

PREVALENCE, INCIDENCE ESTIMATION, RISK FACTORS OF PROSTATITIS IN SOUTHERN IRAQ: CASE-CONTROL OBSERVATIONAL STUDY.Hussein N. AlDhaheri¹, Ihsan E. AlSaimary^{1*} and Murtadha M. AlMusfer²¹Department of Microbiology, University of Basrah, Collage of Medicine, Department of Microbiology, Basrah, Iraq.
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SUMMARY

The Aim of this study was to determine Immunogenetic expression of Toll-like receptor gene clusters related to prostatitis, to give acknowledge about Role of TLR in prostatitis immunity in men from Basrah and Maysan provinces. A case-control study included 135 confirmed prostatitis patients And 50 persons as a control group. Data about age, marital status, working, infertility, family history and personal information like (Infection, Allergy, Steroid therapy, Residency, Smoking, Alcohol Drinking, Blood group, Body max index (BMI) and the clinical finding for all patients of Prostatitis were collected. From total number of (135) patients with prostatitis were taken from two provinces (Basrah and Missan) from the Basrah teaching hospital and Missan teaching hospital that included in the present study , the age of patients was between 40 - >70 years and (50) individuals regarded as control group without any urological problems were also studies , the maximum number of prostatitis patients was found within the age group 60-69 years(71.0%) , followed by age group 50-59 years (69.0%) , above 70 years (65.0%) ,and age group 40-49 years (39.0%). P-value <0.0001, The study recorded that a significant variation in the distribution of patients with Prostatitis and Prostatitis in Basrah and Missan province, The present study show the family history of various age groups with Prostatitis that found with P-value 0.0164 that show a positively significant of family history with Prostatitis , The prevalence of Blood groups in patients with prostatitis are showing to be high with three types of blood groups A+ 51 (27.57%) , B+ 44 (23.78%) , O+ 59 (31.89%) and AB+ 22 (11.98%) , P-value: 0.6594 and by the Logistic Regression in our model find that a negative significant of blood groups and Prostatitis , the results show that the body mass index in patients found with P-value <0.0001, that show a positive significant relationship.

KEYWORDS: prostatitis , prevalence , incidence.**INTRODUCTION**

Prostatitis is an inflammation of the prostate gland. There are four various categories of prostatitis will be described in this review and the classification of these types depends on the symptoms and the manifestation of the condition (Johnson, 2017). Three of these types are symptomatic and one is an asymptomatic. The first type is Acute bacterial prostatitis (category I) occur because of a bacterial infection, usually of a gram negative bacteria such as *Escherichia coli*, and the patients who have symptoms that includes significant pelvic pain, dysuria because of prostatic swelling and systemic fever. And there are scarcely long term side effects of this type of prostatitis after antibiotic therapy (Krieger, et al., 1999 and Palapattu, et al.,2005).

One of the difficulties in determining the mechanisms of prostatitis is that the categories I and II prostatitis are caused by bacteria (Pontari and Ruggieri. , 2008), including *Escherichia coli*, *Klebsiella*, *Enterobacter* and *Pseudomonas*, greater numbers of cases are category III,

for that etiology and pathogenesis are unknown (Weidner, et al., 1991).

Studies to now have failed to determine an ongoing infection in these men from any sexually transmitted organisms, including *Chlamydia trachomatis*, *Ureaplasma urea-lyticum*, *Mycoplasma.Hominid* or *Trichomonas vaginalis* (Krieger and Riley., 2002). The use of molecular techniques to look for uropathogenic bacteria in CPPS was recently concise. The starting point for investigation into the pathogenesis of CP/CPPS it's the inflammation. Traditionally the total number of white blood cells (WBCs) in prostatic fluids has studied and believed to be making for an inflammatory process that combined with the symptoms of prostatitis. The use of WBCs as evidence of inflammation is limited for several reasons. WBCs may be found in the prostatic fluid or seminal plasma of men with asymptomatic prostatitis also in men with pelvic pain (Nickel, et al., 2003). Therefore, in symptomatic men, none of the measures of the NIH-CP Symptom

Index, including subsets for pain, urinary and quality of life, may show any correlation with WBCs in EPS, VB3 or seminal plasma. Another reasoning against an association between inflammation and symptoms is in the patients with category IIIB have symptoms but without inflammation and in contrast with those who have category IV be marked with inflammation but no symptoms.

