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Results of prostatic fluid analysis of 80 patients of prostatitis syndrome from Jan. 2014 to Dec. 2017

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Abstract
Prostatitis means inflammation of prostate by definition, is a common diseases in middle age men causing lower urinary tract symptomatology such as burning micturition, perineal discomfort, low backache, sexual dysfunction of sometime infertility.
The route of infection include ascending urethral infection with reflux of infected urine into prostatic ducts, haematogenous type of infection, lymphatic spread or invasion from rectal area or direct extension. The microscopic and microbiological examinations of expressed prostatic secretions are essential observation to identify this disease. The present study involves analysis of symptomatology, clinical signs complete microscopic, biological and bacteriological examination of expressed prostatic secretions in 80 patients from Jan. 2014 to Dec. 2017.
It was found that it is because of symptom to diagnose prostatitis to some extent but analysis of prostatic fluid and fraction of urine and classification of prostatitis offers a valuable insight into the importance, incidence and etiology of prostatitis
The aim and objective of this study is to differentiate between various types of Prostatitis: - Bacterial acute and chronic Prostatitis, non-bacterial and Prostatodynia. All the above said types of Prostatitis are called as Prostatic Syndrome.

Keywords: prostatitis, infertility, expressed prostatic secretions

Introduction
Prostatitis commonly effects middle aged men causing major morbidity and it is found that as many as 35% of men more than 50 years have chronic Prostatitis these patients are categorized into four main groups: acute, bacterial, chronic bacterial, chronic non-bacterial (Prostatitis) and prostatodynia.
The diagnosis of Prostatitis is done my microscopic and microbiological examination of expressed prostatic secretion (EPS) and microscopic examination of EPS is essential initial observation to identify prostatic inflammation. The other useful estimation to be done on prostatic fluid are specific gravity, PH, cholesterol acid phosphatase and LDH.
In our present study thus in addition to taking help of history, physical examination and symptomatology, aim at complete microscopic, biochemical and bacteriological studies of EPS (expressed prostatic secretion) supplemented by concomitant analysis of urine in the diagnosis and treatment of Prostatitis

Material and Method
This retrospective study was done on 80 patients who reported to the department of general surgery Distt. Hospital Rajouri of Jammu provence, Jammu and Kashmir (India) from Jan. 2014 to Dec. 2017 and included

1. Patient suspected of having Prostatitis as per symptoms of lower urinary tract symptomatology, dysuria, perineal discomfort, Low backache with urinary symptoms or sexual dysfunction.
2. Patient suspected of having Prostatitis referred from other general OPDs as well as from other Hospitals of 3 districts of the state. Detailed history and general physical examination of patients was done to exclude any other systemic diseases.

The clean voided urine and prostatic secretion obtained by (expressed prostatic-massage) were partitioned into four specimens according to (Mears. E.M and stamey 1968) [1-3]

1. VB1: First voided 10 mls of urine.
2. VB2: 10 mls of mid-stream urine without interruption.
3. EPS: Expressed Prostatic Secretion obtained by prostatic massage.
4. VB3: First voided 10mls of urine immediately after prostatic massage.

EPS was collected into two separate sterile containers and first fraction of urine was cultured and second one preserved for WBC count, PH, specific gravity and also estimation of cholesterol acid phosphatases and lactate dehydrogenase. First expressed fraction of EPS and specimen of VB1, VB2, VB3 were inoculated and intubated overnight at 37 degree c. temperature the simple were considered sterile if no growth found after 24 hours and if present then colony characteristic of growth were noted.
The diagnosis bacterial prostatitis was conformed when bacterial count of EPS and VB3 significantly exceeded those of urethral (VB1) and bladder (VB2) specimens. The patient in whom no growth of bacteria found were labeled as "Prostatitis" and those with no bacterial growth and no cells as "Prostatodynia" the values of above mentioned microscopic and biochemical investigation were used as parameters to differentiate prostatitis, Prostatitis and Prostatodynia and application of treatment strategies in prostatic syndrome.

Result and Discussions
In the present series of 80 patients, those presented with various symptoms with their relative incidence and duration of Symptoms are shown in Table -1 and Table – 2 respectively.

The observation are similar with the result of Richard E Bager *et al.* (1989) [4], Edwin M mears JR MD 1973 [5] T-Nishimura *et al.* (1980) [6], Ake Fritgofsson *et al.* (1973) [6] and sheikh Mehmood Rashid *et al.* 2007 [22].

The symptom in most of patients were proved because of bacterial prostatitis which ranges between 6 months and 3 years, sign reveled on digital rectal examination as shown in Table -3.

The finding of tenderness, firmness and irregularity in contour of prostate on (DRE) digital rectal examination collaborated with observations of R N thin *et al.* (1983) [7]. Localization of cultures of 80 patients 74 (92.5%) patients with fractions sterile (Colony count more than 1000 /mls were taken as significant growth) only 8 patients had positive EPS and VB3 culture. the observations made in these groups of 8 patients are shown in Table – 4.

