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PROSPECTIVE STUDY OF 200 PATIENTS OF PROSTATITIS SYNDROME AT A TERTIARY CARE HOSPITAL IN NORTH KASHMIR.

Surgery

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ABSTRACT

Background: Prostatitis is a common diseases in middle aged men in north Kashmir, causing major morbidity with symptoms such as dysuria, perennial discomfort, low back ache, sexual dysfunction and very often infertility. In this study we prospectively studied 200 cases of prostatitis to analyse the symptomatology, clinical signs and results of expressed prostatic secretions (EPS) and urine to classify the disease. **Objective:** To analyse the symptoms, signs and laboratory results of EPS and urine in 200 patients. **Methods:** A hospital based prospective study of 200 patients of prostatitis was conducted from December 2016 to December 2019 and the results of microscopic and microbiological examination of expressed prostatic secretions and urine were analysed. **Results:** A total of 200 male patients studied showed dysuria (32%), perennial discomfort (52%) and increased urinary frequency (21%) as the most common presenting symptoms with duration of more than 6 months in 77% cases. Enlarged firm prostate was observed in 98% cases. Cultures of EPS and urine revealed E. Coli as most common infecting organism and WBC counts in EPS where more than 10 in significant number of patients. Among all types of prostatitis, chronic non-bacterial prostatitis was most prevalent in 43% cases studied. **Conclusion:** It was concluded that although reliance on symptoms to differentiate or diagnose prostatitis is appropriate to some extent, analysis of prostatic fluid and fractions of urine and classification of prostatitis offers a valuable insight into the importance, incidence and aetiology of prostatitis.

KEYWORDS

Prostatitis, dysuria, perennial discomfort, EPS

INTRODUCTION

Prostatitis is a common disease in middle aged men causing major morbidity and it has been observed that as many as 35% of men more than 50 years old have chronic prostatitis[1-3]. Patients of prostatitis are categorized into four main groups-acute bacterial, chronic bacterial, chronic non-bacterial (prostatosis) and prostatodynia. The diagnosis of prostatitis centers on microscopic and microbiological examination of expressed prostatic secretions (EPS) and microscopic examination of EPS is essential initial observation to identify prostatic inflammation. Other important estimations to be done on prostatic fluid are specific gravity, PH, cholesterol, acid phosphatase and LDH. Our present study therefore, in addition to taking help of history, physical examination and symptomatology, aims at complete microscopic, biochemical and bacteriological studies of expressed prostatic secretions supplemented by concomitant analysis of urine in diagnosis and management of prostatitis.

MATERIAL AND METHODS

This prospective study included 200 patients of prostatitis who reported to the department of General Surgery of Govt. Medical College, Baramulla, Kashmir from December 2016 to December 2019 and included:

1. Patients suspected to have prostatitis as per the symptoms of dysuria , perennial discomfort, low back ache with urinary symptoms or sexual dysfunction.
2. Patient suspected to have prostatitis referred by other general OPDs of our Institute as well as from other hospitals of North Kashmir. Detailed history and general physical examinations of the patients was done to exclude any systemic disease.

The clean voided urine and prostatic secretions (obtained by expressed prostatic massage) were portioned into four specimen :

I. VB1 : First voided 10 ml of urine .
II. VB2 : 10 ml of mid stream urine without interruption.
III. EPS : Expressed prostatic secrections obtained by prostatic massage.
IV. VB3 : First voided 10 ml of urine immediately after prostatic massage.

EPS was collected into two separate sterile containers and first fraction was cultured and second one preserved for WBC count, specific gravity and also estimation of cholesterol, acid phosphates and lactate dehydrogenase .First expressed fraction of EPS and specimens VB1,VB2, VB3 were inoculated and intubated overnight at a temperature of 37°C. Samples were considered sterile if no growth occurred after 24 hours and if present, colony characteristics of growth were noted.

Diagnosis of bacterial prostatitis was confirmed when bacterial counts of EPS and VB3 significantly exceeded those of urethral (VB1) and bladder (VB2) specimens.

