VA. A non randomized study showed that overall, 34.2% of the eyes experienced improvement of VA following silicone oil removal. In another study author found VA improved or remain unchanged in 93 eyes (80.9%) out of 159 eyes.[12,13] Jiang F, et al. reported in their study the VA increased in 52/94 eyes (55%) and decreased in 30/94 eyes (32%), when compared with VA before silicone oil removal.[14] Re detachment of retina after silicone oil removal is common. A fewer than half the detachments occur within the first weeks. A study showed retina remained attached in 42 (84%) eyes during the first week after the removal of the silicone oil.[15] However re-detachment occurred in 11 eyes (22%) with macula off in 4 eyes within the first month of the follow-up. Of these 19 (38%) eyes in which re-detachment occurred, 7 underwent further operations. In our study group retina was attached in all patients before removing silicone oil (100%). After removing silicone oil retina remain attached in 76% cases and retina detached in 24% cases within 12 months follow up duration. After silicone oil removal retinal re-detachment was in 10% patients with RD with proliferative vitreo retinopathy, in 4% patients with RD with IOFB, in 10% patients with RD due to complication of proliferative diabetic retinopathy. In one study by Federman JL et al, frequency of retinal redetachment after removal of silicone oil was 27.6% in patients operated on for proliferate vitreoretinopathy, and it was 15% in patients operated on for proliferate diabetic retinopathy.[16] In their study reported complete retinal attachment rate in 95 eyes out of 115 eyes (82.6%). Re-detachment occurred in 20 eyes (17.4%) mostly within first six months after silicone oil removal. The rate of retinal re-detachment is independent of the technique of silicone oil removal and duration of silicone oil endotamponade.[17] The reported incidence of re-detachment varies between 0% and 32%.[9-11] Other authors report similar results or higher failure rates.[12,13]

Our study report of re-detachment rate lies within the range of other studies carried out in different places. Retinal re-detachment after removal of silicone oil endotamponade can occur in approximately a fourth of patients, depending on the criteria to use and to remove silicone oil.[18] Intraocular pressure was >21 mm Hg in 56% cases and <21mm Hg in 44% cases before silicone oil removal. After removal of silicon oil intraocular pressure was > 21 mm Hg in 10% cases and <21 mm Hg in 90% cases. One study by Darakhsh and Khurram showed that prior to silicone oil removal 52.4% had elevated IOP (i.e. e"21mmHg).[19] After silicone oil removal, IOP remained high in only 9.8%. Our study findings are within the expected range of favourable outcome.

Conclusion

Pars plana vitrectomy with silicone oil is used in different retinal conditions. But due to long term complications associated with silicone oil it is removed after certain period though there is no strict standard criteria for timing of silicone oil removal. In our study we tried to find out the outcome after silicone oil removal in regards to VA, anatomical success rate and re-detachment, reduction in IOP in a tertiary eye care centre in our country. Our observation is VA level achieved post surgical oil removal is slightly lower and re-detachment rate and reduction of IOP is higher when compared with other studies showing post silicone oil removal success rate. Overall the outcome in our tertiary eye care centre, after silicone oil removal is satisfactory in comparison to global standard.

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ORIGINAL ARTICLE

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Outcome of Bile Duct Injury after Laparoscopic Cholecystectomy in CMH, Dhaka

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Abstract

Background: Common bile duct injuries represent a serious and challenging surgical complication which leads to significant post-operative morbidity and mortality. This study was designed to assess the management and outcome of bile duct injury after laparoscopic cholecystectomy in patients admitted at Combined Military Hospital (CMH), Dhaka. **Methods**: This descriptive type of cross-sectional study was conducted at the Department of Hepatobiliary surgery in CMH, Dhaka from 16th April 2019 to 16th October 2020. Written informed consent was obtained from each patient. Total 40 patients with post-cholecystectomy bile duct injuries were included in the study. All patients were evaluated with detailed history taking and clinical examinations and biochemical investigations. Analysis of peri-operative management of post-cholecystectomy bile duct injuries and their outcomes were done. Collected data was analyzed by the SPSS 20. **Results**: Among 40 patients, 65% of the respondents were female with mean age 47.33±8.13 years. Mean BMI of the patients was 25.33±1.29. A total 67.5% of the patients were suffering from chronic-cholecystitis. Apart from abdominal pain in 62.5% patients, other presentation was biloma 37.5% and external biliary fistula 25%. Of all, 75% were managed by Roux-en-Y hepaticojejunostomy. Overall successful outcome was 72.5% with minimum complications. Among the complications, stricture and septicemia were common and was present in 10% of the cases. **Conclusion**: About 75% of the patients were managed by Roux-en-Y hepaticojejunostomy with minimum complications.

Key words: Bile duct injury, Management, Complication

Introduction

The procedure of choice for the management of symptomatic cholelithiasis is now through laparoscopic cholecystectomy (LC).[1] It has distinct advantages over open cholecystectomy, for its minimal invasiveness, allowing patients to go back promptly to their preoperative functional condition with minimal postoperative pain, shorter hospital stay and improved cosmetic results. This explains why, of the more than 750,000 cholecystectomies performed annually in the United States, laparoscopic cholecystectomy now accounts for greater than 85% of the total. It is not without its disadvantages. Bile duct injury (BDI) following cholecystectomy is an iatrogenic catastrophe associated with significant perioperative morbidity and mortality, reduced long-term survival and quality of life, and high rates of subsequent litigation.It should be regarded as preventable. In open cholecystectomy, the incidence of bile duct injuries was maintained at a low rate of 0.1% to 0.2%.[2] With the advent of laparoscopic cholecystectomy a resurgence of interest in bile duct injury and its subsequent management has taken place over the last two decades. Population-based studies suggest a significant increase in the incidence of injury (0.1%-0.5%) following the implementation of the

