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PREVALENCE OF PROSTATE CANCER IN THREE CANCER PREVENTION CAMPAIGNS IN MONTES CLAROS, MINAS GERAIS, BRAZIL

Casos novos de câncer de próstata detectados em um mutirão

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Abstract: Objective: To investigate the prevalence of prostate cancer in the population attended in the 6th, 7th, and 8th Cancer Prevention Campaigns held in the city of Montes Claros, in the state of Minas Gerais, Brazil. **Methodology:** This is an epidemiological descriptive prevalence study. Data were collected from patients attending the Urology Tent in the Cancer Prevention Campaigns conducted from 2016 to 2018. **Results:** The sample consisted of 1,554 ind ividuals, most of which were in 60-69 years old. In 2016, 481 men were attended, 37% of which have never been submitted to rectal examination, with altered results for this exam in 23.6% of the cases. In 2017, from 501 men, 25.5% have never had rectal examination, with altered results for this exam in 21.6% of the cases. In 2018, 572 men were attended, 61.0% of which have never been submitted to rectal examination, with altered results for this exam in 9.3% of the cases. **Conclusion:** In 2016, 13 cases of prostate cancer were confirmed. In 2017, 6 cases were diagnosed, and in 2018 there were 17 cases, amounting to 36 cases of prostate cancer.

Keywords: Male health; Prevention of diseases; Prostatic neoplasms.

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Resumo: Objetivo: Verificar a prevalência do câncer de próstata na população assistida nos 6º, 7º e 8º Mutirões de Prevenção ao Câncer, realizado na cidade de Montes Claros – MG. **Metodologia:** Trata-se de um estudo epidemiológico de prevalência descritivo. Foram analisados dados obtidos em atendimentos realizados na tenda da urologia dos Mutirões de Prevenção ao Câncer – realizados pela Associação Presente, nos anos de 2016 a 2018. **Resultados:** A amostra foi composta por 1554 indivíduos, a maioria se encontrava na faixa etária de 60-69 anos. No ano de 2016 foram atendidos 481 homes, 37% nunca haviam realizado toque retal, e o exame foi considerado anormal em 23,6% dos casos. No ano de 2017 de 501 homens, 25,5% nunca haviam realizado toque retal, e o exame foi considerado anormal em 21,6% dos casos. No ano de 2018 foram atendidos 572 homens, 61,0% nunca haviam realizado toque retal, e o exame foi considerado anormal em 9,3% dos casos. **Conclusão:** No ano de 2016, foram confirmados 13 casos de câncer de próstata. No ano de 2017, foram diagnosticados 6 casos e no ano de 2018 foram 17 casos, correspondendo a um total de 36 casos de câncer de próstata.

Palavras-chave: Saúde do homem; Prevenção de doenças; Neoplasias da próstata.

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INTRODUCTION

Prostate cancer is characterized in most cases as the result of the transformation of prostate altered cells, although its etiology is not completely understood.[1] Prostate is a gland from the male reproductive system located just below the bladder and in front of the rectum and urethra. Although the prostate is formed by many types of cells, most of the prostatic neoplasms originate from the gland cells that produce the seminal fluid.[2]

Prostate cancer is the second most common type of male cancer and the fifth more common among the others worldwide. For Brazil it is estimated that 68,220 new cases of prostate cancer occurred each year in the biennium 2018-2019. These numbers represent an estimated risk of 66.12 new cases per 100,000 males.[1] Except for non-melanoma skin tumors, prostatic neoplasm is the most common cancer in the male Brazilian population.[3]

The major factors responsible for this disease in the male population are old age, ethnicity, and familial predisposition. Aging is considered the major risk factor, with the highest incidence and mortality in people older than 50 years in 30% of the cases.[4]

Since it is a disease that rarely takes place early in life, the need of population awareness about its tracking is important. The Health Ministry has a major role in widening the preventive campaigns in order to result in the involvement of the male population in the health service, and providing information about the disease, risks, signs and symptoms, and benefits of the early diagnose.[5]