The patients in whom no growth of bacteria occurred were labelled as "prostatosis"and those with no bacterial growth and no cells as 'prostatodynia'. The value of above mentioned microscopic and biochemical investigations were used as parameters to differentiate prostatitis , prostatosis and prostatodynia and application of treatment strategies in prostatitis syndromes.

RESULT AND DISCUSSION

In the present series of 200 cases, patients presented with various symptoms and the relative incidence and duration of symptoms are shown in Table 1 and Table 2 respectively. These observations are in conformity with the results of Richard E Berger et al(1989)[4], Edwin M Mears(JR) MD(1973)[5] T.N Ishimura et al(1980)[6], R N Thin et al(1983)[7], Krieger JN et al (1999)[8] and MC Naughten et al (2000)[9]

Table-1 Showing Various Symptoms With Their Incidence

S.No	Symptoms	No. of cases	Percentage
1	Dysuria	64	32
2	Perenial Discomfort	52	26
3	Increased frequency of micturition	42	21
4	Low back ache	16	08
5	Urethral discharge	12	06
6	Fever with rigors & chills	08	04
7	Malaise with prostration	06	03
8	Haematuria	00	00

Tabe-2 Duration Of Symptoms

S.No	Duration of symptoms	No. of cases	Percentage
1	< 1 month	04	02
2	> 1 month but less than 6 months	42	21
3	More than 6 months	154	77
	Total	200	100

Symptoms in most of the patients who were proved to have bacterial

prostatitis ranged between 6 months to 3 years. The sign revealed on digital rectal examination are shown in Table3.

Table-3 Signs On Digital Rectal Examination

S.No	Prostatic Characteristics	No. of cases	Percentage
1	Enlargement of size	16	08
2	Distortion of shape	00	00
3	Surface		
	a) Smooth	164	82
	b) Granular	36	18
	c) Nodular	00	00
4	Consistency		
	d) Soft	04	02
	e) Firm	196	98
	f) Hard	00	00
5	Tenderness	20	10
6	Mucosal adherence	00	00

Findings of tenderness, firmness and irregularity in contour of prostate on digital rectal examination collaborated with observations of R.N. Thin et al (1983)[7]and Roberts RO et al (1997)[10]

Localization cultures of 200 patients showed 180(90%) patients with all the fractions sterile (colony counts of more than 1000/ml were taken as significant growth). Only 20 patients had positive EPS and VB3 cultures. The observations made in this group of 20 patients are shown in Table 4.

Table-4 Results Of Localization Cultures.

No. of patients with positive Culture report	Culture				Organism isolated
	VB1	VB2	EPS	Vb3	
2	-ve	-ve	+ve	+ve	E-Coli
2	-ve	-ve	+ve	+ve	E-Coli
2	-ve	-ve	+ve	+ve	E-Coli
2	-ve	-ve	+ve	+ve	E-Coli
2	-ve	-ve	+ve	+ve	E-Coli
2	-ve	ISG	+ve	+ve	Klebseilla
2	-ve	-ve	+ve	+ve	E-Coli
2	-ve	-ve	+ve	+ve	Klebseilla
2	ISG	-ve	+ve	+ve	E-Coli
2	-ve	-ve	+ve	+ve	E-Coli
2	-ve	ISG	+ve	+ve	E-Coli

ISG= Insignifcant growth
+ve= 10 White blood cell counts/HPF of EPS

In our series, E Coli was detected as the causative organism in 16(8%) patients and Klebseilla was found in EPS and VB3 of 4(2%) patients. These findings are in similarity with the results of Stamey and Pfau (1970)[11]. George W. Drach et al (1974)[12], Edwin M. Meares (JR) et al 1973[5], W Weidmer et al (1991) [13], R.N.Thin et al (1983)[7],Nickel JC et al 2008[14] and Khan FU et al 2017[15] who observed obligate anaerobes such as E.Coli and Klebseilla as most prevalent ones in their series. The observed WBC counts in our series are shown in Table 5.

