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Official Journal of
Ad-din Sakina Women's Medical College
www.aswmc.edu.bd

Ad-din Medical Journal

REGARDING THE JOUNAL

Full Name of the Journal	Ad-din Medical Journal
Abbreviated Form	*AMJ*
Type of Publication	Peer Reviewed, Bi-Annual
Published by	Ad-din Sakina Women's Medical College
ISSN No.	2313-4919
Address	Pulerhat, Jashore-7402, Bangladesh

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4. All authors' names, posts, affiliation at the time they did their work and their highest academic degree(s), cell phone numbers and e-mail addresses should be included. The name of the corresponding author should be mentioned.

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6. Abstract and key words in the first page followed by the text, prepared in the format of Introduction, Methods, Results, Discussion and conclusion.

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a. Title page

b. Abstract

c. Introduction

d. Methods

e. Results (Tables with titles and Figures with legends)

f. Discussion

g. Conclusion

h. Acknowledgement (if any)

i. References

Each of the sections is to start on a separate page. Page should be numbered consecutively beginning from the abstract.

Title

• Should be short (not more than 15 characters) & specific

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• Should include the names of all authors with their designation & their affiliations

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• The address of the corresponding authors including contact number & email address

• Disclosure of conflict of interest if any

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Introduction

• Statement of the problem with a short discussion of its importance and significance

• Review of the literature(s) related to the problem with pertinent reference

• Objectives/hypothesis/benefits should be clearly stated

Methods

• Research type, place and time

• Description of research variables

• Discussion of research population

• Selection criteria (Exclusion criteria if any)

• Approval of the research involving human subjects by ethical review committee (IRB/ERC) and description of the ethical aspects in such research

• Description of procedure, methods, apparatus, drugs or chemical as applicable

• Statistical procedure should be described and supported by reference

Result

• Present results in a logical sequence in text, table and illustration with most important finding first

• Figure should be numbered as Fig. 1 and table in Roman numerical (Tab. I)

• Do not duplicate data in table and figure

• Table and figure not supportive to the research are strictly discouraged

• Do not use internal horizontal and vertical rules

References

• Should be followed the Vancouver Format

• Should be numbered consecutively as superscript and should appear on top of the line after the punctuation

• At least 15 references should be included

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• Short communication can be described as a summarized version that have been prepared according to the structure of research articles

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Letters to the editor or comments can be sent to provide commentary and analysis concerning an article published in the journal, to give information about ongoing research to draw attention to a particular subject. It may include an optional title, tables and references. These articles should not exceed 1000 words.

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2. Dr.-----------

3. Dr.-----------

4. Dr.-----------

Online Education during Covid-19 Pandemic
Uddin SAM

The novel coronavirus "SARS-CoV-2" has spread like a wild fire across the globe and has caused unprecedented loss of human lives and suffering to millions since its inception back in 2019. Ever since this happened, we are struggling to cope up with the "new-normal" ways of life in almost every aspect of our daily activities. Nothing was proved to be more efficacious to combat this tiny foe than to prevent its spreading. Every nation thus has tried to implement measures to confine the infection. Physical distancing is one of the key methods that helps to keep the pandemic at bay. In lieu of that, places that provides mass congregation like academic institutions were shut in many countries around the world including Bangladesh. Bangladesh shut all its educational institutions from March 17. The standard framework of education, as we know it, changes its landscape overnight. The electronic system of learning has replaced the on-campus method in majority of the cases[1].

Aside from the economy, the sector which is harmed worst by the outbreak of Covid-19 is the education sector. Educational institutions initiated online classes from April till now. There are economic reasons as well as humanitarian reasons for ensuring the continuity of education through technology. A break in education for a lengthy period or the long part of an academic year is a receivable loss for late-stage economies in a slow-growth phase. To ensure an interrupted education system among the students the teachers in continuing online classes[1]. Online education is a sort of education where students use their home computers or laptops or smartphones through the internet, staying away from their

academic institutions.

In this circumstance, distance learning has achieved so much priority in the education system; media like Zoom, Google Meet, Google Classroom etc. video communication systems has gained massive popularity during the selockdown days[1].

Digital education system can bring many benefits for teachers and learners to aid in teaching and learning. Students are more interested in self learning and they agree that online courses are more suitable to them. They also do not need additional preparation to join themselves online and thus in any situation, they can be ready to join the class regardless of their time and location. The online class has also created a strong bond between students and teachers[1].

The upsurge of this online education has helped to maintain the learning curve but not without its downsides. Students and teachers face several challenges on the online classrooms. Firstly, connecting with online classrooms is their first experience, so it has been observed that they have difficulty adapting appropriately to this trend. Secondly, internet facilities are still scarce in rural areas and still now it is very expensive. Thirdly, some technical problems related to computer and smartphone management such as low literacy, required to download some apps like Zoom, Google Meet, Google Classroom, FoxFi, Audiobook, etc. Fourthly, time management is an important topic; for example, Zoom can connect people online for 40 minutes but due to some technical hurdles students take time to respond in time. Fifthly, it is difficult for teachers to manage everyone's notes and employ them in their materials[1].

The uncertainty of the duration of the pandemic makes it hard to go back to classrooms any sooner. Vaccination can enhance the restoration

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of physical classes but that too will take some time[3]. Till then, online learning method is a tangible way out to solve the educational crisis[4].

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Expression of p53 and its correlation with grading of urothelial carcinoma of urinary bladder

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Abstract:

Background: Urothelial bladder cancer (UBC) is a disease of significant morbidity and mortality. Staging and grading of these carcinomas are of utmost prognostic significance while strict segregation may be difficult and biological behavior of these tumors is highly variable. We evaluated the relationship of immune-histochemical expression of p53 protein with grading of urothelial carcinoma of urinary bladder. **Objective:** To determine the correlation between p53 protein expression and grading of urothelial carcinoma of urinary bladder. **Materials and Methods:** This cross-sectional study was conducted in the Department of Pathology and Department of Urology, Rajshahi Medical College & Hospital (RMCH) over the period of January 2018 to June 2019. It involved 50 cases of urothelial carcinomas diagnosed on trans-urethral resection specimens. Grading was done according to the WHO guidelines. Immuno-histochemical staining for p53 performed in all the cases, categorized as negative and positive expression taking 10% positivity as cutoff value, and correlated with the grade of urinary bladder carcinoma. **Results:** Majority (70%) of the patients were ≥ 60 years with a male to female ratio of 4.5:1. There were 17(34%) cases of low-grade and 33(66%) cases of high-grade urothelial carcinoma on histopathological examination. p53 expression was found positive in 24(72%) cases of high-grade carcinoma while only in 05(29%) cases of low-grade carcinoma. Significant difference in expression of p53 was found in different grade of urothelial carcinoma (P value <0.001). **Conclusion:** Our results corroborate with the opinion that in conjunction with histological grading, p53 immuno-marker may provide additional prognostic information in bladder urothelial carcinomas to stratify high risk patients.

Key words: Discrimination Index, MCQ, SAQ

Introduction

Bladder cancer is the commonest malignancy involving the urinary system, and the ninth commonest malignancy worldwide[1]. Over three-quarters (77%) of the tumors occur in men and

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smokers are four times more likely to develop urinary bladder cancer than non-smokers[2,3,4]. Incidence of bladder cancer increases with age[5], with its burden prevailed in developed countries until recently. However, because of increasing number of smokers and mass industrialization the paradigm is changing with developing countries bearing substantial burden of bladder cancer these days1. In South-East Asian region, the incidence and mortality due to bladder cancer are 1.8% and 1.3% respectively in both sexes[6]. In Bangladesh prevalence of urinary bladder carcinoma is 3.4% in men[7].