The clinical examination (digital rectal exam) and prostate specific antigen - PSA (*prostatic specific antigen*) test measure in the blood are among the indicated exams for the prevention and diagnose of prostate cancer. In the case of positive results patients are referred to perform a pelvic ultrasound (or transrectal prostate). The result of the ultrasound, by its turn, might show the need of a transrectal prostate biopsy.[5]

The final diagnose is performed through a histopathological study of the cells obtained from the prostate biopsy. The anatomopathological report should provide a histological graduation using the Gleason system, informing about the potential growth rate of the tumor and its tendency to spread, besides determining the best treatment for the patient.[6]

Scientific evidence indicates that the diagnose of the prostate cancer in its early stages result in better results for the treatment of the disease.[2,5] The campaigns of prevention and diagnose provided in the city of Montes Claros, Minas Gerais, by the Padre Tiãozinho Association are part of this context. That is a non-profit non-governmental organization that attends needy patients under cancer treatment from cities in the North of Minas Gerais and in the South of Bahia. This organization promotes annually a Campaign, with specialized and free care to the population.

The present study aims to investigate the prevalence of prostate cancer in the population attended in the 6th, 7th, and 8th Campaigns of Cancer Prevention conducted in the city of Montes Claros, Minas Gerais, Brazil.

METHODOLOGY

This is a descriptive prevalence epidemiological study, performed in the city of Montes Claros, Minas Gerais, based on data obtained in the medical services provided to the population assisted in the Urology Tent during the Cancer Prevention

Campaigns from 2016 to 2018 – conducted by the Padre Tiãozinho Association. The present sample had a total of 1,554 individuals and the data collection was performed by a team of urological experts.

The participants answered a survey that addressed the following information: age group, life habits (alcoholism, smoking), cancer family history (presence or absence), clinical variables (previous digital rectum and PSA exams altered), and Complaints (dysuria, alguria, incontinence, urgency, polaquiuria, nocturia, hematuria, weak stream, urinary dribble, urinary retention).

This study was carried out according to the precepts determined in the Resolution 466/12 of National Council of Health from the Health Ministry; under the approval of the Committee on Ethics in Research of the UNIMONTES, according to the consolidated report nº 2.599.222.

The data were tabulated using the statistical software *Statical Package for the Social Science* (SPSS®), version 20.0 for Excel 2010®. The results of this analysis will be herein presented in tables and charts.

RESULTS

In 2016, 481 men were attended at the Urology Tent in the 6th Cancer Prevention Campaign, mostly in the age group of 50-69 years. Among them, 20.2% present a cancer family history (FH) and about 7% exhibited previous digital rectal and PSA exams altered. A total of 501 attendances were carried out in 2017 (7th Campaign). The age group and altered exams follow the same pattern recorded in the previous year, with a reduction in the percentage of family history in the development of cancer (13.8%). In 2018, 572 individuals were attended, with 60.7% men reporting a family history (FH) of cancer, as well as a reduction in the altered results of the digital rectal and PSA exams (Table 1).

Table 1 - Characterization of the participants attended at the Urology Tent in the Cancer Prevention Campaign according to age group, smoking habit, cancer FH, previous digital rectal exam and PSA from 2016 to 2018.