Table-5 WBC Counts In EPS

	WBC	No. of cases	Percentage
01	No cells or less than 10cells/HPF	70	35
02	>10 but<15 cells/HPF	84	42
03	>15 cells/HPF	46	23

All the patient with bacterial prostatitis were found to have full fields of WBC but in no case EPS was purulent on naked eye examination. In our study of 200 patients, 70(35%) patients were having less than 10 cells/HPF. These results are in similarity with the results of Joel L. Marmar et al (1980)[16], Lee DS et al (2016)[17]and Walker et al (2013)[18]

Table-6 Showing Highest,lowest And Average Values Of pH, Specific Gravity, Cholesterol And Acid Phosphate In EPS.

Expressed Prostatic Secretions				
	No. of patients	Highest value	Lowest value	Average value
pH	20	0.9	0.7	0.8
Specific gravity	20	1.020	1.017	1.018
Cholesterol	20	55mgs%	45mgs%	50 mgs%
Acid Phosphate	20	150 U/L	100 U/L	125 U/L

The average values of pH, specific gravity, cholesterol and acid phosphate in 10 patients with culture documented bacterial prostatitis is shown Table 6. Our findings are in conformity with results of Rodney U.Anderson et al (1976)[19], N.J.Blacklock (1970)[20], Winningham, Nemoy and Stamey (1968)[21], William R.Fair et al (1978)[22], Alphonse Pfau et al (1978)[23], Charles Hinggins et al (1942)[24], More et al (1941)[25], Edwin M. Meares Jr et al (1981)[26], Liel L et al (2009) [27] and Gill BC et al 2016[28]

Table-7 Incidence Of Different Types Of Prostatitis

Category	No. of cases	Percentage
1. Bacterial Prostatitis	20	10
a) Acute	04	02
b) Chronic	16	08
2. Chronic non-bacterial prostatiis	86	43
3. Prostadynia	74	37
Total	200	100

On the basis of above observations, the different entities of prostatitis syndromes observed are shown in Table 7. Thus 10% of patients of our series were suffering from bacterial prostatitis, 43% had chronic non bacterial prostatitis and 37% had prostatodynia. These findings are in similarity with those of Pelouze PS et al (1932)[29], Joel L marmar et al(1980)[16], Leykkegard-Neilson et al (1974)[30] and Kreiger JN et al 2016[31]

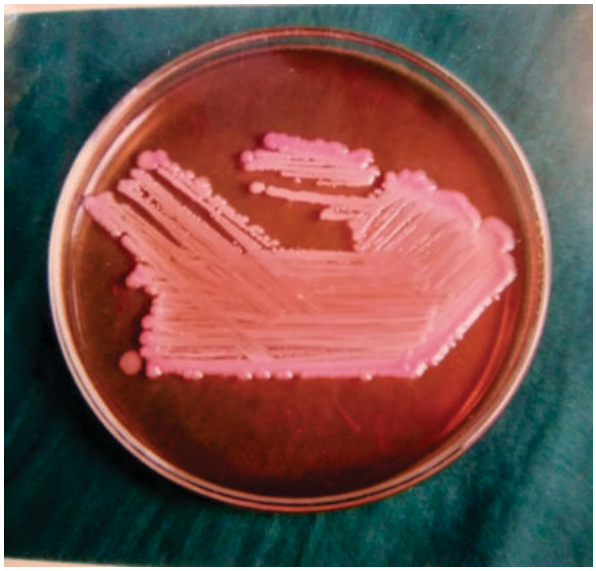

Figure 1: Culture plate showing colonies of Klebseilla

Figure 2: Culture plate showing colonies of E.Coli

CONCLUSION:

In the study thus conducted, it was concluded that although reliance on symptoms to differentiate or diagnose prostatitis is appropriate to some extent, analysis of prostatic fluid and fractions of urine and classification of prostatitis offer a valuable insight into the importance, incidence and aetiology of prostatitis. Proper clinical management therefore is possible only if we are specific in diagnosis.

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Conflicts of Interest – There are no conflicts of interest

Consent duly taken from all study subjects and there are no ethical implications(since this Institution has been recently upgraded to Medical College, the institutional ethical committee is not yet fully formed).

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