"A STUDY OF CLINICAL PROFILE OF URINARY TRACT INFECTION IN DIA BETICS AND NON DIABETICS"

Medicine

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KEYWORDS

INTRODUCTION

The urinary tract is the most common site for infection in diabetic patients than non diabetics (1). Most of the urinary tract infections in diabetics are relatively asymptomatic which leads to severe kidney damage and renal failure. Bacteriuria is more common in diabetics than in non diabetics due to host and local risk factors, more common in females than male (2).

Certain renal infections, including emphysematous pyelonephritis, perinephric abscess and candiasis show close association with diabetes. The presence of diabetes predispose to much severe infections, especially in patients with poor glycemic control, acute ketoacidosis, or diabetic complications such as nephropathy, vasculopathy and neuropathy[3].

In diabetes there is impaired neutrophil and monocyte function (impaired chemotaxis, phagocytosis, adhesion, intra cellular destruction of microorganisms) and immune disorder (decrease in the level of complements, cytokine response and T helper lymphocytes)[4]. Improved control of the diabetes mellitus (DM) can lead to an improvement in these cellular functions. Some microorganisms become more virulent in a high glucose environment. Therefore, screening for UTI in diabetic patients is very important to enable bacteruria to be properly treated, and prevent the development of renal complications of diabetes and eventually sever renal damage and failure[5].

Characteristics of UTI in diabetic and non diabetic patients..

METHOD AND MATERIAL:

The study was conducted in the department of medicine of G.M.E.R.S medical college and hospital, dharpur-patan in between June 2017 to September 2018.

A total of 146 patients were screened, of which 100 patients were included in the study. The study included 50 diabetic and 50 nondiabetic patients with culture positive UTIs.

EXCLUSION CRITERIA:
1. Patients with negative urine culture.
2. Those patients diagnosed and treated outside for UTI.
3. Patients were not willing to participate and not giving informed consent for the study.
4. Patients age is < 12 years.

The following data including age, gender, occupation and symptomatology were taken and clinical examination was done.

All proven diabetics with fasting venous glucose > 126mg/dl and postprandial (2 hours) venous glucose > 200mg/dl were included in the study irrespective of reason for admission. Patients with a history of diabetes and those who were on treatment for the same were also eligible for admission.

Controls consisted of patients admitted in hospital with comparable age and sex with no history of diabetes and fasting blood sugar < 110mg/dl.

The laboratory tests included complete blood picture, renal and liver function test and urine microscopy including culture.

For urine microscopy, 5ml of clean catch midstream urine was centrifuged at 3000 rpm for five minutes and centrifuge was viewed under microscope and more than five WBC per high power field was considered significant.

A fasting sugar, postprandial sugar and HbA1c were done for all diabetics.

All patients were regularly followed after discharge in outpatient departments.

OBSERVATIONS

TABLE 1: Comparison of age incidence of UTI in Diabetics and NonDiabetics

There was study of 50 patients of diabetics and non diabetics in both groups. Patients more than 12 year of age were included in this study.

AGE	NON DM		DM	
13-25	5	10%	3	6%
25-40	10	20%	6	12%
41-55	9	18%	31	62%
55-70	21	42%	8	16%
>70	5	10%	3	6%
Total	50	100%	50	100%
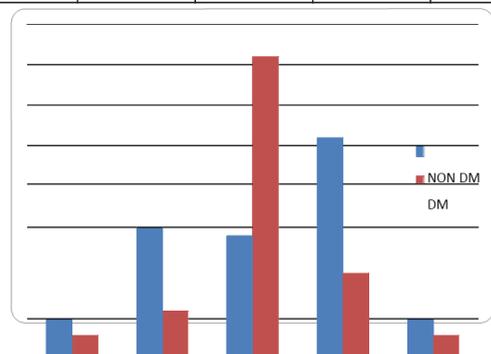
In current study, there were 48% patients in non diabetics and 80% patients in diabetics below 55 years age. There was significant statistical difference in age between diabetic and non diabetic patients (p value 0.002).

Table 2: Comparison of gender incidence of UTI in Diabetics and Non-Diabetics

In current study, 72% females among non-diabetics and 56% females among diabetics were having UTI. There was no significant statistical difference in gender between diabetic and non diabetic patients (p value >0.05).