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laparoscopic approach. Several studies showed the rate of iatrogenic bile duct injuries sustained during laparoscopic cholecystectomy to be as high as 0.8% to 1.4%.[3] Although the rate of laparoscopic complications is related to the experience of the surgeon, with the incidence of bile duct injuries being the highest during the early portion of the learning curve, there remains a significant rate of bile duct injury which is 4 times higher than that of open cholecystectomy. Biliary injury resulting in bile leak is among the most common complications of cholecystectomy, regardless if it is done traditionally or through laparoscopy.[4,5] Biliary leakages have increased after the development of laparoscopic cholecystectomy (LC) by up to 3%.[6,7] A biliary leak can be defined as leakage of bile from any site in the biliary tree, including the liver, hepatic ducts, cystic duct or common bile duct.[8] Bile leaks arise most commonly from the cystic duct stump or aberrant branch of the right hepatic duct (duct of Luschka) leading to bile leak or biliary peritonitis after cholecystectomy. The consequences of bile duct injuries might have some severe consequences for some of the patients. Apart from early post-operative complications there is also a risk of long term sequel as stricture of the common bile duct and repeated attack of cholangitis. In addition such injuries represent a vast economic burden to the society and also represent high rate of medico legal claims.[9] Increasing evidence suggests that such injury should be managed by an experienced hepatobiliary surgeon and that early recognition of injury directly affects outcome.[10] Patients treated by the injuring surgeon have an increased risk of death of 11% at 9 years, yet in North America 58%-75% of injuries are still repaired by the injuring surgeon.[11] Significant delays in referral to the appropriate services and in the UK over half the patients still undergo attempted repair by inexperienced surgeons. If major bile duct injury (MBDI) occurs, then it requires a skilled and experienced hepatobiliary surgeon at a tertiary referral center. Collaboration with surgeons, interventional radiologists and gastroenterologists is usually necessary for the care of such injuries. Therefore the surgical management of bile duct lesions is afterward required to resolve this issue. However, surgical management has been associated with high mortality and morbidity. Endoscopic procedures are now-a-days mostly used in the management of postoperative bile duct injuries. There are several endoscopic techniques such as biliary stent placement, biliary sphincterotomy, and nasobiliary drainage.[12] It has been observed that endoscopic therapy can reduce the transpapillary pressure gradient. Moreover, during endoscopic procedures the transpapillary flow is improved and as an additional effect, the extravasation out of the biliary tract is reduced. Control of sepsis in a patient with bile duct injury is the number one priority. Peritoneal/ biliary sepsis can be accomplished through USG or CT guided percutaneous drainage of peritoneal bile. Afterwards an endoscopic stenting for bile diversion and stoppage of ongoing leak could be done followed by an isotope hepatobiliary scan. Once sepsis is controlled a complete cholangiogram should be obtained through MRI to delineate biliary anatomy and detection of extent and nature of the injury. Early recognition, good surgical technique and adequate multidisciplinary approach in a tertiary care center are the cornerstones for good outcome.

Materials and Methods

This is a descriptive type of cross-sectional study conducted in department of Hepatobiliary surgery, CMH Dhaka. Patients with bile duct injury after laparoscopic cholecystectomy are the study population. Fourty cases >18 years of age of both sexes were included who were willing to participate in this study. The exclusion criteria was prior repair of bile duct injury done, strictured hepaticojejunostomy, malignancy, pregnant women, severely ill, not willing to participate. Post cholecystectomy bile duct injury is classified by two methods i.e Bismuth classification and Strasberg classification. In Bismuth classification Type 1: Low CHD stricture, with a length of the common hepatic duct stump of >2cm, Type 2: Proximal CHD stricture – hepatic duct stump <2cm, Type 3: Hilar stricture, no residual CHD, but the hepatic ductal confluence is preserved, Type 4: Hilar stricture, with involvement of confluence and loss of communication between right and left hepatic duct, Type 5: Involvement of aberrant right sectoral hepatic duct alone or with concomitant stricture of the CHD. In Strasberg classification Type A: Cystic duct leaks or leaks from small ducts in the liver bed, Type B: Occlusion of a part of the biliary tree, almost invariably the aberrant right hepatic ducts, Type C: Transection without ligation of the aberrant right hepatic ducts, Type D: Lateral injuries to major bile ducts, Type E: Subdivided as per Bismuth classification into E1 to E5.[14,19]

Result

Mean BMI of the patients is 25.33±1.29. The mean BMI between male and female patients were non-significant. Total 40 patients were included in this study for laparoscopic cholecystectomy. Among 40 patients majority 26(65%) were female and 14(35%) were male. Mean age of the patients were 47.33±8.135 years. Among males mean age was higher (48.85±6.58 years) compared to female patients (46.5±8.87)

Table I: Distribution of patients according to age and BMI (n=40)

Age groups	Male		Female	
Age in Years	Number	Percentage	Number	Percentage
18-30 years,	0	o	2	7.7
31-40 years	1	7.1	4	15.4
41-50 years	7	50	12	46.2
51-60 years	5	35.7	6	23.1
61-70 years	1	7.1	2	7.7
Total	26(65%)		14(35%)	
Mean Age(years)	48.85±6.58		46.5±8.87	
Mean BMI	25.21±1.67		25.38±1.06	

(table I). Majority of the patients were suffering from chronic-cholecystitis. Patients had multiple post cholecystectomy presentations. Abdominal pain was in 25(62.5%) patients, apart from abdominal pain most of the patients had delayed presentation of bile collection 15(37.5%) following laparoscopic cholecystectomy. Very few 3(7.5%) had acute presentation of bile duct injury. According to Strasberg classification majority was having Type E3 bile duct injury. According to Bismuth classification majority 10(25%) of patient's bile duct injury was hilar stricture, no residual CHD, but the hepatic ductal confluence was preserved. Out of 40 patients 30(75%) were managed by Roux-en-Y hepaticojejunostomy. One patient undergoing under trial dissection was included in the others category. Patient's outcome following treatment was uncomplicated and complete recovery was 72.5%.

Table II: Diagnosis of the patients (n=40)

Diagnosis	Frequency	Percentage
Chronic cholecystitis	27	67.5
Acute cholecystitis	10	25
Other (polyp, cholesterosis, anastomosis)	3	7.5

Table III: Post-cholecystectomy presentation (n=40)

Presentation	Frequency	Percentage
Acute Bile duct injury	3	7.5
Abdominal pain	25	62.5
Postoperative jaundice	6	15
Bile collection	13	32.5
External biliary fistula	10	25
Delayed Stricture	8	20

Table IV: Strasberg classification (n=40)

Classification	Frequency	Percentage
Type A	9	22.5
Type C	5	12.5
Type E2	4	10
Type E 3	10	25
Type E 4	7	17.5
Type E 5	5	12.5
Total	40	100

Table V: Bismuth Classification (n=26)

Classification	Frequency	Percentage
Type 1	0	0
Type 2	4	10
Type 3	10	25
Type 4	7	17.5
Type 5	5	12.5

Table VI: Overall Management of the patients (n=40)

Management	Frequency	Percentage
Roux-en-Y hepaticojejunostomy	30	75
Endoscopic stenting	2	5
Percutaneous drainage only	2	5
Exploratory laparotomy only	1	2.5
Primary repair on T tube	2	5
Percutaneous trans-hepatic biliary drainage	2	5
Others	1	2.5
Total	40	100

Table VII: Outcome following treatment (n=40)

Outcome	Frequency	Percentage
Uncomplicated	29	72.5
Wound infection	2	5
Stricture	4	10
Septicemia	4	10
Death	1	2.5
Total	40	100