Most patients with bladder cancer are diagnosed after they present with gross or microscopic hematuria[8]. More than 90% of bladder tumors are urothelial carcinoma; 5% are squamous cell carcinomas; and 2% are adenocarcinomas[9]. The biological behavior of these tumors is highly

variable[10]. Amongst all, grading and staging of bladder tumors are important prognostic factors[9,11,12]. Others include lymph node involvement, patient's age, vascular invasion, p53 overexpression, loss of E-cadherin[13,14]. Generally, low-grade carcinomas are associated with good prognosis compared to high grade carcinoma. But the outcome can be different in patients at the same pathological grading[15]. Also histopathological examination of urinary bladder carcinoma is subject to considerable intra and inter observer variation and separation between different grades can sometimes be very difficult especially in small biopsies which may show crushing and cautery artifacts and in cases where histologic features are borderline. Accurate prognosis with any single factor is difficult to predict. Several biological and molecular parameters have been suggested as potential prognostic markers for bladder cancer. Mutated TP53 gene is a common genetic abnormality in bladder urothelial carcinoma[14]. Numerous studies have evaluated association of abnormalities and mutations of p53 and prognosis in bladder cancers. To our knowledge, in Bangladesh, study of p53 protein expression in urothelial carcinoma has not been studied earlier. p53 protein expression profile along with histopathological grading can guide the oncologist to select high risk patients, and to initiate appropriate treatment modalities. Our study is designed to use p53 protein as an immunohistochemical biomarker to find out its relationship with different histological grades of bladder urothelial carcinoma.

Materials and Methods

This study was a descriptive cross-sectional study. The study was conducted in the Department of Pathology, Rajshahi Medical College, and Department of Urology, Rajshahi Medical College Hospital, Rajshahi over the period of January 2018 to June 2019. Patients aged between 20 years to 85 years admitted in the Department of Urology, RMCH or attended at outpatient department (OPD) of Urology between 01.01.2018 to 30.06.2019 with suspected bladder urothelial carcinoma were screened and confirmed cases were enrolled. Approval for the research protocol was obtained from the Ethical Review Committee, Rajshahi Medical College, Rajshahi prior to the commencement of the study (Ref. RMC/ERC/ 2017-201 9/ 119 Date: 25/ 11 /2018). Informed consent was sought for participant enrollment. Purposive convenience sampling technique was used.During the collection of specimens, patient information, demographic data, clinical findings, past medical history, risk factors and investigation findings were recorded systematically in a prepared proforma. All the cases were numbered chronologically and the same number was given to histological as well as in immunohistochemical slides. Tissue processing and staining were done according to standard protocol followed at Rajshahi Medical College. Sections were studied under light microscope to classify benign and malignant lesions and to select one representative paraffin block for immunohistochemical analysis. Grading of the tumor was done according to WHO/ISUP guidelines. Immunohistochemistry was done in Armed Forces Institute of Pathology (AFIP), Dhaka. Standard immunohistochemical method was applied for subsequent staining. Brown nuclear staining considered positive for p53. Expression of p53 was calculated as a percentage of labeled nuclei per 200 cells counted in most immunoreactive region of the tumor and categorized into negative and positive. Tumors with nuclear immunoreactivity of more than 10% were considered positive. Statistical analyses were carried out using SPSS version 20.0(SPSS Inc., Chicago, Illinois, USA). Descriptive analyses were performed. Chi-square tests were used to analyze categorical variables. Results having P-values <0.05 were considered statistically significant.

Inclusion criteria

Patients with following criteria were included in the study

● All patients with clinically suspected and later on histopathologically confirmed as having urothelial carcinoma.

Exclusion criteria

Patients with following characteristics were excluded.

● Patients clinically suspected of having bladder urothelial carcinoma but not confirmed by histopathology.

● Obtained biopsies that were inadequate and poorly preserved, and specimens showing evidence of marked inflammation were excluded.

Table I: Demographic characteristics of 50 patients confirmed with urothelial bladder carcinoma

Characteristics	N	%
Age (years)		
< 60	15	30
≥60	35	70
Mean ± SD (Min-Max)	63.03 ± 11.98 (25 - 84)	
Gender		
Male	41	82
Female	09	18
Socio-economic status		
Low	31	62
Middle	19	38
Personal history		
Smoking	36	72
Betel nut chewing	38	76
Total	50	100

Maximum (70%) patients were more than or equal to 60 years of age and 30% patients were below 60 years of age. Mean age (±SD) of the patients was 63.03 (±11.9) years. Male were predominant (82%). Maximum patients had the habit of smoking (72%) and betel nut chewing (76%).

Result

Majority (70%) of the patients were ≥ 60 years with a male to female ratio of 4.5:1. 17(34%) low-grade and 33(66%) high-grade urothelial carcinoma were diagnosed by histopathological examination. p53 expression was found positive in 24(72%) cases of high-grade carcinoma while only in 05(29%) cases of low-grade carcinoma. We observed no statistically significant difference between p53 immunoreactivities and age, sex or smoking habit ($P > 0.05$). Significant difference in expression of p53 was found in different grades of urothelial carcinoma (P value <0.05).

Table II: Clinical findings of 50 patients confirmed with urothelial bladder carcinoma

Clinical findings	N	%
Hematuria		
Present	48	96
Absent	02	04
Dysuria		
Present	27	54
Absent	23	46
Lower abdominal pain		
Present	28	56
Absent	22	44
Total	50	100

Most of the patients (96%) presented with hematuria. 54% had dysuria and 56% had lower abdominal pain.

Tumor grade

Low grade · High grade
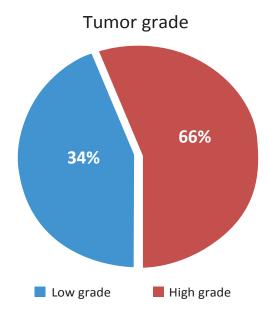
Figure 1: Tumor grade among 50 patients confirmed with urothelial bladder carcinoma by histopathology

According to WHO/ISUP histological grading, 33 (66%) were high grade and 17 (34%) were low-grade urothelial carcinoma.

Positive
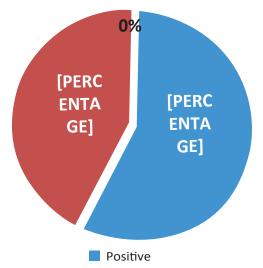
Figure 2: p53 expression among 50 patients with urothelial bladder carcinoma confirmed by histopathology

Among 50 patients, immunohistochemically 29 (58%) were p53 positive and 21 (42%) were p53 negative.
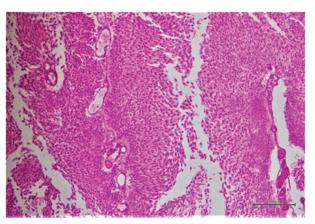
Figure 3: Photomicrograph showing low grade papillary urothelial carcinoma, (Case no. 06, H&E x100)
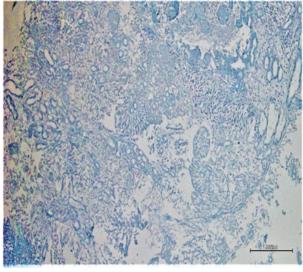
Figure 4: Photomicrograph showing negative p53 immunostaining in low grade papillary urothelial carcinoma (Case no. 06, H&E x100)

Table III: Relationship between tumor grade and p53 status among 50 patients confirmed with urothelial bladder carcinoma

Histopathology grade	p53 expression		Total n (%)	P
	Positive n (%)	Negative n (%)		
Low grade	12 (70.6)	05 (29.4)	17 (100)	
High grade	09 (27.3)	24 (72.7)	33 (100)	<0.05
Total	21 (42.0)	29 (58.0)	50 (100)	

Proportion of positive p53 expression was significantly higher among patients with high grade tumor (P < 0.05).
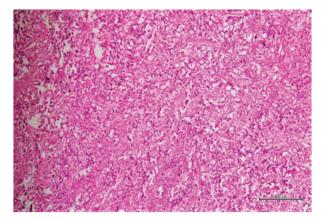
Figure 5: Photomicrograph showing high grade urothelial carcinoma, (Case no. 13, H&E x100)
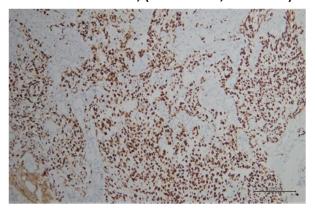
Figure 6: Photomicrograph showing positive p53 immunostaining in high grade urothelial carcinoma (Case no. 13, H&E x100)

Discussion:

We found the median age at presentation was 63 years (minimum 25 years, maximum 84 years) with male to female ratio 4.5:1. Kumar et al., (2017)[16] found mean age of the patients with neoplastic lesions was 55.6 years with male to female ratio 4:1, which is similar to our study. In their study majority of the bladder tumors occurred in the sixth and seventh decades (55.7 %.) which is in line with our study. In a study in 2012 Karam[17] found the mean age of the patients was 62.64 years with male and female ratio was 9:1, which was quite higher than our study. Gupta et al., (2009)[18] in Lucknow, India found mean age 60.2 ± 4.4 year but the male and female ratio was 8.8:1, which was higher than our study. There may be other confounding factors responsible for higher M: F ratio in the mentioned study.