GENDER	NON DM		DM	
MALE	14	28%	22	44%
FEMALE	36	72%	28	56%
Total	50	100%	50	100%

UTI occurs far more commonly in females than males except during neonates and elderly above age of 50 years. During the neonatal period, the incidence of UTI is slightly higher among males than among females because male infants more commonly have congenital Urinary tract anomalies. After 50 years of age, obstruction from prostatic hypertrophy Becomes common in man and incidence of UTI is almost high among man as among woman.[6]

Between 1 year and ~50 years of ag e, U T I and recurrent UTI predominantly diseases of females, at least 40 to 50 % of females having one episode of UTI during life time. The prevalence of ASB is~5% among women between ages 20 and 40 and may be as high as 40–50 % among elderly women and men[7]

**TABLE 3:** Duration of diabetes in study group
In current study, there was study of correlation between duration of diabetes and incidence UTI. 19 patients were having diabetes since 6 to 9 years.

Duration of diabetes (years)	Incidences of UTI
0-3	8
3-6	14
6-9	19
>9	9

TABLE 4: Comparison of predisposing conditions

In current study, there was study of predisposing conditions like catheter, benign prostatic hypertrophy, pregnancy, calculi, genitourinary surgery and diseases, uncontrolled diabetics and others.

| PREDISPOSING FACTORS	NON DM	DM
PREGNANCY	10	2
CATHETER	26	28
BPH	8	11
CALCULI	14	12
GENITOURINARY SURGERY & DISEASES	7	6
UNCONTROLLED DM (HBA1c > 9.0)	0	19
OTHER CONDITIONS	3	3
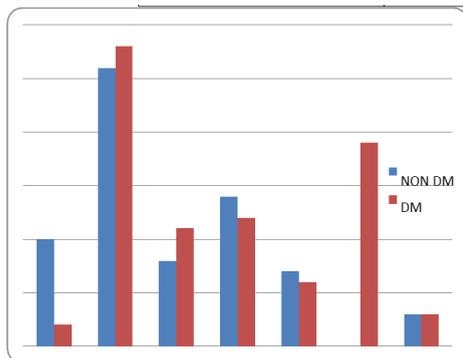
Catheter was the most common predisposing condition in both groups. Calculi was 2nd predisposing condition. Uncontrolled diabetes is important predisposing condition. There was no significant statistical difference of predisposing condition between both groups. (p value >0.05)

TABLE 5: Comparison of clinical characteristics
In current study, There was study of clinical characteristics like fever, dysuria, increased frequency of urination, abdominal pain, vomiting, haematuria, pyuria, urinary incontinence and retention.

Symptom	NON DM	DM
Fever	40	36
Dysuria	36	28
Increased frequency of urination	22	16
Abdominal pain	22	19
Vomiting	20	14
Haematuria	12	9
Pyuria	8	11
Incontinence	8	9
Retention	6	6
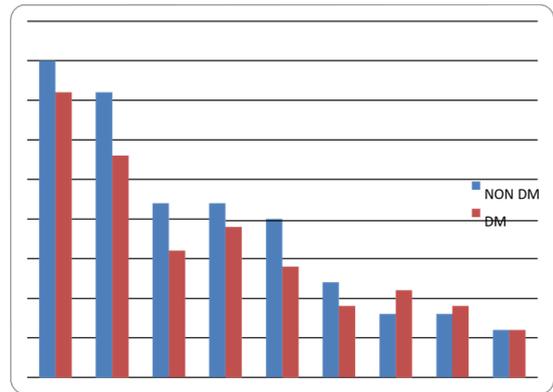
Fever was the most common presentation followed by dysuria. Urinary retention and incontinence were least common presentations of UTI . There was no significant statistical difference between diabetic and non-diabetic patients(p value >0.05).

DISCUSSION:
In current study , There was 48% patients in non diabetics and 8 patients in diabetics below 55 years age. There was significant difference found.

That was contrast to BONADIO Metai.(2006). They made observations that there was no significant different in age of UTI incidents between diabetics and non diabetes(8).

AH L A Letal. (1 97 0) found significant correlation between duration of diabetes and prevalence of bacteriuria. Such a correlations occurs in this study also (9)

Fever was the most common symptom associated with U T I in both diabetics and non-diabetics. So, the presence of fever should prompt a look at the urinary tract as a possible source of infection. However; there was no significant difference in the clinical symptoms among both groups.

SUMMARY
1. UTI is more common in diabetes than non diabetics. There was more prevalence of UTI infection in female than in male.
2. Mean age of presentation of UTI in Diabetics is 49.84 yr and Non Diabetics is 50.18 yr. So mean age of presentation of UTI is lower in diabetics.
3. Most common clinical characteristic of UTI infection was fever inbBoth diabeticsandnondiabetics.Followed by dysuria and increased frequency of urination. So

patients come with fever need to work up for UTI infections.
4. Indwelling catheter was the most common predisposing condition in both diabetics and non diabetics.There was no significant difference of predisposing condition between both groups.

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