In our series E coli was detected as causative organism 7 (8.75%) patients and Klabseilla was found in EPS and VB3 of 2 (2.5%) patients. these findings are similar with the results of Stomey and Pfeu (1970) [8] George W (1991) [10] RN thin *et al.* 1983 and Skeikh Mehmood Rashid *et al.* 2007 [22] who observed obligate anaerobe such as E-coli and Klabseilla were most prevalent one in their series. The observed WBC count in our series is shown in Table 5.

All the patients will bacterial prostatitis were having full fields of WBCS but in no case EPS was purulent on naked eyes examination. In our study of 80 patients 28
(35%) were having less than 10 cells / HPF, 34 patients (42.5%) had more than 10 cells /HPF only 18 (22.5%) had more than 15 cells /HPF, these observations are similar with the result of Jeol L Marmar *et al.* (1980) [11]. The average value of PH, specific gravity, cholesterol acid phosphatase in 8 patients with culture the documented bacterial prostatitis are shown in Table -6

Our finding are similar with the result of Rodney U Anderson *et al.* (1976) [12], N J Blacklock (1970) [13], winingham, Nemoj and stomey (1968) [14], William R flair *et al.* (1978) [15], Alphouse Pfau *et al.* (1978) [16] charles higgins *et al.* (1942) [17], More *et al.* (1941) [18], Edwin M.Meare Jr. (1981) [19] Skeikh Mehmood Rashid *et al.*. 2007 [22]

On the basis of above said observations the different types of Prostatits Sydromes observed are shown in Table – 7. The 8 (10%) of patients of our series were suffering from bacterial prostatitis 34 (42.5%) having chronic non-bacterial prostatitis and 30 (37.5%) prostatodynia. These finding are in similarity with the findings of Pelouze ps *et al.* (1932) [20], Joel Marmer *et al.*. (1980) [11], Leykkegavd Neilson *et al.* (1974) [21] sheikh mehmood *et al.* (2007) [22]

Table 1: Showing various symptoms with their incidence

S. No.	Symptoms	No of cases	%
1.	Dysuria	26	32.5
2.	Perineal discomfort	22	27.5
3.	Increased frequency of micturition	18	22.5
4.	Low back ache	06	7.5
5.	Urethral discharge	05	6.25
6.	Fever with rigor & chills	03	3.75
7.	Malaise with prostration	2	2.5
8.	Haematuria	00	00

ISG: Insignificant growth, +ve: 10 white blood cell counts/HPF of EPS

Table 2: Duration of symptoms.

S. No.	Duration of Symptoms	No of cases	%
1.	< 1 month	02	2.5
2.	> 1 month but less than 6 months	17	21.25
3.	More than 6 months	62	77.5
Total		80	100

Table 3: Signs on digital rectal examination.

S. No.	Prostatic Characteristics	No of cases	%
1	Enlargement of size	06	7.5
2	Distortion of shape	00	00
3	Surface		
	a) Smooth	64	80
	b) Granular	15	18.75
	c) Nodule	00	00
4	Consistency		
	d) Soft	02	2.5
5	e) Firm	78	98.79
	f) Hard	00	00
6	Tenderness	08	10
7	Mucosal adherence	00	00

Table 4: Results of localization cultures.

Patient S. No.	Cultures				Organism
	VB1	VB2	EPS	VB3	
1.	-ve	-ve	+ve	+ve	E-Coli
2.	-ve	-ve	+ve	+ve	E-Coli
3.	-ve	-ve	+ve	+ve	E-Coli
4.	-ve	-ve	+ve	+ve	E-Coli
5.	-ve	ISG	+ve	+ve	Klebseilla
6.	-ve	-ve	+ve	+ve	E-Coli
7.	-ve	-ve	+ve	+ve	Klebseilla
8.	ISG	-ve	+ve	+ve	E-Coli
9.	-ve	-ve	+ve	+ve	E-Coli
10.	-ve	ISG	+ve	+ve	E-Coli

ISG= Insignificant growth +ive = 10 White blood cell counts/HPF of EPS

Table 5: WBC counts in EPS

S. No.	WBC	No. of cases	%
1	No Cells or less than 10 cells/HPF	28	35
2	> 10 but <15 cells/HPF	34	42.5
3	> 15 cells/HPF	18	22.5

Table 6: Showing highest, lowest and average values of pH, specific gravity, cholesterol and acid phosphatase in EPS.

		Expressed prostatic secretions		
	No. of patients	Highest value	Lowest value	Average value
PH	08	09	07	08
Specific gravity	08	1.020	1.017	1.018
Cholesterol	08	55 mgs%	45mgs%	50 mgs%
Acid phosphatase	08	150 U/L	100 U/L	125 U/L

Table 7; Incidence of different types of prostatitis

S. No.	Category	No. of cases	%
1	Bacterial Prostatitis	08	10
	a) Acute	02	2.5
	b) Chronic	06	7.5
2	Chronic non-bacterial prostatitis	34	42.5
3	Prostatodynia	30	37.5
Total		80	100

Conclusion

This study was conducted to conclude that the reliance on symptoms to differentiate or diagnose prostatitis in proper way but to some extent, analysis of prostatic fluid and fractions of urine and classification of prostatitis offer a valuable insight into the importance, incidence and etiology of prostatitis. So, Proper clinical management therefore is possible only when we are specific in diagnosis.

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