	2016		2017		2018	
Variable	**N**	**%**	**N**	**%**	**N**	**%**
Age group						
Less than 50 years	3	0.6	5	1	14	2.4
50 a 59 years	210	43.7	236	47.1	229	40.4
60 a 69 years	226	47	248	49.5	301	53.1
70 years or more	42	8.7	12	2.4	23	4.1
Smoking habits						
Smoker	75	15.6	78	15.6	71	13
Non-Smoker	406	84.4	418	83.4	201	36.9
Cancer FH						
Yes	97	20.2	69	13.8	344	60.7
No	384	78.8	261	52.1	223	39.3
Digital Rectal Exam						
No	178	37	128	25.5	315	61
Normal	273	56.8	174	34.7	48	9.3
Altered	30	6.2	29	5.8	6	1.2
Previous PSA						
No	88	18.6	52	10.4	394	75.9
Normal	352	74.4	247	49.3	49	9,4
Altered	33	7	34	6.8	19	3.7
Not informed			168	33.5	57	11
Total	**481**	**100**	**501**	**100**	**519**	**100**

Table 2 presents the major complaints detected in the cancer prevention campaigns performed from 2016 to 2017. The most common complaint in 2016 and 2017 was weak urinary stream.

Table 2 - Urinary complaints – Cancer Prevention Campaign – 2016 to 2017.

Urinary complaints	2016			2017		
	Yes n(%)	No n(%)	Total n(%)	No n(%)	Yes n(%)	Total n(%)
Dysuria	39(8.1)	442(91.9)	481	477(95.2)	24(4.8)	521
Alguria	16(3.3)	464(96.7)	481	486 (99.0)	5 (1.0)	521
Incontinence	17(3.5)	464(96.5)	481	493(98.4)	8(1.6)	521
Urgency	10(2.1)	471(97.9)	481	498 (99.4)	3 (0.6)	521
Polaquiuria	30(6.2)	451(93.8)	481	487 (97.2)	14 (2.8)	521
Nocturia	31(6.4)	450(93.6)	481	497 (99.2)	4 (0.8)	521
Hematuria	2(0.4)	479(99.6)	481	500 (99.8)	1 (0.2)	521
Weak stream	74(15.4)	407(84.6)	481	471 (94.0)	30 (6.0)	521
Urinary dribbling	21(4.4)	460(95.6)	481	483 (96.4)	18 (3.6)	521

The variables for 2018 are shown in Table 2.1. Alguria was reported by 10.8% of the participants.

Table 2.1 - Urinary complaints – Campaign of Cancer Prevention - 2018

Urinary complaint	n*	%
No complaint	392	69.1
Dysuria	28	4.9
Alguria	61	10.8
Incontinence	22	3.9
Urgency	10	1.8
Polaquiuria	6	1.1
Nocturia	5	0.9
Hematuria	4	0.7
Weak stream	32	5.6
Urinary dribbling	7	1.2

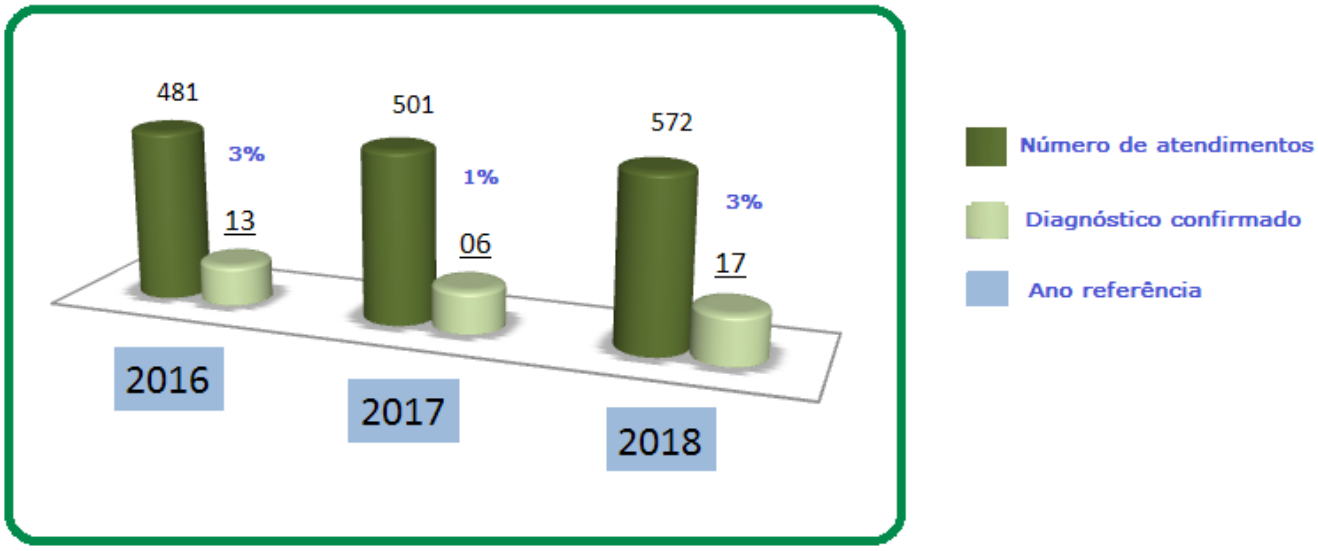
Table 3 presents the clinical characteristics of the participants that performed the prostate exam in the Cancer Prevention Campaign, from 2016 to 2018. In 2016, nodes were corded in 21 participants, representing 4.4% of the attendances, and 20.8% of the individuals from 2017 to 2018.