Men had a threefold greater risk of developing bladder cancer than women[19]. The higher incidence of UBC in male may be due to the personal habit such as smoking and more exposed to toxic agents due to their occupation. In our study most of the male patients had habit of both cigarette smoking and betel nut chewing and females had habit of betel leaf with betel nuts; which is almost similar to a previous study by Chinnasamy et al., (2016)[20] that revealed most of bladder cancer patients (71.2%) had smoking habit. Chou et al., (2013)[21] found 24.9% of urothelial cancer patients had smoking habit; which is inconsistent with our result.

Our findings of almost all patients presented with microscopic hematuria and the relative proportions of other clinical features are in line with previous studies[9,20], except dysuria, which was almost five times higher in our study.

We found more high-grade (66%) than low-grade (34%) urothelial carcinoma which is almost similar to the study by Chou et al., (2013)[21]. In 2012 Karam[17] found 46% & 30% cases of high-grade & low-grade cases respectively. Rest of the cases were papilloma and PUNLMP. We found no PUNLMP cases in our study. In our country the probable cause of higher grade UBC may be low socioeconomic condition, lack of awareness, lack of urological treatment facilities as well as social and religious restrictions especially for female patients. Moreover, all our cases were from RMCH, which is a tertiary level hospital and so patients are admitted with advanced stage of disease or referred as complicated cases. In another study by Chinnasamy et al., (2016)[20] in India observed 64% high-grade and 36% low-grade carcinoma which were almost similar to our study.

We scored p53 expression according to the percentage of positive tumor cells. This simple method was easy to apply compared to complex scoring schemes that take into account combination of staining distribution (percent of positive cells), as well as staining intensity. All cases with 60–100% positive tumor cells demonstrated moderate-to-strong staining intensity, therefore, inclusion of staining intensity into immunohistochemical scoring scheme would not improve performance of the test at the chosen cut-off. In addition, evaluating intensity of staining is problematic as it is difficult to reproduce and it can vary with different protocols.

We observed no statistically significant difference between p53 immunoreactivities and age, sex or smoking habit (P > 0.05), which is quite similar to some previous studies[22,23,24]. Ozgoz et al., (2005)[25] found p53 overexpression in all of the three female patients; they reported that this might suggest that p53 mutation rates in urinary bladder cancers seen in females might be higher than those seen in males, but it was hard to say so, because of the limited number of female patients in the group.

In our study, proportion of positive p53 expression was significantly higher among patients with high grade tumor, (P < 0.05). There are numbers of studies in the literature conducted on p53 and tumor grade and different results have been obtained. Soini Y et al., (1993)[26] found more p53-positive cases in Grade II–III tumors than in Grade I tumors (P = 0.004), which is similar to our study. Esrig et al., (1994)[14] investigated alteration of p53 with both molecular analysis and immunohistochemistry and have shown that tumors with high p53 accumulation are high grade, stage and at high risk for recurrence. Their immunohistochemical results were similar to ours. Few studies reported that using the cell cycle proteins in combination might be useful for prognosis in bladder cancers. Hitchings et al., (2004)[27] assessed the prognostic value of p53 and p16 combined staining and

alterations of both of them were more informative than staining p53 alone. Conversely some studies reject the predictive value of p53 mutation analysis and immunostaining for recurrence and progression[28,29,30].

The reason of the conflicting results in the literature about p53 expression may be due to a number of factors. The preferred antibody clone is one of them. DO-7 anti-p53 antibody was used in our study. Masters et al., (2003)30 assert that the DO-7 clone is less effective than the pAb1801 antibody. Interobserver inconsistency is one of the other reasons. Only strong nuclear staining was taken into account when scoring p53, weak and moderate intensity nuclear staining was ignored in the current study. Using the different cut-off points for p53 and heterogeneity of the series may lead to different results.

Conclusion

Some recent studies mention that p53 protein over-expression is a bad prognostic indicator for bladder urothelial carcinoma. In routine practice only grading and staging is done by histopathology, which cannot provide sufficient information regarding the aggressiveness of these tumors due to its highly unpredictable behavior. So, we performed this study with the aim to evaluate the association of p53 protein expression in various grades of urothelial bladder carcinoma. The findings of our study suggest that use of p53 immunomarker in conjunction with histopathological grading may provide significant prognostic information for stratifying high-risk patients in urinary bladder carcinoma.

Recommendations

Immunohistochemical expression profile of p53 protein in bladder urothelial carcinoma may be included as part of routine pathological evaluations. Larger sample size, longer duration, multicenter studies with reliable, reproducible, and equivalent standardized immunohistochemical techniques, use of other biomarkers, molecular

studies and follow-ups would bring out more representative data.

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Prevalence and Antibiogram of Escherichia Coli Causing Nosocomial Urinary Tract Infection in Surgical Ward of Kumudini Women's Medical College Hospital

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Abstract :

Background: *Urinary tract infection is a very common community prolem in Bangladesh. The upsurge of antibiotic resistence has made the situation worse in our country.* **Objective:** *To observe the possible nosocomial uropathogen from indoor catherized UTI patients of surgical ward* **Method:** *Different pathogenic bacteria were isolated and identified from urine sample by culture and biochemical tests.* **Result:** *Out of 50 urine samples, 35 (70.00%) yielded significant bacterial growth. Among them E. coli was the most predominant bacteria 20 (57.14%) followed by Acinetobacter baumanni 5 (14.29%), Pseudomonas aeruginosa 5 (14.29%), Klebsiella pneumoniae 3 (8.57%) and Proteus vulgaris 2 (5.72%). Only antibiotic susceptibility test of E. coli was done. All (100%) E. coli were sensitive to imipenem and colistin sulphate and 100% resistant to ciorofloxacin and co-trimoxazole.* **Conclusion**: *It can be said that antibiotic resistance against commonly using antibiotics is an alarming sing for us.*

Keywords: Antibiogram, antibiotic susceptibility, Escherichia coli, Urinary tract infection.

Introduction

Hospital-acquired infections (HAI) have been recognized for over a century as a critical problem affecting the quality of healthcare, and these constitute a major source of adverse healthcare outcomes.[1,2] In the developed countries, it has been reported to affect from 5% to 15% of hospitalized patients in regular in regular wards and as many as 50% or more of patients in intensive care units while in developing countries the magnitude of the problem remains largely underestimated.[3] Only few studies have focused on nosocomial

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infection in developing countries, especially in Bangladesh.[4]

Urinary tract infection (UTI) represent the frequent form of nosocomial infections in developing countries and invasive medical procedures play a major role.[5] UTI are a a global financial burden and the emergence of resistance in uncomplicated and complicated uropathogen is of great concern.[6]

There is a wide spectrum of pathogens causing UTI including E. coli, Klebsiella, Pseudomonus, Enterobacter, Enterococci and Proteus spp.[7] Escherichia coli is the most common uropathogen in both complicated and uncomplicated UTI.[8] It is also a common causes of hospital acquired UTI.[8]

The aim of this study was to describe the prevalence of nosocomial urinary tract infections caused by different bacteria especially E.coli and to see their antimicrobial susceptibility pattern.