MATERIALS AND METHODS

Sampling

This case control study was conducted between October 2019 to July 2020 in Basrah and Missan province. During collection process data about each patient were reported in the paper questionnaire for each one, which included age, marital status, infertility, family history, personal information and clinical finding of the diseases. Blood samples were collected from peoples that are symptomatic and asymptomatic patient in various hospitals of Basrah and Missan province. From a total number of (135) patients with prostatitis were taken from two provinces from the Basrah teaching hospital and Missan teaching hospital that included in the present study and the age of patients was between 40 - >70 years and (50) individuals regarded as a control group without any urological problems were also studied.

Demographics and clinical studies

Various clinical and demographic parameters were included in this study that includes:

- 1- Age
- 2- Marital status
- 3- Working
- 4- Infertility
- 5- Family history
- 6- Personal history, such as (previous infection, allergy, taken of steroid therapy, residency, smoking, alcohol drinking, blood group and body mass index).
- 7- Body Mass Index: $\text{Weight (Kg)} / \{\text{Height (m)}\}^2$

Clinical examination

- 8- **Lower urinary tract symptoms:** It is necessary to identify that the patient may be suffering from pain, it can be Irritative (dysuria, frequency and Urgency), or Obstructive signs such as (weak stream, Hesitency, Intermittency and Retention of urine), despite of other symptoms like (Fever, Rigor, perineal pain, Low back pain and Urethral discharge).
- 9- **Physical examination:** may not be pertinent physical finding present in patients, beside the abdominal exam may reveal if there is any suprapubic tenderness.
- 10- **Digital Rectal exam (DRE):** to see if the prostate gland is boggy or tender prostate.

- 11- **Imaging:** ultrasound to determine the size of an enlarged prostate gland, all of these exams are done by the specialized urologist exclusively.

Statistical analysis

Statistical analysis is performed with SAS JMP Pro statistical program version 13.2.1 and Microsoft Excel 2013. Numerical data were described as mean, standard deviation of the mean. Logistic regression was used for comparison between various groups. The lowest level of accepted statistical significant difference is below or equal to 0.0001.

RESULTS

Table (1) show the effects of various demographical factors effecting patients with prostatitis started with various age groups that show the majority of patients belong to age group 50-59 years 46 (69.0%) , followed by age group 60-69 years 25 (71.0%). P-value <0.0001, other demographic factors was infertility show that the majority of patients have a child 110 (59.46%), and whom don't have zero. Marital status of our patients were married 110(59.46%) and there was no one single., the family history was also study for patients and the majority was with no diseases in their family 98(52.97%) and whom have diseases was 12(6.49%) , demographical factor location was also study in two province with 55(29.79%) for each one ,with P-value <0.0001, smoking was another demographical factors that show 64(34.59%) of patients were not smoking and 46(24.86) were smoke with P-value 0.4936.,demographical factors alcohol drinking was study that show.

Demographic Factors	Prostatitis		Prostitis		Total		P -value
	No.	%	No.	%	No.	%	
Alcohol Drink							
Yes	4	2.16	2	1.08	6	3.24	0.1678
No	106	57.30	16	8.65	122	65.95	
Blood Group							
A -	1	0.54	0	0	1	0.54	0.6594
A +	35	18.92	4	2.16	39	21.08	
AB+	15	8.11	2	1.08	17	9.19	
B -	3	1.62	2	1.08	5	2.70	
B +	25	13.51	5	2.70	30	16.22	
O -	1	0.54	0	0	1	0.54	
O +	30	16.22	5	2.70	35	18.92	
Body mass							
Under weight	2	1.08	10	5.41	12	6.49	<0.0001
Normal	9	4.86	0	0	9	4.86	
Over weight	59	31.89	6	3.24	65	35.13	
Obese	40	21.62	2	1.08	42	22.7	

the majority of patients were not drink 106(57.30%) and only 4(2.16%) they were drink with P-value 0.1678, the demographical factors blood grouping was study and show the majority of patients belong to blood group A+

35(18.92%) , followed by blood group O+ 30(16.22%) , and blood group B+25(13.51%) with P-value 0.6594 , the final demographical factors was the body mass index that show the majority of patients with overweight BMI

Table: 1. Illustrates the effects of various demographic factors affecting various age groups of patients with prostatitis.59(31.89%) , followed by obese 40(21.62%) with P-value <0.0001 . As in the table (1).