Discussion

The advantages of minimally invasive surgery undoubtedly have enabled the laparoscopic procedure to emerge as superior over conventional open cholecystectomy.[16] Despite the progress made in the laparoscopic surgical technique and the extensive experience of different teams, cholecystectomy is still associated with BDI with an increasing incidence. This dangerous and sometimes life-threatening complication can range from a small lateral injury requiring only conservative management to complex complications associated with vascular injury and requiring liver transplantation. Anatomical variations, advanced age, male gender and acute cholecystitis is associated with increased risk.[17,18] Initial presentation of a missed BDI can be subtle due to nonspecific symptoms. Any patient who does not rapidly recover after cholecystectomy should be critically evaluated. Any fever, abdominal pain, persistent vomiting or tachycardia should not be ignored especially if the drain has not been placed. If a drain has been put in, presence of bile is a telltale sign.[15] The management and outcome of BDI depend on injury localization, the extent of the lesion and possible associated injuries. Bismuth classification and Strasberg classification are two popular classification to evaluate prognosis following repair.[14,19] The spectrum of interventions currently available, ranges from endoscopic stent placement, computed tomography (CT)-guided drainage to various surgical reconstructive strategies.[20] In majority of the cases Roux-en-Y hepaticojejunostomy is more commonly performed.[21] The aim of the study was to evaluate the outcome of BDI after Laparoscopic cholecystectomy. The study was done among 40 patients who had bile duct injuries following laparoscopic cholecystectomy that were performed in CMH, Dhaka. Ahmed Taki-Eldin found majority respondents mean age was 49.35±8.68 years which corroborates with present study.[22] Similarly, in N. Al Hajjar et al study, median age was 42 years.[23] Among total study population, 26(65%) were female and 14(35%) were male. In a study Eldin AT et al. found 78.5% females dominance.[22] George Bazoua, also found female dominance 72.6% in another similar study.[1] Laparoscopic cholecystectomy rate is higher for females have also been reported by other investigators.[13,17] In this study, mean BMI of the patients is 25.33±1.29. Keriimoglu RS, et al. found no significant difference with BMI differing from this study.[26] Majority of the patients were suffering from chronic-cholecystitis (67.5%), 25% suffered from acute cholecystitis. In a study, Keriimoglu RS et al. found 27.7% patients underwent LC for acute cholecystitis similar to this study.[26] Krahenbuhl SL, et al. also found in chronic-cholecystitis incidence was higher in comparison to others like acute cholecystitis, gallstone, polyp.[24] In a study, Krahenbuhl L, et al. found patients underwent LC predominantly for symptomatic cholelithiasis in 77.1%, acute cholecystitis in 18.2%, and some less frequent indications were biliary pancreatitis, polyps.[24] Among total study population according to Strasberg classification majority was Type E3 bile duct injury followed by type A. Similarly, Keriimoglu RS et al. also found that injuries of Strasberg Type A and C were significantly more frequent in the non-surgical intervention group ($P = 0.016$, $P = 0.044$) whereas Type E2 was more frequent ($P < 0.001$) in the definitive surgery group.[26] In another similar study by L. Sulpice et al, Strasberg classification Type E3 was the major type.[25] The clinical manifestation of post cholecystectomy showed that most patients presented with abdominal pain in 25(62.5%) cases. Apart from abdominal pain most of the patients had delayed presentation of bile collection 15(37.5%) following laparoscopic cholecystectomy. Very few 3 (7.5%) had acute presentation of bile duct injury. Mishra PK et al. in his study found that external biliary fistula and bile collection were the two most common presentations after bile duct injury.[13] Biliary anatomy should also be thoroughly investigated before any attempt at surgical repair. The goal of surgical repair of the injured biliary tract is restoration of a durable bile conduit, and prevention of short and long term complications. Among the respondents most of them were managed by Roux-en-Y hepaticojejunostomy (75%). Endoscopic stenting, percutaneous drainage, Primary repair on T tube and percutaneous trans-hepatic biliary drainage was done among 5% respondents. Corresponding to this study, L. Sulpice et al also found similar result. Here 66 % respondents underwent Roux-en-Y hepaticojejunostomy and it was the most commonly performed procedure in this study. Different surgical reconstructions are performed in patients with BDI. According to the available literature,

Roux-en-Y hepaticojejunostomy is the most frequent surgical reconstruction and is recommended by most authors.[21] Similar to this present study, in Pramod Kumar Mishra et al study, Roux-en-Y hepaticojejunostomy was the most commonly performed procedure followed by Endoscopic stenting.[15] Only 25%–32.4% of injuries are recognized during operation, which is considered as the best time to perform repair. In this study, majority of the patient's outcome following treatment was uncomplicated (72.5) and recovery was complete. Stricture and septicemia were present in 10% case, wound infection in 5% cases. Death was found in only 2.5% cases. Similarly in Viste A et al. studied, mostly were uncomplicated case (71.6%) though the wound infection rate was very few (1.5%) in compare to current study.[15] Pekolj J, et al. also found similar postoperative complications rate (29.4%) and stricture rate (11.7%) with this study.[27] In this study death rate (4%) was also higher than present study.[26] Intra-abdominal abscess, recurrent cholangitis and secondary biliary cirrhosis may also developed reported by other authors.[16]

Conclusion

To assess management options and treatment outcome of post-cholecystectomy bile duct injuries and their outcome, the study considered total forty cases. Of all, female participants were higher in number with average of forty-seven years. Among the different management options, two third of the patients were managed by Roux-en-Y hepaticojejunostomy. Overall successful outcome was 72.5% with minor rate of complications. Among the complications, stricture and septicemia were more frequently found among the population. However, further larger study is recommended regarding this topic.

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ORIGINAL ARTICLE *J Ar M Coll Cu. 2022, January; 5(1): 20-25*

Outcome of Caudal Epidural Steroid Injection in Management of Spinal Canal Stenosis: Study of Fifty Cases

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Abstract

Background: Morbidity associated with chronic low back pain and its associated management is high. The etiology of chronic low back pain remains unclear in many cases. Inflammatory reaction, Disc degeneration, Herniation could be responsible for low backache. The physical, psychological and socioeconomic burden of low back pain is enormous. In elderly people lumbar spinal stenosis is a common cause of spine-related disability. Narrowing of the spinal canal and nerve-root compression can cause back and leg pain along with lower-limb numbness and weakness. The treatment of symptomatic lumbar stenosis remains controversial. Canal stenosis is the leading reason for spinal surgery in older adults. Epidural glucocorticoid injections are widely used to treat symptoms of lumbar spinal stenosis. However, enough data are lacking regarding the effectiveness and safety of these injections. **Objective:** The purpose of this study is to assess the efficacy of steroid via caudal route in terms of pain relief and regain of activity of daily living in lumbar spinal canal stenosis patients. **Materials and Methods:** A Prospective observational study method was followed. Consecutive 50 patients of low back pain with radiculopathy who received caudal epidural steroid injection were observed over a period of 6 months. They were evaluated and followed up with Japanese Orthopaedic Association (JOA) Score at pre-injection and01, 03 and 06 month post injection. **Results:** Fifty patients with lumbar canal stenosis treated with epidural steroid injection were examined periodically and data was recorded as per Japanese Orthopaedic Association (JOA) Score. Improvement of JOA score of 80% of the patients were detected at 01 month assessment. At 01 month scores of 20% of the patients were poor. At 3 months follow-up JOA score analysis of the patients showed improvement of 84% and at 6 months 86% of the cases. In our study caudal steroid injection was found to be effective on 06 months follow-up. **Conclusion:** Caudal epidural steroid injection is a safe and efficient treatment method for the patients who have radicular pain not responding to conservative treatment. Randomized double blind studies are needed to assess its superiority to other conservative methods.

Keywords: Chronic low back pain; Lumbar epidural steroid applications; Lumbar Spinal canal stenosis.