Material and Method

This Cross-sectional study was done at Kumudini Women's Medical College Hospital fromJanuary to June, 2018. After obtaining the clearance from Ethical Review Board, 50 patients who were

admitted in general surgery ward were included in the study. All study subjects were catheterized for various reasons and suspected to have urinary tract infection. Clean catch mid-stream urine samples were collected in sterile containers for doing Culture sensitivity. Different bacteria were isolated from the specimens and only antibiotic susecptibility of E.coli was seen.

Isolation of organisms

All the samples were inoculated on blood agar media and MacConkeys agar media and incubated at 37°C aerobically for 24 hours. The incubated plates were examined for bacterial growth and the organisms were identified by colony morphology, hemolytic criteria, staining character, pigment production and biochemical tests such as oxidase test, reaction in TSI, MIU anddetermination of antimicrobial susceptibility pattern.[9]

Antimicrobial susceptibility testing

The antimicrobial susceptibilitypattern was determined by Kirby Bauer disk-diffusionmethod on Mueller-Hinton agar using commerciallyavailable antibiotic discs (Oxiod, Hampshire, UK)according to CLSI guidelines[10]. The antibiotic diskused in antibiogram for all the Gram-negative bacteriawere co-trimoxazole (1.25/23.75 μg), gentamicin (10μg), ciprofloxacin (5 μg), doxycycline (30 μg), azithromycin (30 μg), amoxiclav (20+10 μg), ceftriaxone (30 μg), ceftazidime (30 μg), imipenem(10 μg),amikacin (30μg/disc), colistin sulphate (10μg/disc), cefixime (30μg/disc), chloramphenicol (30 μg/disc), cefepime (30μg/disc), doxycycline. (30μg/disc) and nitrofurantoin (300μg/disc). Escherichia coli ATCC 25922 was used forquality control. Pure colonies of isolated organisms were emulsified in normal saline and turbidity was matched with 0.5 McFarland turbidity standards. Selected antibiotic discs were placed on inoculated Mueller Hinton agar media. These plates were incubated at 37ºC for 24 hours. Resistant and sensitive

bacteria were defined according to CLSI guidelines[10].

Data analysis:

After compiling data were analyzed using` Microsoft Office Excel 2007` program.

Table I: Rate of isolation of bacteria from urine specimen (n=50)

Isolated bacteria	Frequency	Percentage
Significant growth	35	70.00
No growth	15	30.00
Total	50	100.00

Table-II: Organisms isolated from urine (n=35)

Organisms isolated	Number	Percentage
E. coli	20	57.14
Acinetobacter baunanni	05	14.29
Pseudomonas aeruginosa	05	14.29
Klebsiella pneumoniae	03	8.57
Proteus vulgaris	02	5.72
Total	35	100.00

Table-III: Age distribution of infected patients

Age (years)	Number	Percentage
<20	01	2.86
21-40	11	31.43
41-60	19	54.28
>60	04	11.43
Total	35	100.00

Table- IV: Antimicrobial susceptibility of E.coli causing UTI by disc diffusion method

Antibiotics	Sensitive %	Resistant %
Amikacin	19 (95.00)	1 (5.00)
Azythromycin	10 (50.00)	10 (50.00)
Ceftazidime	12 (60.00)	8 (40.00)
Ceftriaxone	12 (60.00)	8 (40.00)
Chloramphenicol	0 (0.00)	20 (100.00)
Ciprofloxacin	0 (0.00)	20 (100.00)
Co-trimoxazole	0 (0.00)	20 (100.00)
Gentamicin	10 (50.00)	10 (50.00)
Imipenem	20 (100.00)	0 (0.00)
Cefepime	12 (60.00)	8 (40.00)
Cefixime	12 (60.00)	8 (40.00)
Nitrofurantoin	18 (90.00)	2 (10.00)
Doxycycline	18 (90.00)	2 (10.00)
Colistin sulphate	20 (100.00)	0 (0.00)

Result:

Out of 50 urine samples of suspected cases of UTI of indoor patient, 35 (70.00%) samples showed significant bacterial growth. (Table: I)

Among them, E.coli was the most predominant pathogenic bacteria 20 (57.14%) followed by Acinetobacter boumanni 5 (14.29%), Pseudomona aeruginosa 5 (14.29%), Klebsiella 3 (8.57%), Proteus 2 (5.72%). (Table: II)

In this study we found that most UTI cases (54.28%) were within 41-60 years followed by in the age group of 21-40 years (31-43%). (Table-III)

According to disc diffusion method, none of the E.coli was resistant to imipenem and colistin sulphate. All 41 (100%) E.coli were resistant to chloramphenicol, ciprofloxacin and co- trimoxazole. (Table IV)

Discussion

Nosocomial infection is affecting the hospitalized patients and creating a major problem in both developed and developing countries. In developed countries many interventions were made to control this but in developing countries like Bangladesh on emphasis has yet been given in this field. In this present study, it was observed that the most common organism isolated from post-catheterized UTI cases was E.coli (57.14%) followed by Acinetobacter baumanii and Pseudomonas aeruginosa (14.29%) and Klebsiella pneumoniae (8.57%). Earlier studies done in Bangldesh in 1973, 2010, 2016 and 2021reported similar predominance of E. coli (37.5%, 55.9% and 57.14%, 82.25% respectively) in hospital acquired infections.[4,5, 11,12,]

In a previous study done in Dhaka Medical College Hospital it was found that majority of the patients (41%) belonged to 45-59 years of age, it is similar to the findings in our study.[13] In the present study most of the UTI patients (54.28%) were in the age group of 41-60 years. It may be due to decrease in immunity with increase of age.

In this study, it was observed that 100% E.coli were resistant to ciprofloxacin and co-trimoxazole which are the most commonly used antibiotics in UTI. Similar result was seen in another study in Bangladesh which was 80%.[5] We found that all E.coli were sensitive to imipenem and colistin sulphate and it is similar to another study.[14] The multidrug resistance pattern in E.coli due to production of extended spectrum of beta-lactamase.[15] Increased level of resistance to the commonly used antibics in hospital isolates was reported by others[16,17.]

Conclusion

Despite aggressive efforts to limit the rapid rise of antimicrobial resistance, the problem of developing resistance to multiple antibiotics continues to worsen as demonstrated by various studies including the present study. However, the current situation is the ineffective control measures and

antibiotic policies. Large numbers of Gram negative bacteria causing nosocomial UTI produce ESBL with most being multidrug resistant. Therefore, routine and subsequent antibiogram with disc diffusion method could be useful to determine the best treatment option for UTI.

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Association between Insulin Resistance and Nonalcoholic Fatty Liver Disease

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Abstract :

Background: Nonalcoholic fatty liver disease (NAFLD) is the most common liver disease worldwide.The growing body of evidence has demonstrated that insulin resistance is an independent risk factor for nonalcoholic fatty liver disease. Limited evidence is available regarding the association between insulin resistance and NAFLD. **Aims and Objectives:** The aim of this study was to investigate the association of insulinresistance with non-alcoholic fatty liver disease. **Materials and Methods:** A cross-sectional observational study carried out in the Department of Biochemistry, Sylhet MAG Osmani Medical College, Sylhet in collaboration with the Department of Hepatology, Sylhet MAG Osmani Medical College, Hospital during the period between July 2017 and June 2018. Fifty cases of NAFLD and 50 age and sex matched healthy subjects were selected. Fasting blood glucose & fasting insulin level of the participants was measured. **Results:** The mean serum insulin level (µIU/ml) was 9.36 (inter quartile range, 5.94-14.05) in non-alcoholic fatty liver disease and was 4.69(inter quartile range, 3.44-6.72) in control subjects. The serum insulin level of the non-alcoholic fatty liver disease was significantly higher compared to control subjects (p<0.001). **Conclusion:** It may be concluded that insulin resistance is strongly associated with non-alcoholic fatty liver disease

Keywords: Insulin resistance, Nonalcoholic fatty liver disease, Steatohepatitis

Introduction

Nonalcoholic fatty liver disease (NAFLD), characterized by increased fat accumulation in the hepatocytes of the liver parenchyma, is today one of the most common causes of chronic liver disease worldwide[1]. Nonalcoholic fatty liver disease (NAFLD), develops in the absence of alcohol abuse. When nonalcoholic fatty liver disease is accompanied with liver cell injury and inflammation it is called nonalcoholic steatohepatitis. About 30% nonalcoholic fatty liver disease progress to nonalcoholic steatohepatitis, if untreated it can be lead to fibrosis, cirrhosis or even hepatocellular carcinoma (HCC)[2].The prevalence of NASH may be underestimated, as the

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diagnosis requires histological confirmation. It is considered that at least 5% of the population may have NASH[3].