Demographic Factors	Prostatitis		Prostitis		Total		P-value
	No.	%	No.	%	No.	%	
40 -49 year	23	39.0	0	0	23	39.0	<0.0001
50 -59 year	46	69.0	3	4.0	49	73.0	
60 -69 year	25	71.0	7	20.0	32	91.0	
> 70year	15	65.0	8	35.0	23	100.0	
Infertility							
Yes	110	59.46	18	9.73	128	69.19	Non
No	0	0	0	0	0	0	
Marital . Status							
Single	0	0	0	0	0	0	0.3062
Married	110	59.46	18	9.73	128	69.19	
Family History							
No	98	52.97	18	9.73	116	62.7	0.0164
Yes	12	6.49	0	0	12	6.49	
Location							
Basrah	55	29.73	4	2.16	59	31.89	<0.0001
Missan	55	29.73	14	7.57	69	37.3	
Smoking							
No Smoking	64	34.59	9	4.86	73	39.45	0.4936
Smoking	46	24.86	9	4.86	55	29.72	

Distribution of patients within various age groups.
Table (2) shows the maximum number of prostatitis patients was found within the age group 60-69 years

(71.0%), followed by age group 50-59 years (69.0%), above 70 years (65.0%), and age.

Table: 2. Illustrates the number and percentage of prostatitis patients and control, according to age groups.

Age Groups	Prostatitis		Prostitis		Control		P-value
	No.	%	No.	%	No.	%	
40 -49 year	23	39	0	0	36	61	0.1266
50 -59 year	46	69	3	4	18	27	0.5859
60 -69 year	25	71	7	20	3	9	0.0447
> 70year	15	65	8	35	0	0	0.5018

P <0.0001

group 40-49 years (39.0%). P-value <0.0001. As in the following table (3.2) and figure (3-2).

Figure 1 Show the number and percentage of prostatitis patients and control group according to age groups.

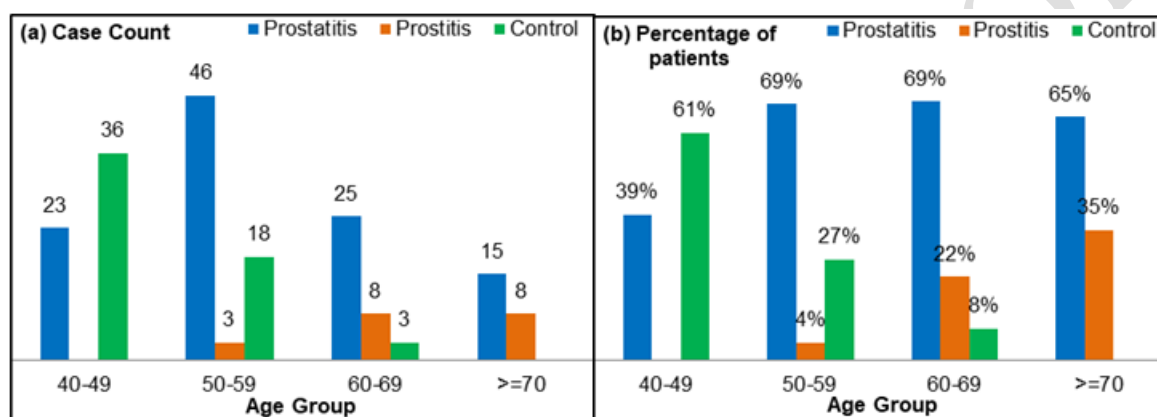


Figure: 1. The number and percentage of prostatitis patients and control, according to age groups.

Location of various age groups of patients with prostatitis.

Table (3) shows the location of various age groups of patients with prostatitis and the majority of cases was

found in the age group 50-59 years in mission (41.18%), followed by age groups 60-69 years in Basrah (41.67%), and age groups >70 years in Basrah (56.52%), with P-value <0.0001 as in the table (3-3)

Table: 3. illustrate the location of various age groups of patients with prostatitis.