Introduction

Low back pain (LBP) is the most common problem seen in orthopedic out-patient clinic. It could be acute or chronic. Chronic LBP is defined as persistent or fluctuating pain that lasts longer than 3 months. LBP can be categorized into: 1. Back pain associated with symptoms and signs of radiculopathy or spinal stenosis, 2. Back pain related to a non-spinal source, 3. Back pain associated with a specific spinal cause, 4. Back pain without a specific or definitive cause. Lumbar spinal canal stenosis (LSCS) is a reduction in the dimensions of the central or lateral lumbar spinal canal. The normal cross-sectional area of

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the lumbar canal is 150–200 sq. mm. Absolute central canal stenosis is defined as a decrease in the midsagittal lumbar canal diameter of less than 10 mm, whereas 10–13 mm represents relative stenosis. Decrease in cross section area of less than 100 square mm is a more reliable indicator of the combined central and lateral lumbar stenosis. The lateral portion of the lumbar canal is divided into three zones: (a) the lateral recess, (b) foraminal zone and (c) extra-foraminal zone.[1] Global mean overall prevalence of low back pain is 31.0% with women and age group of 40-80 years having highest prevalence.[2] It causes considerable disability and loss of work resulting in significant individual, social and economic burden worldwide.[3] Chronic axial and/or radicular low back pain, the most frequently encountered complaint in general orthopaedic practice, has a wide range of treatment options.Various conservative and surgical treatments have been used with varying success. Non-surgical treatment of chronic low back pain covers a wide range of alternatives comprising physiotherapy, manipulations and other manual methods of traction. Lumbar epidural steroid applications and surgical methods can be used when the conservative methods fail to satisfy the patients. Inflammation plays an important role in the formation of pain especially related to discopathy. Epidural steroid applications can be used to suppress inflammation and this allows the patient to continue the daily activities in the early period. Epidural steroid injections are the most commonly performed procedures for the relief of lumbosacral radicular pain. They may be performed to deliver steroids or local anesthetics to the site of pathology in the epidural space via a transforaminal, interlaminar, or caudal approach. Surgical treatment is considered in patients who do not respond to this nonsurgical treatments.[4] Lumbar spinal stenosis is the leading reason for spinal surgery in older adults.[5] Surgical treatment in the form of discectomy has complications like persistence of back pain, infection, postoperative adhesions and mechanical instability. There is 4% risk of worsening of symptoms after a lumbar discectomy.[6] For more than 50 years epidural steroids are being used for management of prolapsed lumbar disc. The three most common approaches used are interlaminar, caudal and transforaminal.[3] Epidural glucocorticoid injections are widely used to treat symptoms of lumbar spinal stenosis. However, enough data are lacking regarding the effectiveness and safety of these injections. The purpose of this study is to assess the efficacy of steroid via caudal route in terms of pain relief and regain of activity of daily living in lumbar spinal canal stenosis patients. The structures involved in the pathology of low back pain are the intervertebral discs, facet joints, ligaments, fascia, muscles, and dura matter of nerve root. Disc prolapse is established as a major source of pain.[7] Prolapsed disc causes back and leg pain by mechanical compression on the nerve roots. leakage of the contents of the nucleus pulposus causes pain by producing an inflammatory reaction in the intervertebral disc, the facet joint.[3] Chemical neuro-radiculitis due to synthesis of various inflammatory mediators, enzyme and cytokines such as matrix nitric oxide, metalloproteinase, prostaglandin E, IL-6 and TNF-alpha also play an important role in the formation of discogenic pain. The efficiency of epidural steroid applications is related to breaking this inflammation cascade and concurrently adhesion and fibrosis is also suppressed.[8,9]

Materials and Methods

A prospective observational study was done in Combined Military Hospital and Moinamoti Cantonment General Hospital, Cumilla cantonment on patients suffering from back pain with radicular symptoms at examination at least for 3 months, they did not respond to medical treatment and physical therapy, they had magnetic resonance imaging (MRI) findings consistent to their clinical condition. Study was conducted from January 2020 to December 2021. Detailed clinical history and examination, X-ray and MRI of lumbosacral spine were done for all patients. Consecutive fifty patients were followed prospectively during the study period. All selected patients were informed about the study. The patients who agreed were included in the study after signing a written consent.

The inclusion criteria for selection were: Single or multiple level disc herniation confirmed by MRI, signs and symptoms consistent with spinal canal stenosis, Failure after a minimum of 8 weeks of conservative treatment, No history of lumbar surgery. The exclusion criteria for selection were: Cauda equina syndrome, Migrated or sequestrated herniation on imaging, Segmental instability, Motor deficit, Medical problems that contraindicated the procedure.

All patients were analyzed by according to the Japanese Orthopaedic Association Score form (Table -I) and were assigned a pre injection score.

Caudal epidural injection Procedure: The patients were informed about the procedure and their written consents were taken before the procedure. The patients were at prone position with a pillow under the inguinal part to support the position. Sacral hiatus was palpated. A 23-gauge spinal needle equipped with a stylet was placed between the sacral cornu at about 45°, with the bevel of the spinal needle facing ventrally until contact with the sacrum was made in the sacral triangle. The needle was then redirected more cephalad, horizontal, and parallel to the table, advancing it into the sacral canal through the sacrococcygeal ligament and into the epidural space. This

Table I: Japanese Orthopaedic Association Score
Japanese Orthopaedic Association Score

Subjective symptoms (9 points)	Evaluation	Score
a. Low back pain	None	3
	Occasional mild pain	2
	Frequent mild or occasional severe pain	1
	Frequent or continuous severe pain	0
b. Leg pain and/or tingling	None	3
	Occasional slight symptom	2
	Frequent slight or occasional severe symptom	1
	Frequent or continuous severe symptom	0
c. Walking capacity	Normal	3
	Able to walk more than 500 metres although it results in pain, tingling and /or muscle weakness	2
	Unable to walk more than 500 metres owing to leg pain, tingling and/or muscle weakness	1
	Unable to walk more than 100 metres owing to leg pain, tingling and/or muscle weakness	0
2. Objective findings (6 points)		
a. Straight Leg Raising test	Normal	2
	30° to 70°	1
	< 30°	0
b. Sensory	None	2
	Slight disturbance	1
	Marked disturbance	0
c. Motor disturbance	Normal (grade 5)	2
	Slight weakness (grade 4)	1
	Marked weakness (grade 3)	0
3. Restriction of ADL (14 points) (Activities of daily Living)	Turn over while lying, standing, washing the face, leaning forwards, sitting (about one hour), lifting or holding heavy objects, walking:	
	No restriction	2
	Moderate restriction	1
	Severe restriction for each item	0
4. Bladder function (-6 points)	Normal,	0
	Mild dysuria,	-3
	Severe dysuria	-6
	A normal person has JOA Score of 29.	

was followed by an aspiration test to exclude presence in subarachnoid space, then the Whoosh test (injecting air into the caudal epidural space with simultaneous palpation/ auscultation over the lumbosacral spine) to confirm the presence of needle tip in epidural space. 20 ml of injection combination comprising 2 ml inj. triamcinolone (Inj Cenolone, 80 mg Incepta pharmaceuticals Ltd, Bangladesh), 2 ml inj. bupivacaine,(Inj Bupi , Popular Pharmaceuticals , Bangladesh) and 16 ml distilled water were administered. The patients were mobilized after monitoring their vital signs, complaints closely. Patients were assessed at pre-injection, 1 month, 3 month and 6 month after injection. Results were assessed as per the rate of improvement. Rate of improvement (RI) = (Post-injection score – pre-injection score / 29 – Pre-injection score) × 100. The results were classified as; Excellent (Rate of improvement 90% and above), Good (Rate of improvement of 75 – 89%),Fair (Rate of improvement of

50% - 74%) and Poor (Rate of improvement d" 49%). The cases with good, fair and excellent results were considered to be effective in relieving the pain.