Several studies showed that nonalcoholic fatty liver disease is almost associated with obesity, hypertension, dyslipidemia, and glucose intolerance, a cluster of disorders now recognized as metabolic syndrome[4,5]. The proportion nonalcoholic fatty liver disease is higher in people with type 2 diabetes (60%-70%), and in those who are obese or morbidly obese (75%-92%) compared to the general population[6,7,8]. It seems that insulin resistance (IR) related to obesity is central to the pathogenesis of NAFLD. In addition, oxidative stress and cytokines are important contributing factors, together resulting in steatosis and progressive liver damage in genetically susceptible individuals. Key histological components of NASH are steatosis, hepatocellular ballooning, and lobular inflammation[9].

Therefore metabolic derangement based on insulin resistance is the most acknowledged cause of fat accumulation9 and metabolic syndrome is

considered to be a crucial mediator from simple over-nutrition to severe body lesion by promoting inflammation10 and are hypothesized to explain the complex pathogenesis and progression of nonalcoholic fatty liver disease[11]. Nonalcoholic fatty liver disease is potential to progress to severe liver disease and association with serious cardio-metabolic abnormalities including type-2 diabetes mellitus, metabolic syndrome and coronary heart disease1. For this reason, nonalcoholic fatty liver disease has been considered as the hepatic manifestation of metabolic syndrome[12]

Materials and Methods

This cross-sectional observational study was carried out in the Department of Biochemistry, Sylhet MAG Osmani Medical College, Sylhet in collaboration with the Department of Hepatology, Sylhet MAG Osmani Medical College & Hospital during the period from July 2017 to June 2018 with a view to compare serum uric acid level between non-alcoholic fatty liver disease and healthy subjects. In this study 50 cases of NAFLD and another 50 age and sex matched healthy subjects were selected and grouped as group-A and group-B respectively.Informed written consent was taken before taking any interview. Anthropometric measurements including height, weight, waist circumference, and blood pressure were recorded. BMI was calculated as weight in kg divided by the height in meter square. Fatty liver was diagnosed based on the findings of abdominal ultrasonography without alcohol consumption, viral, or autoimmune liver disease. Fasting plasma glucose (FPG) and fasting insulin was collect for biochemical analysis. Relevant information was recorded in a pre-formed data collection sheet designed for the study.

Result

The mean age of the participants of non-alcoholic fatty liver disease (Group-A) was40.04 ± 9.37 years and control subjects (Group-B) was40.90 ± 12.37 years. The mean age of the participants did

not differ significantly between two groups (t=0.519; p=0.605) (Table-I).

The mean BMI of the non-alcoholic fatty liver disease was 26.08 ± 1.41 (range 23.44-30.10) Kg/M2; whereas the mean BMI of the control subjects was 23.89 ± 2.31 (range 17.82-30.10) Kg/M2. The mean BMI of non-alcoholic fatty liver disease was significantly higher than that of control subjects (t=5.718; p<0.001) (Table-I).

Table-I: Distribution of the participants according to baseline characteristics

Parameters	Case (n=50)	Control (n=50)	Test value	p-value
Age in years Mean ± SD	40.04 ± 9.37	40.90 ± 12.37	t=0.519	*p=0.605
Sex				
Male	28 (56.0%)	32 (64.0%)	p=0.667	p=0.414
Female	22 (44.0%)	18 (36.0%)		
BMI in Kg/M2 Mean ± SD	26.08 ± 1.41	23.89 ± 2.31	t=5.718	*p<0.001

*unpaired't' test and †Chi-Square (χ2) testwere employed to analyze the data. P<0.05 was the level of significance.

Distribution of patients by serum insulin level:

The meanserum insulin level (μIU/ml) was 9.36 (inter quartile range, 5.94-14.05) in non-alcoholic fatty liver disease and was 4.69(inter quartile
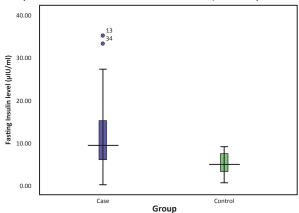

Figure 1. Distribution of patients by serum insulin level

range, 3.44-6.72) in control subjects. The serum insulin level of the non-alcoholic fatty liver disease was significantly higher compared to control subjects (p<0.001) (Figure-1).

* Mann-Whitney U test was employed to analyse the data.

Distribution of patients by fasting plasma glucose level :

The mean fasting plasma glucose level (mg/dl) was 130.54 ± 41.06 (range, 75.0-195.0) in non-alcoholic fatty liver disease and was 87.94 ± 17.38(range, 66.0-161.0) in control subjects. The mean serum insulin level of the non-alcoholic fatty liver disease was significantly higher compared to control subjects (t=6.810; p<0.001) (Figure-2)
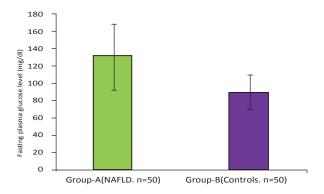

Figure 2. Distribution of patients by fasting plasma glucose level

*unpaired t test was employed to analyse the data.

Comparison of HOMA and insulin resistance between NAFLD and control subjects:

The mean HOMA level (mg/dl) was 3.29 ± 1.97 (range, 0.45-7.65) in non-alcoholic fatty liver disease and was 1.07 ± 0.40 (range, 0.38-1.95) in control subjects. The mean HOMA level of the non-alcoholic fatty liver disease was significantly higher compared to control subjects (t=7.803; p<0.001) (Figure-8).

The frequency of insulin resistance and sensitive subjects were 56.0% and 44.0% in the group of NAFLD whereas none was insulin resistance and all were insulin sensitive in the without NAFLD group. Insulin resistance was significantly more in non-alcoholic fatty liver disease compared to control subjects (χ2=38.889; p<0.001).

Table II. Comparison of HOMA and insulin resistance between NAFLD and control subjects

Parameters	Case (n=50)	Control (n=50)	Test value	p-value
HOMA	3.29 ± 1.97	1.07 ± 0.40	t=7.803	*p<0.001
Insulin				
Resistance	28 (56.0%)	0 (0.0%)	p=38.889	p<0.001
Sensitive	22 (44.0%)	50 (100.0%)		

*unpaired t test and Chi-square (χ2) Test were employed to analyse the data.

Discussion:

NAFLD has been recognized as a major health burden and the prevalence is increasing year by year. In western countries, NAFLD has also become one of the most liver diseases, affecting 20% to 40% of the general population. NAFLD is considered as a multifactorial chronic disease that is associated with genetic, environmental, and metabolic factors[13].

This study showed that the mean serum insulin level was 9.89 ± 4.71 μIU/ml in non-alcoholic fatty liver disease and was 5.00 ± 1.87μIU/ml in control subjects. The mean serum insulin level of the non-alcoholic fatty liver disease was significantly higher compared to control subjects (p<0.001). This result was supported by Gad, 2018) that patients with NAFLD (11.21 ± 6.81 microunit/ml) had significantly increased values of fasting serum insulin compared to the control group (7.79 ± 3.21 microunit/ml). In agreement with this study[14] also demonstrated that fasting serum insulin level was

significantly higher in NAFLD patients than in control subjects. [15] enforced this result as it was found that patients with NAFLD had higher serum insulin levels than the control group. Several other studies also supported these findings[16-19].