Age groups	Location	Prostatitis		Prostitis		Control		P-value
		No.	%	No.	%	No.	%	
40 -49	Basrah	8	13.56	0	0	5	8.47	0.0616
	Missan	15	25.42	0	0	31	52.54	
50 -59	Basrah	13	25.49	0	0	3	5.88	0.1599
	Missan	21	41.18	3	5.88	11	21.57	
60 -69	Basrah	15	41.67	1	2.78	0	0	0.0158
	Missan	11	30.56	6	16.67	3	8.33	
>70	Basrah	13	56.52	3	13.04	0	0	0.0151
	Missan	2	8.70	5	21.74	0	0	

P <0.0001

Smoking

Table (4) show the related of smoking and patients with prostatitis by various age groups in first age group 40-49 years the percent's of non- smoke was(15.25%) and who were smoking (23.73%) , the second age group 50-59 years non – smoke was (38.81%) and smoking was

(29.85%) , third age group 60-69 years non-smoking was (50.00%) while smoking (22.22%) ,and the final age group >70 years was non-smoking (50.00%) and smoking was (6.25%) all age groups with P- value 0.4936. As seen in the following table (4)

Table: 4. Illustrate numbers and percentages of smoking in patients with prostatitis.

Age groups	Smoking	Prostatitis		Prostitis		Control		p-value
		No.	%	No.	%	No.	%	
40 -49	No Smoke	9	15.25	0	0	20	33.90	0.2170
	Smoke	14	23.73	0	0	16	27.12	
50 -59	No Smoke	26	38.81	1	1.49	7	10.45	0.3668
	Smoke	20	29.85	2	2.99	11	16.42	
60 -69	No Smoke	18	50.00	3	8.33	1	2.78	0.2675
	Smoke	8	22.22	4	11.11	2	5.56	
>70	No Smoke	8	50.00	4	25.00	0	0	0.1421
	Smoke	1	6.25	3	18.75	0	0	

Family History

Table (5) shows the family history of various age groups with Prostatitis, and in the first age group 40-49 years was (33.90%) of patients were not have the disease in their families and (5.08%) patients that have the disease in their families, the second age group 50-59 years was (61.19%) patients were not have the disease in their

families and (7.46%) patients with the disease in their families, the third age group 60-69 years the patients were not have the disease in their families was (66.67%) and those who do have the disease was (5.56%), the final age group >70 was (56.52%) patients who do not have the disease and patients with the disease was (8.70%). With P-value 0.0164, as see in the table(5).

Table: 5. Illustrates numbers and percentages of family history of patients with prostatitis.

Age groups	History	Prostatitis		Prostitis		Control		P-value
		No.	%	No.	%	No.	%	
40 -49	No	20	33.90	0	0	35	59.32	0.1292
	Yes	3	5.08	0	0	1	1.69	
50 -59	No	41	61.19	3	4.48	18	26.87	0.1393
	Yes	5	7.46	0	0	0	0	
60 -69	No	24	66.67	7	19.44	3	8.33	0.5101
	Yes	2	5.56	0	0	0	0	
>70	No	13	56.52	7	34.78	0	0	0.1785
	Yes	2	8.70	0	0	0	0	

P 0.0164**Blood Group**

Table (6) show Blood grouping distribution among patients with prostatitis, the most common blood group in age group 40-49 years was blood group A+(13.56%), followed by blood group B+ and O+ was(10.17%), and in the age group 50-59 years most common blood groups were A+ and O+(19.40%), followed by blood groups AB+ and B+(13.43%), in the age group 60-69 years were blood groups A+ and B+(25.00%) most predominate,

finally age group >70 years, the most predominate blood groups were A+ and O+ (25.00%), and in the Prostitis we found that blood groups in age group 50-59 years were A+, B- and O+ 1(1.49%), followed in the 60-69 years age group found that A+ and B+ were 2(5.56%) and both AB+ and O+ 1(2.78%), finally age group >70 years that found the blood groups were both A+ and O+ 4(25.00%) followed by B+ 1(6.25%). P-value 0.6594. As seen in the table (6).