Results

Age of the patients were between 50 and 73years. Male were 39(78%) and 11 (22%) were female. Regarding occupation 30(60%) were retired army person, 12(24%) farmer, 5(10%) House wife and 3(6%) others. Pain expanded to right leg at 11 (22%) of the patients, to left leg at 16 (32%) of the patients, and to both legs at 23 (46%) of the patients; besides, Pre-injection average JOA score was 15.39, at 01 month post injection it became 23.08, at 03 month 24.30 and at 06 month 21.03. At 01 month post injection 05(10%) patients had excellent, 10(20%) patients had good, 25(50%) patients had fair and10 (20%) patients had poor results. The side effects due to the intervention, 4 (8%) of the patients had temporary hypotension and transient paresthesia occurred in 7 patients. Elevation of Blood glucose was recorded in diabetic patients immediately following epidural injection and persisted on average 03 days following injection. Post prandial blood sugar raised to a greater extent in comparison to fasting blood sugar. There was not any important complication.

Table II: Socio Demographics Characteristics (n=50)

Characteristics	Group	Number (N)	Percentage (%)
Gender	Male	39	78
	Female	11	22
Occupation	Retired army person	30	60
	Farmer	12	24
	House wife	5	10
	Others	3	6
Co-morbidity	Diabetes mellitus	13	26
	Hypertension	16	32
	Bronchial Asthma	03	06
	Heart disease	09	18

Table III: Radiation of pain (n=50)

Pain radiation	Group	Number (N)	Percentage (%)
Pain radiate to	Right leg	11	22
	Left leg	16	32
	Both legs	23	46

Table VI: MRI Findings in Patients (n=50)

No of patients	Location of stenosis	Level stenosis
12	L4-5 with lumbar midline or paramedian protrusion, or bulging	Single level stenosis
10	L5-S1 with lumbar midline or paramedian protrusion, or bulging	Single level stenosis
18	L4-5 & L5-S1 with lumbar midline or paramedian protrusion, or bulging	Two level stenosis
10	L3-4, L4-5 & L5-S1 with lumbar midline or paramedian protrusion, or bulging	Multi-level stenosis

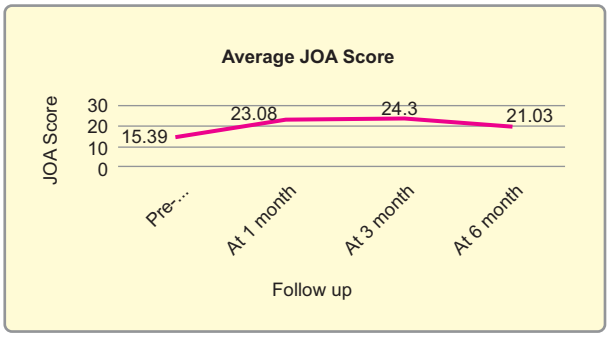

Figure I: Average JOA Score on follow-up

Table V: Showing rate of improvement (n=50)

Rate of improvement	At 1 month	At 3 month	At 6 month
	No of patients		
< 49% Poor	10	8	07
50-74% (fair)	25	20	23
50-89% (good)	10	17	16
90-100% (excellent)	05	05	04

Discussion

The first epidural drug application was performed in 1885 by James Corning who had applied epidural cocaine.[10] Epidural steroid applications had been started since 1950's, caudal and interlaminar intervention was defined in 1960's and transforaminal intervention was defined in 1970's. Thereafter fluoroscopic control was added to these methods and higher treatment success was achieved with lower dosage.[8] Steroid can be applied by caudal route, transforaminal route or translaminar route into the epidural space.Robechhi and Capra, and Lievre described use of Epidural Steroid Injection by transforaminal route while use of corticosteroids by caudal epidural space was reported in 1957 by Cappio.[11] The number of beneficiaries who underwent epidural injections for spine pain is increasing 7.8% annually.[12] We used caudal epidural technique and found satisfying results although there are advantages of the techniques to each other, caudal steroid injection is preferred by the clinicians.[10] Lumbar caudal steroid injection is safe, it is effective on caudal lumbar spine which is much more affected by degenerative disease. Patients complaining radiculopathy, local anesthetics are effective on pain control when applied with steroid or itself alone, but steroid application has positive effects on long-term follow-up.[13] In our study, 50 patients having low back with radiculopathy were treated with epidural caudal steroid injection; improvement at JOA score of 80% of the patients was detected at 01month period after the intervention. At 02 months follow-up JOA score analysis of the patients showed improvement at 84% of the cases and at 06 months 86% of cases. In our study when radicular low back pain was inspected, caudal steroid injection was found to be effective 06months follow-up which correlates to the current literature. Patients also reported more successful outcomes after receiving ESI when compared to conservative treatment.[4] In our study occupation was a major contributory factor for the radicular low back pain. Most of the patients were retired soldiers and other occupations like farming and carrying heavy objects on their back by laborers were deemed a major cause for disc prolapse similar to the observation in study done by V G Murakibhavi.[14] Four percent of the patients had temporary hypotension, which were corrected by infusion of Hartman solution and transient paresthesia occurred in 7 patients. Elevation of Blood glucose was recorded in diabetic patients following epidural injection in next morning fasting and 2 hours post prandial sample and persisted on average 03 days following injection. Post prandial blood sugar raised to a greater extent in comparison to fasting blood sugar.

Limitations

Control group was not used in this study and both patient and physician were not blinded. Also, the results were in a small patient population (n= 50) with a short follow-up period. The study could have targeted the affected nerve root but our study design was based on deposition of steroid in the epidural space as opposed to injecting the nerve root sheath due to limitation of resources. However, further studies on a larger population with a control group receiving placebo and long term follow up is recommended.

Conclusion

Back pain is a complex clinical situation with multiple pain sources**.** Caudal steroid injection can be used as an alternate method of treatment for the patients with chronic LBP not responding to conventional non-surgical methods of treatment. It is a safe and efficient day care treatment method. Randomized double blind studies are needed to assess its superiority to other conservative methods.