In the present study the mean fasting plasma glucose level (mg/dl) was 130.54 ± 41.06 in non-alcoholic fatty liver disease and was 87.94 ± 17.38 in control subjects. The mean serum fasting plasma glucose level of the non-alcoholic fatty liver disease was significantly higher compared to control subjects (p<0.001). These findings were supported by several other studies that mean fasting plasma glucose level of the non-alcoholic fatty liver disease was significantly higher compared to control subjects[20,16,18].

NAFLD subjects in the Bangladeshi population have previously been shown to have insulin resistance; however, the underlying mechanism(s) of this defect is still unclear. In this settings, we found significantly higher (p<0.001) levels of HOMA in NAFLD subjects (3.29 ± 1.97)compared to the controls (1.07 ± 0.40). This result was consistent with the study of Hossain et al., (2018)[19] where they found that HOMA level was significantly higher (p=0.001) in NAFLD subjects (2.21 ± 1.01)compared to the controls (1.79 ± 0.51). This observation was also in agreement with a number of studies[21,18].

In this study 56.0% patients were insulin resistance in non-alcoholic fatty liver disease group and none in control subjects; insulin resistance was significantly more in non-alcoholic fatty liver disease compared to control subjects (p<0.001)[17]. Found that the frequency of insulin resistance subjects were 42.9% in the group of NAFLD whereas 28.2% in the group of without NAFLD.

Conclusion :

This study revealed that the mean serum insulin level, HOMA and insulin resistance were significantly higher non-alcoholic fatty liver disease

compared to control subjects. From the findings of this study, it may be concluded that insulin resistance has strong association in non-alcoholic fatty liver disease.

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Comparison between SICS and Phacoemulsification along with Trabeculectomy in Pseudoexfoliation Glaucoma.
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Purpose: This study aims to evaluate efficacy and outcomes of manual small incision cataract surgery with trabeculectomy (Group 1) and phacoemulsification with trabeculectomy (Group 2) in pseudoexfoliation glaucoma (PXG). *Methods:* In this retrospective comparative observational case series, All patients with PXG who underwent either small incision cataract surgery or phacoemulsification with trabeculectomy from 2015 2020 were studied. Data compared included best corrected visual acuity (BCVA), intraocular pressure (IOP), total surgical time, and incidence of intra/postoperative complications. *Results:* A total of 82 (Group 1) and 64 (Group 2) subjects were included for the study. The baseline IOP and anti glaucoma medications in both groups were comparable pre operatively (group 1 = 26 ± 10.3 mmHg, group 2 = 23 ± 13.9 mmHg, P = 0.1). The IOP at final follow up between the two groups was not statistically significant (group 1 = 12 ± 3.2 mmHg, group 2 = 14 ± 1.8 mmHg, P = 0.2). The average total time of surgery (group 1 = 40 ± 21.6 min, group 2 = 34 ± 14.8 min, P = 0.4) was not statistical significant between groups. The incidence of post operative complications were similar in both groups (P = 0.95). *Conclusion:* Manual small incision cataract surgery with trabeculectomy is not inferior in PXG patients with comparable surgical outcomes, when compared with phacoemulsification with trabeculectomy.

Key words: Cataract, phacoemulsification, pseudo exfoliation glaucoma, SICS, Trabeculectomy, Zonular dialysis.

Introduction:

Pseudoexfoliation syndrome (PXF) is a unique age related ocular disease characterized by accumulation and deposition of pseudo exfoliative (XFM) material, a fibrillary extracellular matrix protein deposited multifocal over different ocular structures including lens, anterior chamber, and different organs of the body[1].These white deposits are found along the insertions of zonules in ciliary body and lens capsule at equator which causes degeneration and localized autolysis especially at the ciliary body epithelium thereby creating zonularinstability[2]. Modern phacoemulsification techniques have improved surgical outcome with reduced complications in cataract surgery. Yet this advantage is only marginal for patients with pseudo exfoliation owing to increased intra or postoperative complications due to structural abnormalities induced by the deposition of XFM on different ocular structures especially the zonules[2,3]. These includes poor pupillary dilatation

causing difficulty in capsulorrhexis, zonular instability, posterior capsular dehiscence,[4,5] dense brown nuclear cataracts[6]. postoperative IOP spike, or glaucoma[7,9].

Combined glaucoma and cataract surgery are often required in patients with pseudo exfoliation glaucoma (PXG), and this poses a surgical challenge to experienced clinicians owing to these complications. There is a need to identify safer alternatives of cataract surgery in PXG which can be used effectively without compromising the need for a closed chamber during surgical maneuvers

SmallIncision cataract surgery (SICS) is a useful alternative in developing countries[10], or in scenarios where phacoemulsification is not possible or safe. SICS utilizes a larger but self sealing incision[10 13]. However, it has the advantages of less instrument dependence, cost effectiveness, less surgical time and can be used in rural and low cost settings for providing quality surgical outcomes especially in developing countries. This offers all the advantages of a closed chamber during

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surgery (unlike Extra capsular cataract extraction) while allowing largerincision size without increase in postoperative astigmatism,[12] but can cause increased inflammation, slower visual recovery with bearing on the bleb survival in combined surgery. Phacoemulsification has smaller incision with less inflammation and faster visual recovery. Though earlier studies have reported its efficacy in routine cataract or glaucoma surgery,[10,13,14] studies evaluating its safety and efficacy in terms of IOP control and postoperative outcomes in PXG with associated pre-existing risk of complications are sparse. Our study compares the BCVA, IOP control, total surgical time, and postoperative outcomes along with complication rates of manual small incision cataract surgery with trabeculectomy and phacoemulsification and trabeculectomy in PXG.

Methods

This retrospective study included all patients diagnosed with PXG who underwent combined cataract and glaucoma surgery (manual SICS with trabeculectomy and phacoemulsification with trabeculectomy) by a single surgeon from 2015 to 2020 at Nova Eye care hospital in Jessore, Bangladesh. Data retrieved from hospital database included were reviewed with respect to vision, IOP preoperatively and post operatively, surgical time, and intraoperative complications if any. All patients underwent a complete comprehensive evaluation including BCVA, IOP measurement by Goldman applanation tonometry, gonioscopy by Zeiss 4 mirror gonioscope, dilated fundus examination with +90D (VOLK) lens.All patients also underwent visual field analysis by Humphrey visual field analyzer with 24 2 SITA standard strategy and 10 2 program where ever needed. PXF was diagnosed in the presence of dandruff like XFM on different ocular structures like lens, iris and pupil with or without raised IOP. Glaucoma was diagnosed in PXF eyes with glaucomatous optic nerve head changes and corresponding

visual field changes. Patients with uncontrolled IOP despite maximum medical treatment/ intolerant to topical medications/ progression on visual fields were operated by either technique for better control of IOP were included in Group 1 and Group 2.

Surgical technique:

Surgery for all patients was performed under local peribulbar anesthesia. A fornix based conjunctival flap was created with adequate dissection on the sides to facilitate wider and posterior flow of aqueous. Manual small incision cataract surgery with trabeculectomy (SICS trabeculectomy) (Group 1) For small incision cataract surgery a 5.5 mm straight incision was made with creation of sclero corneal groove dissecting 1 mm into clear cornea. After forming the anterior chamber (AC) with viscoelastic material, circular curvilinear capsulorrhexis (CCC) was done with a 26G cystitome. After hydro dissection, the nucleus was prolapsed into AC and removed by irrigating Vactis. Cortical wash was performed by Simcoe irrigation aspiration cannula and posterior chamber intraocular lens (IOL) was implanted in the bag under viscoelastic. The internal ostium sized 1.5 × 1.5 mm was created manually with Vanna's scissors underneath the scleral flap followed by peripheral basal iridectomy. A thorough wash of viscoelastic was done before closing the wound with 1 interrupted 10 0 nylon suture at the middle of incision[15] while titrating the flow through the ostium by adjusting the tightness of the suture. The conjunctiva was secured with 8 0 vicryl by 1 intermittent wing suture and 1 mattress suture.