Table: 6. Shows Blood grouping distribution among patients with prostatitis.

Age groups	B. Group	Prostatitis		Prostitis		Control		P-value
		No.	%	No.	%	No.	%	
40 -49	A+	8	13.56	0	0	8	13.56	0.7259
	AB+	1	1.69	0	0	3	5.08	
	B-	2	3.39	0	0	2	3.39	
	B+	6	10.17	0	0	9	15.25	
	O+	6	10.17	0	0	14	23.73	
50 -59	A-	1	1.49	0	0	0	0	0.4185
	A+	13	19.40	1	1.49	3	4.48	
	AB+	9	13.43	0	0	2	2.99	
	B-	1	1.49	1	1.49	0	0	
	B+	9	13.43	0	0	4	5.97	
O+	13	19.40	1	1.49	9	13.43		

60 -69	A+	9	25.00	2	5.56	1	2.78	0.8761
	AB+	3	8.33	1	2.78	0	0	
	B-	1	2.78	0	0	0	0	
	B+	9	25.00	2	5.56	1	2.78	
	O-	1	2.78	0	0	0	0	
	O+	4	11.11	1	2.78	1	2.78	
>70	A+	4	25.00	1	6.25	0	0	0.1879
	AB+	0	0	1	6.25	0	0	
	B+	1	6.25	3	18.75	0	0	
	O+	4	25.00	2	12.50	0	0	

P 0.6594

Body Mass Index

The majority of our patients with Prostatitis belong to overweight group 59 (31.89%) followed by obese

patients 40 (21.62%). P-value <0.0001. As seen in the following table (7)

Table: 7. Illustrates the number and percentage of Body mass index in patients with Prostatitis.

Body mass index	Prostatitis		Prostitis		Total		P-value
	No.	%	No.	%	No.	%	
Underweight	2	1.08	10	5.41	12	6.49	<0.0001
Normal	9	4.86	0	0	9	4.86	
Overweight	59	31.89	6	3.24	65	35.13	
Obese	40	21.62	2	1.08	42	22.7	

P <0.0001

DISCUSSION

From total number of (135) patients with prostatitis, the age of patients was between 40 - >70 years and (50) individuals regarded as control group without any urological problems were also studied, the maximum number of prostatitis patients was found within the age group 60-69 years (71.0%), followed by age group 50-59 years (69.0%), above 70 years (65.0%), and age group 40-49 years (39.0%). P-value <0.0001, the results of the present study goes with In a national survey of physician visits in the United States from 1990 to 1994, all types of prostatitis, including acute prostatitis, was encountered significantly more frequently in 36 to 65-year olds than in the 18 to 35-year-old age group. **Collins, et al., (1998)**. Also say as men age the diagnosis of BPH becomes more prevalent. We had suspected that for the same constellation of genitourinary symptoms a man may be diagnosed with prostatitis or BPH based only on age. However, our findings revealed that compared with men 66 years old or older prostatitis was more commonly diagnosed in 36 to 65-year-old men than in 18 to 35-year-old men. This finding is contrary to that of previous reports that prostatitis is more commonly a condition of younger men. **(Rous., 2002 and Roberts, et al., 1997)**.

(Mehik, et al., 2000) he stated the risk of having or having had prostatitis was determined to increase directly with age. This risk was 1.7 times higher in men of 40–49 years of age than in those aged 20–39 years, and was 3.1 times greater in those aged 50–59 years than in those aged 20–39 years.

Another study found no significant differences in the prevalence of prostatitis according to age. In the Olmsted Country study, when compared with the odds of a prostatitis diagnosis in men aged 66 years and older, the odds of a diagnosis of prostatitis was 1.6, 1.6 and 1.2-fold greater in those aged 18 to 35, 36 to 50 and 51 to 65-year olds respectively. **(Roberts, et al., 1998)**.

The exact role of age in the development of prostatitis remains somewhat unclear. Age may constitute a confounding factor, because of its association with other factors, such as behavioral and environmental concerns. According to the findings that were found in our study, which is that age plays a major role in determining the incidence of prostatitis in men, and this is attributed to the nature of the person in Iraq prone to marriage and the large number of sexual practices that may be the cause of the proliferation of this disease at advanced ages.