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ORIGINAL ARTICLE

J Ar M Coll Cu. 2022, January; 5(1): 26-29

Ocular Presentation of Covid-19 Positive Patients Attending Outdoor CMH, Cumilla

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Abstract

Background: The Corona virus disease 2019 (COVID-19) has reportedly affected almost 690 million people, with more than 6.87 million deaths globally. There have been a few reports on the ocular manifestations of COVID-19 patients in China but no reports in Bangladesh. The present study aimed to evaluate ocular presentation of COVID-19 positive patients. **Materials and Methods:** This descriptive cross-sectional study was conducted in the department of ophthalmology in CMH, Cumilla. A total of 50 patients with COVID-19 positive and ocular symptom positive admitted during March to December 2021 were included in this study. Patients transferred from other hospitals were excluded. Differences in terms of laboratory results and the prevalence of ocular symptoms were examined. A pre-structured tool was used to collect information regarding demographic details, chief complaints, ocular signs and symptoms, systemic comorbidity, previous medical records and RT-PCR test results. Documentation of ocular manifestations if present was done when the patient presented for screening, or when symptoms subsequently developed during the hospital stay. Data were analyzed and statistically evaluated using SPSS version 26. **Results:** Out of 50 COVID-19 positive patients, majority 17(34.0%) patients belonged to age group 41-50 years. The mean age was 42.7±11.5 years. Male: Female ratio was 1.17:1. Majority 33(66.0%) patients had bilateral involvement and rest 17(34.0%) had unilateral involvement. Right sided ocular involvement was 9(18.0%), left sided ocular involvement 8(16.0%) and bilateral eye in 33(66.0%). Most common ocular manifestations were conjunctivitis 21(42.0%) followed by episcleritis 7(14.0%), ocular discomfort 6(12.0%), sub-conjunctival haemorrhage 5(10.0%), acute anterior uveitis 5(10.0%), epiphora 4(8.0%) and vitritis 2(4.0%). **Conclusion:** In conclusion, the most common ocular manifestations were conjunctivitis, followed by episcleritis, ocular discomfort, sub-conjunctival haemorrhage, acute anterior uveitis and epiphora. While examining cases of overt ocular manifestations in patients with an evident systemic viral illness, the ophthalmologist should raise a concern and further rule out COVID-19 with appropriate diagnostic tests.

Keywords: COVID-19, Ocular, RT-PCR, CMH

Introduction

COVID-19 was first reported in Wuhan, China, in December 2019, and it has been declared as a public health emergency of international interest by the World Health Organization in January 2020. To date, COVID-19 has reportedly infected almost 690 million people, with more than 6.8 million deaths globally. However, ocular manifestations were not reported in the initial clinical reports.[1-3] In China, Guan et al. have documented that 9 of the 1099 cases have conjunctival congestion.[4] Chen et al. revealed various ocular symptoms

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in COVID-19 patients such as conjunctival congestion, dry eyes, blurred vision, and foreign-body sensation.[5] Systemic manifestation may precede ocular manifestation in around 0.28% of COVID-19-related patients with ocular symptoms. Furthermore, ocular manifestation was not linked to a severe type of COVID-19.[6] One study reported that one-third of patients with COVID-19 had ocular abnormalities, which occurred more frequently in patients with more severe COVID-19.[7] Since the beginning of the current outbreak, a growing amount of clinical reports of ocular manifestations in COVID- 19 patients have been published, more so than in SARS patients. The incidence of ocular manifestations in COVID-19 is varied and generally low. The ocular manifestations described most commonly in COVID-19 patients, apart from discomforts, include unilateral or bilateral conjunctival congestion, hyperemia, chemosis, increased secretions, watery discharges, epiphora, or conjunctival follicles with or without a diagnosis of conjunctivitis by an ophthalmologist. Sub-conjunctival haemorrhage, pseudomembranes and impaired vision were also reported, although less often. Ocular manifestation can present as an initial symptom, or an isolated symptom, in COVID-19.[8-16] Therefore, the study aim was to evaluate the ocular presentation of COVID-19 positive patients.

Materials and Methods

This descriptive cross-sectional study was conducted in the department of ophthalmology in CMH, Cumilla. A total of 50 patients with COVID-19 positive and ocular symptom-positive had visited from March to December 2021 and all were included in the study. Patients transferred from other hospitals were excluded. Differences in terms of laboratory results and the prevalence of ocular symptoms were examined. A pre-structured tool was used to collect information regarding demographic details (name, age, gender and residential address), chief complaints, ocular signs and symptoms, systemic comorbidity, previous medical records and RT-PCR test results. We also confirmed any positive upper respiratory infection (URI) symptoms (at least one of the following: runny nose, coughing, sore throat, and fever e" 38°C) and pneumonia at the time of COVID-19 diagnosis. Documentation of ocular manifestations if present was done when the patient presented for screening, or when symptoms subsequently developed during the hospital stay. Data on ocular symptoms (Ocular discomfort, Epiphora, conjunctivitis, episcleritis, sub-conjunctival haemorrhage, acute anterior uveitis and vitritis) were obtained each day. Data were analyzed and statistically evaluated using SPSS version 26.

Results

Table I shows the demographic characteristics of the patients. Out of 50 COVID-19 positive patients, majority 17(34.0%) patients belonged to age group 41-50 years. The mean age was 42.7±11.5 years. More than half 27(54.0%) patients were male and 23(46.0%) were female. Male: Female ratio was 1.17:1. Majority 33(66.0%) patients had bilateral involvement and rest 17(34.0%) had unilateral involvement. Right sided ocular involvement was 09(18.0%) and left sided ocular involvement was 8(16.0%). Regarding ocular manifestation, most common ocular manifestations were conjunctivitis 21(42.0%) followed by episcleritis 07(14.0%), ocular discomfort 06(12.0%), sub-conjunctival haemorrhage 05(10.0%), acute anterior uveitis 05(10.0%), epiphora 04(8.0%) and vitritis 02(4.0%) which is portrayed in the Figure-I.

Table I: Demographic characteristics of the patients (n=50)

Parameters	Frequency (n)	Percentage (%)
Age group (years)		
21-30	6	12.0
31-40	15	30.0
41-50	17	34.0
51-60	12	24.0
Mean±SD	42.7±11.5	
Sex		
Male	27	54.0
Female	23	46.0
Ocular involvement		
Unilateral	17	34.0
Bilateral	33	66.0
Side of ocular involvement		
Right eye	9	18.0
Left eye	8	16.0
Bilateral eye	33	66.0