Phacoemulsification with trabeculectomy (Phaco trabeculecto my) (Group 2) Phacoemulsification was done using OPTIKON R-EVO Smart system by making a triangular partial thickness scleral flap 4 × 4 mm size which was dissected into 2 mm of clear cornea.After 3 step entry into theAC, capsulorrhexis, and adequate hydro dissection, the nucleus was emulsified by direct chop technique using a blunt chopper. Cortical wash was done by

irrigation aspiration cannula followed by in the bag intraocular lens implantation. Trabeculectomy was completed as described previously with Vanna's scissors followed by conjunctival closure with 1 interrupted vicryl wing and 1 interrupted suture.

Surgical time was also recorded in all patients in both groups. Post operatively, all patients were discharged on prednisolone acetate 1% eye drops six times a day and moxifloxacin0.5% eye drops four times a day with gradual tapering of steroids over 6 weeks. Details of IOP, AC details, and BCVA on day 1, 1 week, 1 month and at final follow up were noted. Complications in the intraoperative or postoperative phase were recorded and compared in both techniques. Any conversion of surgical technique in either group to any other procedures were noted.

Complete success was defined as IOP ≤21 mmHg with no medication after 2 months of surgery without the need for any further interventions like needling, bleb massage or other procedures for IOP control. Partial success was defined as IOP ≤21 mmHg with 1 or more anti glaucoma medications after 2 months of surgery or need for bleb revision or further interventions for long term IOP control. Post operative IOP spike is defined as IOP >21 mm Hg in immediate post operative periodupto 1 week whilehypotony isdefinedas IOP21 mm Hg despite medication after 6 weeks of surgery mandating re surgery or drop in visual acuity >2 lines from pre operative BCVA.

Statistics All analysis was done using Stata Corp (version 10, USA). Differences between groups in variables like BCVA and IOP) were compared using unpaired Student "t" test or Wilcoxon signed rank test while pre and postoperative variables (BCVA, IOP, number of medications) with Paired Student "t" test or Mann Whitney U test (for non parametric data). Descriptive statistics were represented as mean ± SD with statistical significance set at P < 0.05. All the outcome measures and complications were compared in both groups at final visit.

Results

A total of 82 patients in group 1 and 64 patients in group 2 with complete data were included forthe study, which included 90% males. The mean age and baseline IOP on maximal medical treatment in patients was not significantly different between both groups, P = 0.1 (26 ± 10.3 mmHg vs 23 ± 13.9 mmHg). The baseline glaucomatous damage of the patients was marginally greater in patients of group 1 (MD 18 ± 6.4 dB) compared to group 2 (MD 17 ± 8.9 dB) though there was no statistical difference between the two groups, P = 0.4.

The number of pre operative medications that were required in both groups was not significantly different (2 ± 1.6 and 2 ± 0.9 in group 1 and 2 respectively, P = 0.7) with none of the eyes having undergone any laser surgery before combined surgery. (Table I) Preoperatively both groups had non dilating pupils (n = 12 in group 1 and n = 9 in groups 2) with 65% in group 1 and 72% in group 2 of patients having a nuclear density of ≥NS grade 3, (Table II).

Preoperative zonular dialysis was seen in 6 patients in group 1 and 3 in group 2 with none of the groups having other ocular associations. Capsulorrhexis completion was possible in 78 of group 1 with peripheral extensions required in 4 eyes. The average total time of surgery was less in group 2 though this did not reach statistical significance, P = 0.4 (40 ± 21.6 and 34 ± 14.8 minutes) (Table I).

No complications were seen during hydro dissection or nucleus removal but synechiolysis before nuclear prolapse into the AC was required in 3 eyes in group 1. The complications were similarin both groups with group 2 having more incidence of intraoperative zonular dialysis (ZD) while group 1 had more incidence of residual minimal cortex in area of pre existing zonular dialysis left alone during surgery, although this

was not statistically significant. [Table II].

All patients with residual cortex, resolved with intensive steroid regimen hourly for a week and then tapering over 6 8 weeks with none requiring repeat surgery for cortical wash or developing macular edema or IOP rise at any follow up visit. Postoperative fibrinous reaction was seen in 3 eyes in group 1 and one eye in group 2.

The IOP at post operative day 1, 1 week and final visit was similar in both groups with none of the eyes experiencing postoperative IOP spike or hypotony. Around 95% of eyes in group 1 and 96% in group 2 achieved increase in >3 Snellen lines of visual acuity at final visit with none of the eyes having wipe out phenomenon or decrease in BCVA. Twelve patients in group 1 and 9 in group 2 had no improvement in visual acuity postoperatively owing to advanced glaucoma damage though their final IOP was 10 ± 2.1 mm Hg and 11 ± 1.8 mm Hg, respectively, P = 0.6. Complete success was achieved in 80 eyes in group 1 and 61 eyes in group 2 (P = 0.9) with requirement of anti glaucoma medication in the other eyes for rise in IOP at a mean follow up of 4 ± 3.6 weeks in group 1 and 3 ± 2.3 weeks in group 2. (Table III).

Table I: Demographics of patients with PXG undergoing Small incision cataract surgery with trabeculectomy (group 1) and phacotrabeculectomy (group 2)

Variables	Group 1 n=82	Group 2 n=64	p
Age	71±10.3	68±7.8	0.06
M:F	58:24	48:16	0.05
Surgery time(minutes)	40±21.6	34±14.8	0.4
Baseline IOP(mm of Hg)	26±10.3	23±13.9	0.1
Number of medicine	2±1.6	2±0.9	0.7
MD(dB)	-18±6.4	-17±8.9	0.4
PSD(dB)	10±7.5	13±6.8	0.01
VFI(%)	56±14.4	48±17.8	0.003

PXG pseudoexfoliation glaucoma; M, male; F female; IOP intraocular pressure; MD mean deviation; PSD pattern standard deviation; VFI visual field index

Table II: Intraoperative complications in PXG patients undergoing Small incision cataract surgery with trabeculectomy (group 1) and phacotrabeculectomy (group 2)

Variables	Group 1 n=82	Group 2 n=64	p
Nondilated pupil(n)	12	9	1.00
>grade NS3	53	46	0.95
Preoperative ZD	6	3	0.94
Intraoperative ZD	5	8	0.90
Incomplete rhexis	3	6	0.88
Fibrinous reaction on day 1	3	1	0.93
Residual cortex	9	2	0.87
Persistent Hypotony> 1 week	1	0	0.93
Post op complecations	22	17	0.96

PXG Pseudoexfoliative glaucoma, NS Nuclear Sclerosis, ZD Zonular dialysis, *Chi Square tes

Table III: IOP profile of PXG patients undergoing Small incision cataract surgery with trabeculectomy (group 1) and phacotrabeculectomy (group 2) PXG-pseudoexfoliation glaucoma , IOP- intra ocular pressure

Intraocular pressure at visits (mm of Hg)	Group 1 n=82	Group 2 n=64	p
IOP 0	26±10.3	23±13.9	0.9
IOP 1st week	10±6.6	10±5.9	0.9
IOP 1st month	13±3.4	14±2.7	0.2
IOP final	12±3.2	14±1.8	0.2
Complete success	80	61	0.9

Discussion:

This study found comparable success rates with SICS trabeculectomy and phaco trabeculectomy in PXG with > 95% achieving increase in visual acuity in both groups. Incidence of intraoperative complications was similar in both groups. The postoperative IOP profile was similar for patients in both groups with none of the eyes having loss of visual acuity at final follow up. This is encouraging for developing countries where manual small incision surgery is routinely done as a cost effective alternative to phacoemulsification. This however needs extensive surgical training for effective surgical outcomes as seen in this study.

In our study both groups had nuclear grades ≥ NS grade 3 in 65% 72% eyes. Six patients in group 1 and 3 patients in group 2 had pre existing ZD. The incidence of fibrinous reaction in 3 patients in group 1 could be attributable to either retained cortex, synechiolysis, or excessive iris handling to facilitate nucleus delivery. Though ZD pre operatively consists a much severe disease, both groups had comparable outcomes after surgery with no more incidence of intraoperative ZD in group 2.