(hyeon, et al., 2005 and Jiang, et al., 2013) found there is a significant positive relationship between prostatitis and prostate cancer, by their study of 20 case control studies were included, in the present study the age and levels of PSA have an association and may cause prostatitis after diagnosis of patients and control groups so the old men should take care about this in future.

The present study recorded that a significant variation in the distribution of patients with Prostatitis and Prostitis in Basrah and Missan province according to various age groups that show different percent's as age group 40-49 years found Basrah province with (13.56%), Missan with (25.42%), and age group 50-59 years with (25.49%) in Basrah and (41.18%) in Missan, age group 60-69

years found (41.67%) in Basrah and (30.56%) in Missan, finally age group >70 years found (56.52%) in Basrah and in Missan about (8.70%). Depend on the number of samples that taken from the two provinces with a P - value <0.0001

The most commonly used measures of disease occurrence or frequency in epidemiology are prevalence and incidence, the prevalence of prostatitis refer to the proportion of people who have prostatitis at a specific instance in time, and the incidence of prostatitis refers to the occurrence of new cases. (Schappert, 1994).

In 1992-1996, (Moon, *et al.*, 1997) they found the overall prevalence of the physician's diagnosis of prostatitis was 11%. In a survey of younger men from the Wisconsin National Guard, that found 5% of respondents reported a history of prostatitis.

In the present study, that found 84(45.41%) of patients with prostatitis were smoking while 110(54.59%) were non-smoking, with P- value 0.4936 that show there are no association between smoking and prostatitis among every age group and Prostatitis, our results agree with (Zhang, *et al.*, 2015) that say there are no association between smoking and the Prostatitis in their study, Information on cigarette smoking and hypertension was also collected at baseline. Specifically, participants were asked whether they currently smoked or had smoked in the past.

Two previous studies demonstrated positive associations for smoking status (Bartoletti, *et al.*, 2007 and Tang, *et al.*, 2014) that they found there are an association between prostatitis and smoking. Although the PE group had a significantly higher incidence of drinking and smoking (P<0.001). Of the 438 outpatients complaining of Premature ejaculate, according to the criteria and classification of (Waldinger, 2008) this may associated with chronic prostatitis and also prostatitis like symptoms.

(Moreira, *et al.*, 2015) The association of smoking with inflammation in the baseline, 2- and 4-year biopsies were evaluated with univariable and multivariable logistic regressions. At study enrollment, 1,233 (15%), 3,203 (39%) and 3,754 (46%) men were current, former and never smokers, respectively. Current smokers were significantly younger and had smaller prostates than former and never smokers (all P<0.05). Former smokers were significantly heavier than current and never smokers (P<0.001) in univariable analysis, current smokers were more likely to have acute inflammation than former (OR=1.35; P=0.001) and never smokers (OR=1.36; P=0.001). The results were unchanged at 2- and 4-year biopsies. In contrast, current smoking was linked with chronic inflammation in the =-undergoing prostate biopsy, current smoking was independently associated with acute and possibly chronic prostate inflammations. (Moreira, *et al.*, 2015) also discuss

tissue damage associated with smoking is considered the main cause for increased numbers of neutrophils seen in acute inflammation. The largest study published by (Liang, *et al.*, 2009) evaluating 12,743 Chinese men found a significant association between active smoking status and self-reported prostatitis-like symptoms.

In the present study, family history of various age groups with Prostatitis, and in the first age group 40-49 years was (33.90%) of patients were not have the disease in their families and (5.08%) patients that have the disease in their families, the second age group 50-59 years was (61.19%) patients were not have the disease in their families and (7.46%) patients with the disease in their families, the third age group 60-69 years the patients were not have the disease in their families was (66.67%) and those who do have the disease was (5.56%), the final age group >70 was(56.52%) patients who do not have the disease and patients with the disease was (8.70%). With P-value 0.0164 that show a positively significant of family history with Prostatitis, our study goes with (Collins, *et al.*, 2002) determined that having a family history of prostate cancer was associated with a slightly greater probability of having a history of prostatitis. In the Health Professionals Follow-Up Study, it was found that men with a history of BPH were at 7.7-fold greater odds, and men with moderate and severe lower urinary tract symptoms at 1.8-fold and 2.8-fold greater odds, respectively, of having a history of prostatitis (Collins, *et al.*, 2002 and Rothman, *et al.*, 2004) reported that men suffering from prostatitis were more likely to complain of dysuria, although other urinary symptoms were similar among prostatitis cases and controls. The positive association of family history and prostatitis in the present study may contribute to the genetic relationship between the patients and their families that transfer the genetic information from father to son.