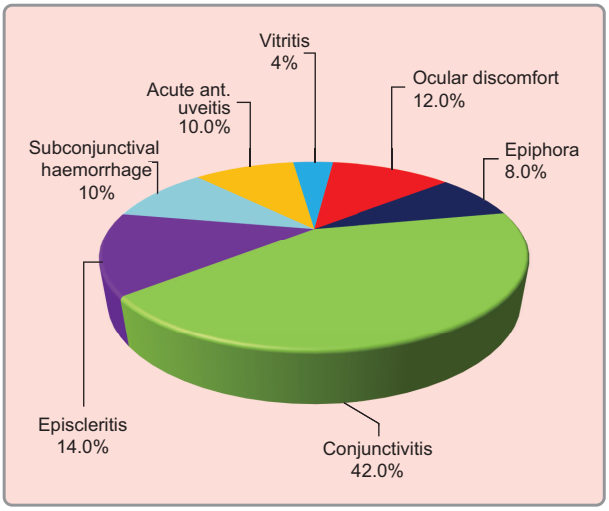

Figure 1: Ocular manifestations

Discussion

COVID-19 infection can involve all organs and systems of the body. Any part of the eye and ocular adnexa can get involved. Ocular manifestations in these patients can either occur due to direct implantation of viral load in conjunctival mucosa or through the haematogenous route to the posterior segment.[17-18] In this study we evaluate ocular presentation of COVID-19 positive patients. In this study out of 50 COVID-19 positive patients, majority 17(34.0%) patients belonged to age group 41-50 years. The mean age was 42.7±11.5 years. In a study conducted by Sarkar et al. demonstrated that majority of the participants were in the 19–45 years age range (52.6%), followed by 46–65 years (30.5%).[19] Of the patients 9.7% were >65 years, while 7.2% were younger than 18 years of age. Lee et al. have reported that the mean patient age was 49 ± 18 years.[20] In this study more than half 27 (54.0%) patients were male and 23(46.0%) were female. Male: Female ratio was 1.17:1. A study conducted by Zhong et al. revealed 58% male and 42% female.[21] Another study also done by Shaikh et al. obtained that the majority of patients 463(92.6%) were male. Regarding ocular manifestation, most common ocular manifestations were conjunctivitis 21(42.0%) followed by episcleritis 07(14.0%), ocular discomfort 06(12.0%), sub-conjunctival haemorrhage 05(10.0%), acute anterior uveitis 05(10.0%), epiphora 04(8.0%) and vitritis 02(4.0%). A study done by Shaikh et al. demonstrated that the majority of their patients had hyperaemia 13 (33.3%), followed by eye pain 09 (23.1%), epiphora 08 (20.5%), burning sensations 04 (10.3%), and photophobia 02 (5.1%) patients.[22] Zhong et al. described that ocular manifestations including conjunctival hyperemia (7.6%), conjunctival discharge (4.8%), epiphora (6.9%), and foreign body sensation (6.9%) were observed.[21] Sarkar et al. have reported that burning sensation in the eyes was present in 80 (6.7%) patients.[19] Likewise 84 (7%) patients had foreign body sensation. Conjunctival congestion was seen in 32 (2.7%) patients. Aggarwal et al. performed a meta-analysis with a total of 16 investigations, including 2347 verified COVID-19 cases.[23] Ocular surface manifestations were found in 11.64% of COVID-19 patients, according to pooled data. The most common symptoms were ocular discomfort (31.2%), discharge (19.2%), redness (10.8%), and follicular conjunctivitis (7.7%). Severe pneumonia was seen in 6.9% of patients with ocular symptoms. In 3.5% of patients, viral RNA was found in their ocular sample. Ocular discomfort, redness, discharge, and follicular conjunctivitis were the most commonly reported ocular manifestations of COVID-19 in their study. In a small number of patients, viral RNA was found in their conjunctival/tear samples.[9] Conjunctivitis was the most common ocular condition among COVID-19 patients, accounting for 88.8% of all reported ocular disorders such as foreign body sensation, tearing, and dry eyes. According to the findings, one out of every 10 COVID-19 patients had at least one eye symptom.[24] The present study has some limitations. First the sample size was small and no healthy population was included in this study as a control. Second a comprehensive ophthalmologic evaluation was not performed because COVID-19 patients were isolated. Regardless, these results can be valuable to ophthalmologists worldwide in an effort to evaluate ocular manifestations in COVID-19.

Conclusion

In conclusion, the most common ocular manifestations were conjunctivitis, episcleritis, ocular discomfort, sub-conjunctival haemorrhage, acute anterior uveitis, vitritis and epiphora. While examining cases of overt ocular manifestations in patients with an evident systemic viral illness, the ophthalmologist should raise a concern and further rule out COVID-19 with appropriate diagnostic tests.

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CASE REPORT

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Alport Syndrome: A Case Report

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Abstract

Alport syndrome is one of the hereditary nephropathy. It presents as a triad of familiar history of progressive nephropathy, sensorineural deafness, ocular abnormalities. It's incidence of 1 in 5000 life birth. A twenty two years old male presented with dimness of vision, hearing loss and renal impairment. Affected patients progress from haematuria to ESRD in late adolescence or their twent ears of age, on detailed clinical examination, diagnosed as a case of Alport syndrome. Patient was managed by diuretic, antihypertensive followed by hemodialysis and advised him for renal transplantation. It is also associated with sensorineural deafness and ocular abnormalities.

Keywords: Alportsyndrome, Nephropathy, Hereditary Diagnosed as aalportsyndrome

Introduction

A number of uncommon diseases may involve the glomerulus in childhood but the most important one affecting adults is Alport syndrome. Most cases arise from a mutation or deletion of the COL4A5 gene on The X chromosome, which encodes the alpha 5 subunit of type IV collagen, resulting in inheritance as an X-linked recessive disorder. Mutations in COL4A3 genes are less common and cause autosomal disease, which may be recessive or dominant and affect males and females equality. As a result of progressive degeneration of the Glomerular Basement Membrane (GBM), affected patients progress from haematuria to ESRD in late adolescence or their twenties. Female carriers of COL4A5 mutations usually have haematuria but less commonly develop significant renal disease. Some other basement membranes containing the same collagen isoforms are similarly involved, notably in the cochlea, so that Alport syndrome is associated with sensorineural deafness and ocular abnormalities.

Case Report

On February 2018, a twenty two years old male unmarried student came to Mymensingh Medical College Hospital as an outpatient with the history of bilateral pedal oedema, reduction of urine output and dimness of vision for last one year. Oedema was pitting in nature and associated with the respiratory distress in lying posture. He also gave history of reduction of urine volume day by day. At first he passed urine about 1 litre per day, later it reduced upto one glass per day. The patient also complained that his vision was lost day by day. On physical examination he was ill looking, puffy face, well nourished, decubitus in sitting position. He was aneamic, with no jaundice, cyanosis or clubbing. Blood pressure was 160/110 mmHg, pulse-101 per minute, and respiratory rate 20 per min, temperature was normal. His bowel habit was also normal. On bed side urine examination albumin or reducing sugar was absent. His abdomen was distended, no organomegaly found. On central nervous system examination, he was well conscious, all superficial and deep reflexes were normal. Visual equity was 6/16. On ophthalmoscopic examination there was anterior lenticonus present. On auditory examination there was high-tone sensorineural deafness. On investigation serum creatinine was 5 mg/dl and blood urea was 200 mg/dl, serum albumin was 1.9g/L. Urinary albumin was +++, random blood sugar was 7mmol/L, lipid profile was normal. On ultrasonogram