We have used only direct chop methods for nucleus fragmentation that minimizes stress to zonules with most of the nuclear cracking and removal facilitated with the nucleus held with the phacoemulsification probe. Nevertheless, this observation of increased ZD in group 2 is definitely attributed to transfer of phacoemulsification power to the zonules which are inherently weak by XFM deposits [2,6,16].

While SICS may not be less traumatic to zonules in PXG eyes (unless done by experienced surgeons), the ACM helps maintain deep anterior chamber during all steps of the surgery[10,11,13]. This minimizes stress on zonules during different steps of cataract and glaucoma surgery while protecting the endothelium as well as washing away debris during surgery[12,13]. SICS also helps as a "bail out" technique for eyes. where phacoemulsification has to be abandoned in view of intraoperative complications[17].

Thomas et al. reported no difference between phaco trabeculectomy and Blumenthal technique of combined cataract and trabeculectomy in terms of IOP control and visual acuity[18]. However, they reported more vitreous loss and PCR in latter technique which authors have attributed to complicated cases undergoing this technique and the learning curve of surgeons[18]. Several other studies have shown good IOP control and visual rehabilitation with both techniques although most studies have focused on different types of glaucoma and not a single pure cohort of PXG eyes where complications may be expected to be higher[18,16,19]. Our study shows that SICS trabeculectomymay be effective inexperienced hands with comparable outcomes to phaco trabeculectomy procedures in a pure cohort of patients with pseudo exfoliation glaucoma.

A study by Langda et al. have shown that phaco trabeculectomy in PXF and non PXF patients had significant IOP control after surgery which was comparable in both groups and transition to ECCE during surgery was more in PXF group. [14] It is also shown decreased incision size and less scarring have shown better functional results in terms of IOP control and reductions in anti glaucoma medications in SICS trabeculectomy compared to ECCE trabeculectomy[20].

Our study was a retrospective study with its inherent drawbacks. Our cohort was comparable at baseline with no difference in pre operative IOP, age or nuclear density in both groups which may have impacted surgical outcome differently in the two groups. There may have been a bias for adopting manual SICS in more complicated cases as highlighted by the increased number of preoperative ZD in group 1. We did not find any difference in the complication rate between the two

techniques; yet our study was underpowered to evaluate this difference. A randomized controlled trial would definitely highlight important differences in success rates and/or complication rates between the two techniques of surgery. Being a retrospective study, we also did not evaluate bleb morphology which is also important for evaluating success of glaucoma surgery. We also would like to state that results presented here from this study are very short term and would need a long term period follow up as function of bleb is time dependent.

Conclusion:

In summary, our study suggests that manual combined small incision cataract and glaucoma surgery done by experienced surgeons is non inferior to phacoemulsification and glaucoma surgery in PXG patients with glaucoma in low resource or rural settings.

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A Case of Adrenal Carcinoma

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Abstract :

Adrenal carcinoma is rare, occurring with a frequency of 1 to 2 per million populations per year. The tumor occurs in two age peaks; one peak occurring at less than 5 years of age and the second peak, in the 4th and 5th decades. Women are slightly more affected than men as shown in most studies. Here we report a case of adrenocortical carcinoma. A 52 years old diabetic and hypertensive lady hailing from Rangpur presented with gradually increasing bilateral leg oedema which was associated with puffiness of face. On query she gave H/O recent onset hirsutism and also noticed of clitoromegaly. On examination patient was anemic, edematous and moon like face.Increased thick terminal hair on chin, sideburn and upper lip without any pigmentation and striae. There is clitoromegaly on systemic examination. After evaluation she was diagnosed as left adrenal carcinoma secreting multiple hormone like cortisol, aldosterone,epinephrine and androgen, which metastasis to liver and inferior venacava with left renal vein thrombosis. As this case was inoperable,that's why conservative management was given along with insulin for blood sugar control and LMWH followed by warfarin. Also adviced for regular follow up on endocrine OPD of BIRDEM general hospital.

Keywords: Clitoromegaly, Hirsutism , Hypokalemia, Hypertension.

Introduction

The median age for the diagnosis of adrenocortical carcinoma is 36 years, but cases from the first year of life to the eighth decade have been reported1. Adrenal carcinoma associated with excessive production of glucocorticoids, mineralocorticoids, androgens and estrogens with the clinical manifestations of Cushing's syndrome, hyperaldosteronism, virilization and feminization have been reported. Infants and children with adrenal cortical carcinoma can present with precocious puberty[2,3,4].Regardless of the hormone secretory product or the type of clinical syndrome, the urinary 17- ketosteroids are invariably elevated5. Dehydroepiandrosterone (DHEA) usually contributes most to the elevated 17-ketosteroids. The measurement of DHEA in plasma can be used as a marker for adrenal cortical tumors as well as an indicator of the therapeutic efficacy of various treatment regimens6. Although most cases of adrenal carcinoma are rapidly fatal, there have been patients who survived decades with large tumors[7].The present report documents the clinicaland laboratory findings of a woman who presented at age 52 years with evidence of Cushing's syndrome.

Case details

Mrs. X 52 year's old diabetic & hypertensive lady hailing from Rangpur admitted in BIRDEM general hospital on 13th November 2017 with bilateral leg swelling which was gradually increasing and associated with puffiness of face. She also complains of anorexia, nausea and generalized weakness without any weight loss. On query she gave H/O recent onset hirsutism and clitoromegaly. On general examination, she looks ill, moon facies and plethoric. She was anemic and bilateral pitting oedema was present. Her pulse was 84 b/m, BP 160/100 mm of Hg and BMI 28 Kg/m2.On systemic examination reveals clitoromegaly.Her abdominal imaging (Both USG & CT) shows

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large(10.30 x 7.6) left adrenal carcinoma with thrombi in left renal vein and IVCalso multiple secondaries in liver. After that her hormonal profile was done and reveals high serum catecholamine with increased basal cortisol and overnight DST was not suppressed. Increased serum testosterone (6.25ngm/ml), aldosterone(201 pg/ml), DHEAS (1500ugm/dl) and low FSH level(0.05mIU/ml), TSH (0.27uIU/ml) with normal brain imaging. On routine test there was hypokalemia with altered liver function test.

We took consultation from Urologist and Oncologist; they stated that this case is an inoperable state, that's why we gave her conservative management like adequate antihypertensive including spironolactone, insulin for sugar control and LMWH followed by warfarin for thrombosis in left renal vein.

Discussion:

Adrenal carcinoma is rare, occurring with a frequency of 1 to 2 per million populations per year[8]. The tumor occurs in two age peaks; one peak occurring at less than 5 years of age and the second peak, in the 4th and 5th decades. Women are slightly more affected than men as shown in most studies[9,10,11]. Adrenal carcinoma can be classified as functional and nonfunctional;

approximately 60% of cases have functional tumors. The functional tumors are encountered more frequently in women and children, while the nonfunctional tumors tend to occur predominantly in older men[11]. The most common hormonal presentation in patients with adrenal carcinoma is Cushing syndrome, followed by Cushing syndrome with virilisation, and virilisation alone. Feminisation and Conn syndrome alone are rare presentations of this tumor[12]. CT is the imaging of choice for initial study in patients suspected of adrenal carcinomas. Abdominal CT provides information about the tumor's resectability, renal function, and the presence of metastasis in the abdomen. However, CT is less sensitive than magnetic resonance imaging (MRI) in evaluating tumor extension into the liver, kidney, and IVC. On CT, adrenal carcinomas are typically large, lobulated, and inhomogeneous due to hemorrhage and necrosis. Calcifications are seen in 30% of cases[10,11,12]. On MRI, the tumors appear heterogeneous on both T1- and T2-weighted images owing to the presence of hemorrhage and necrosis[13]. Surgery is the most effective treatment of adrenal carcinoma. The chemotherapeutic agent often used to treat adrenal carcinoma in both primary therapy and adjuvant therapy settings is mitotane[9]. However, prognosis of patients with adrenal carcinomas is poor because the tumors are often detected at an advanced stage.

Conclusion

In hypertension with hypokalemia we should always exclude adrenal cause. Hirsutism even in post menopausal woman requires thorough evaluation to exclude adrenal pathology.

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