The prevalence of Blood groups in patients with prostatitis is shown to be high with three types of blood groups A+ 51 (27.57%), B+ 44 (23.78%), O+ 59 (31.89%) and AB+ 22 (11.98%), while other types record low percentage like A- 1 (0.54%), B- 7 (3.78%), and O- 1 (0.54%). As seen about the frequencies of blood groups the more prevalence blood groups in the present study are O+ , A+ and B+ with moderate number of cases with AB+ but the P-value: 0.6594 and by the Logistic Regression in our model found that a negative significant of blood groups and Prostatitis. And in the Prostatitis we found that blood groups in age groups 50-59 years were A+, B- and O+ 1 (1.49%), followed in the 60-69 years age group found that A+ and B+ were 2 (5.56%) and both AB+ and O+ 1 (2.78%), finally age group >70 years that found the blood groups were both A+ and O+ 4 (25.00%) followed by B+ 1 (6.25%) , the P-value: 0.6594 and by the Logistic Regression in our model find that a negative significant of blood groups and Prostatitis and that goes with (Markt, *et al.*, 2015) that found ABO blood type was not associated with risk of aggressive prostate cancer. Blood group can be traced to

a single gene, ABO, located on chromosome 9q34. ABO encodes a glycosyltransferase that catalyzes the transfer of carbohydrates to red blood cells, thereby forming the distinct antigenic structures of the A and B blood groups. The ABO blood group has been associated with several malignancies, including cancers. (Gates, et al., 2011, Joh, et al., 2012 and Xie, et al., 2010), The potential mechanisms linking ABO to risk of cancer are unclear. It has been suggested that ABO antigens interfere with intercellular adhesion and membrane signaling, and may be involved with angiogenesis (Joh, et al., 2012). In addition, ABO blood group may affect the systemic inflammatory state and immune surveillance for malignant cells (Xie, et al., 2010). And disagree with (Stakišaitis, et al., 2018) he says the results of his study indicated that blood type B was associated with the risk of prostate and bladder cancer, and could be evaluated as a determinant in the negative association with longevity. The ABO blood phenotype frequencies vary in different ethnic/racial groups; they vary globally, where the type O frequency is most common and approaches 100% among the indigenous populations of South and Central America; the phenotype A is more common in Eastern and Central Europe, the phenotype B being more common in China, India and the AB type is more frequent in Korea, China and Japan. (Bodmer, 2015).

Also the results show that the body mass index in patients found with overweight category 59 (31.89%) followed by obese patients 40 (21.62%) with P-value <0.0001. (Hsing, Sakoda & Chua, 2007). Say that The association between obesity and prostate diseases has been extensively investigated in prostate cancer, with conflicting results, the relationship between obesity and prostate inflammatory diseases has been poorly studied, with just a few studies marginally investigating the association between BMI and signs and symptoms of prostate inflammation (Wallner, et al., 2009) or chronic prostatitis, in particular pain (Bhojani, et al., 2008).

Lotti, et al., (2011) they speculated that in the prostate, as in other organs, an increase in arterial PSV could be considered a reliable marker of inflammation. Thus, a significant association appears to exist between higher BMI and several prostate CDU and biochemical abnormalities, all suggestive of prostate chronic inflammation. (AlSaimary, et al., 2009)

The results of the present study agree with (Collins et al., 2002) that say Men with body mass index of greater than 27 were found to have 0.8-fold odds (95% CI, 0.7–0.9) of having a history of prostatitis, when compared with those with body mass index of 27 or less. Also say In the Health Professionals Follow-Up Study, a small but significant positive effect was seen for obesity, and our results disagree with (Lotti, et al., 2011) no association among BMI, prostatitis symptoms or semen parameters was observed. So the BMI show an effect on men and

their susceptibility to have prostatitis as illustrate in this study.

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