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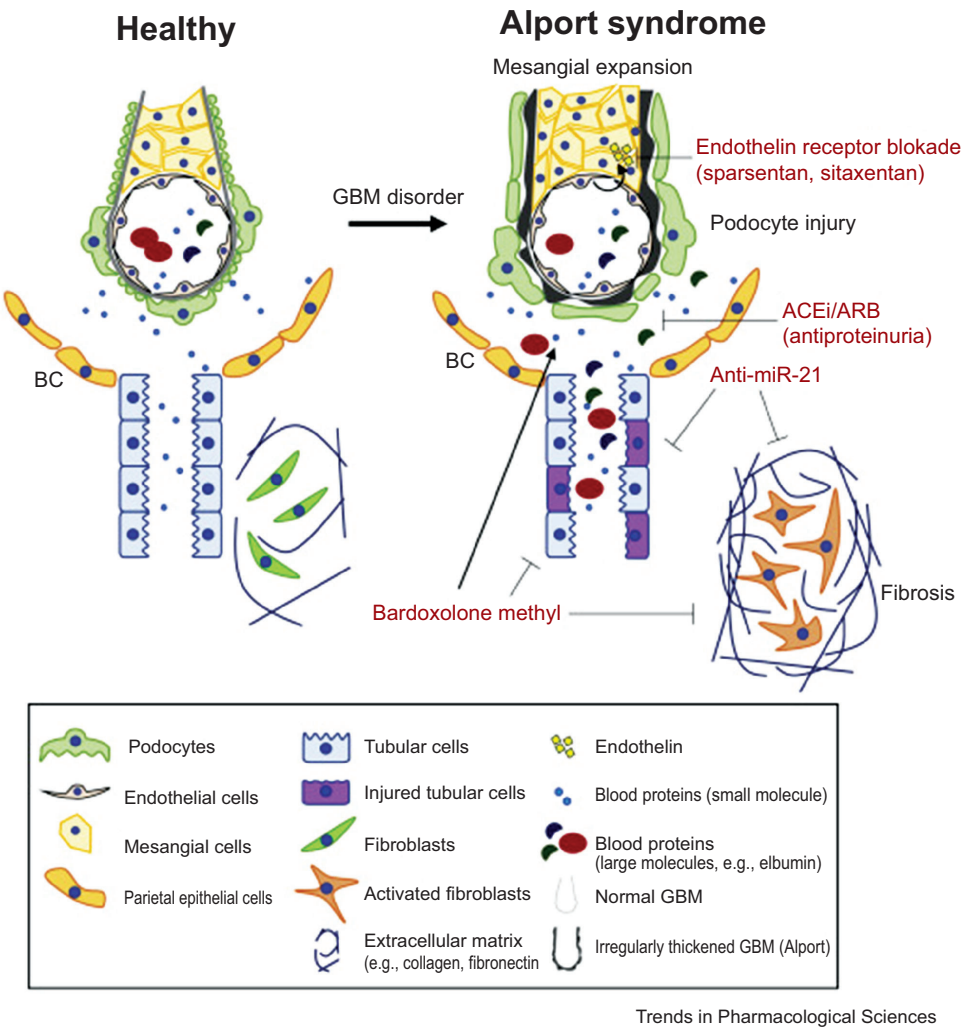

Fig.-1:

kidney size was small. At first I treated him by frusemide diuretics, anti-hypertensive (α-blocker & ACE inhibitor). I advised him for IV human albumin transfusion but he could not afford it's cost. After this management patients oedema subsided and I discharged him with advise about 3 to 4 egg white intake per day. After 10 days the patient again admitted with severe respiratory distress and pedal oedema. At last patient was needed hemodialysis and he maintained 2-4 times dialysis per week. I advised him for renal transplantation but he did not agree due to his economic crisis and lack of available kidney donor. After 1 month follow up, his blood pressure was 130/80 mmHg. Oedema was subsided. The patient felt more better than previous days.

Discussion

The defective GBM permit the passage of red blood cells.[1] The clinical suspicion for Alport syndrome should be high in patients with hematuria, proteinuria, abnormal renal indices, and ear and eye manifestations. Urine analysis would reveal blood and protein, and urine microscopy should be performed to evaluate for acanthocytes.[2] Renal biopsy is indicated in the setting of abnormal UA, presence of acanthocytes, red blood cell casts, or abnormal renal indices. Any patient with suspected Alport syndrome should be referred to otorhinolaryngology for the evaluation of high-frequency hearing loss and ophthalmology for the eye examination. Due to the defective collagen, the lens lacks the integrity to maintain the normal shape leading to the anterior lenticonus into the anterior chamber.[3] Genetic testing can help establish the diagnosis and determine the inheritance pattern of an individual and their family members. Molecular genetic testing is non-invasive, accurate, and gives the prognosis as the underlying mutation can be revealed. Next-generation

sequencing (NGS) analyses of COL4A3, COL4A4, and COL4A5 are recommended in patients with no family history of Alport syndrome.[4] For patients with positive family history, testing the target gene is recommended. A renal biopsy is preferred if the genetic defect does not match the family genetic mutation. In males with XLAS, the GBM splitting increases from approximately 30% to more than 90% by the age of 30 years.[5] Patients without the characteristic GBM splitting can be identified by immunostaining the type 4 collagen of the alpha-3, alpha-4, and alpha-5 chains of the GBM. A less invasive procedure, a skin biopsy can be performed on a child with suspected XLAS using a monoclonal antibody against the alpha-5 of the type 4 collagen chain.[6] Renal failure, bilateral sensorineural hearing loss, and abnormalities of the eyes are its defining features. A proteinuric state, hypertension, a slow fall in GFR, and end-stage renal disease (ESRD) are eventually evident in the patients.[7] COL4A5 gene mutations are the primary cause of Alport syndrome in 80% of cases, while alternate inheritance patterns also exist. Mutations in the COL4A3 or COL4A4 gene can cause it to be inherited in an autosomal recessive or dominant way. Until they are in their teens, 80% of males with XLAS experience some hearing loss.[8] Mutations in the genes encoding the alpha-3, alpha-4, and alpha-5 chains of type IV collagen are the root cause of Alport syndrome. The proximal causes of the following three genetic variants of Alport syndrome are listed 85% of cases of Alport syndrome are XLAS, which is brought on by COL4A5 gene mutations.[9] COL4A3 or COL4A4 genes are uncommon but in families with XLAS, over 300 mutations have been found in the COL4A5 genes. Splice-site mutations, missense mutations, and deletions of less than ten base pairs are the most common types of minor COL4A5 mutations.In the COL4A5 gene, large and moderate-sized deletions account for around 20% of the mutations. Esophageal, female genital, and tracheobronchial tree leiomyomatosis are caused by a specific type of deletion involving the COL4A5 and COL4A6 genes.[10] One in 50,000 neonates have Alport syndrome, and males are more likely than females to experience symptoms. In the United States, between 30,000 and 60,000 persons are thought to have this disease. End-stage renal disease (ESRD) affects roughly 3% of children and 0.2% of adults nationwide in the US.[11] In the United States, 2.2% of children and 0.2% of adults with ESRD have Alport syndrome. Alport syndrome affects 0.6% of ESRD patients in Europe.Males are more likely than females to have the prevalent X-linked form of Alport syndrome, which causes ESRD. However, approximately as many females are afflicted by the X-linked variant of Alport syndrome. Most affected women go misdiagnosed, but 15% to 30% develop renal failure by age 60.[12] Alport syndrome, which affects 1.5% to 3.0% of children receiving renal replacement therapy in Europe and the US, is a substantial contributor to chronic kidney disease (CKD), which causes ESRD in teens and young adults.

Conclusion

Angiotensin-converting enzyme (ACE) inhibitors may slow but not prevent loss of kidney function Patients with Alport syndrome are good candidates for renal replacement therapy(RRT), as they are young and usually otherwise healthy. They can develop an immune response to the normal collagen antigens present in the GBM of the donor kidney and, in a small minority, anti-GBM disease develops and destroys the allograft.

Conflict Of Interest: No Conflict interest was detected.

Recommendation

The recommendations include the use of genetic testing as the gold standard for the diagnosis of Alport syndrome and the demonstration of its mode of inheritance. The patient is a good candidate for renal transplantation and it is ultimate management of this patient.

Acknowledgement

We acknowledge our respected patient and his relatives who, consented to write and publish this case report and provide us with necessary information.

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