The numbers of attendances, as well as the positive diagnoses of prostate cancer carried out from 2016 to 2018 are presented in Chart 1. It should be remarked that in 2016 the percentage of positive results was 3%, falling to 1% in 2017, and going back to 3% of the attended in 2018.

Table 3 - Characteristics of the participants assisted in the Cancer Prevention Campaign according to the clinical variables. Montes Claros, Minas Gerais, 2018.

Variable	2016 n	%	Variable	2017 n	%	Variable	2018 n	%
Digital Exam			Digital Exam			Digital Exam		
Normal	339	76.4	Normal	386	77	Normal	315	61
Altered	105	23.6	Altered	108	21.6	Altered	48	9.3
Surface			Surface			Surface		
Regular	443	92.1	Regular	417	83.2	Regular	523	97
						Irregular	16	3
Symmetrical			Symmetrical			Symmetrical		
Yes	439	91.3	Yes	424	84.6	Yes	490	85.6
No	42	8.7	No	36	7.2	No	82	14.4
Nodes			Nodes			Nodes		
Yes	21	4.4	Yes	81	16.2	Yes	36	4.6
No	460	95.6	No	420	83.8	No	536	95.4
Total	**481**	**100**	**Total**	**501**	**100**	**Total**	**100**	**100**

Chart 1 – Number of attendances and positive prostate cancer diagnoses at the Tent of Urology in the Cancer Prevention Campaigns of 2016 to 2018, in the city of Montes Claros, Minas Gerais, Brazil.



Number of attendances
Confirmed diagnose
Reference year

DISCUSSION

The rectal examination is a preventive one which allows to evaluate various aspects of the prostate as: size and shape, consistency, sensitivity, uncomfortable or asymptomatic pain to pressure with the finger and, also, the anal sphincter tone.[7]

Prostate cancer is the second most common neoplasm in the world and the first in Brazil. According to the World Health Organization (WHO), the early detection of prostate cancer comprises screening of people without any symptom and apparently healthy through the completion of routine examinations, rectal examination and dosage of PSA.[8] 389 people presented a family history of cancer, equivalent to 25.03%. It is considered that among the factors related to cancers, in addition to the genetic aspects, the important influence of external agents to the body, related to the environment and the life style of the population. In this perspective, actions of health are highlighted for the encouragement of individual attitudes to the promotion, protection and prevention of diseases, as well as the healthy public policies for changes in life styles.

The primary cancer prevention consists of addressing the risk factors that predispose to disease, adopting healthy life habits, guiding and educating about these. Secondary prevention involves actions developed along with the population as the realization of periodical exams. The use of methods that provide an early diagnosis of the disease can promote a cure or improvement of survival of patients. The actions of primary prevention added to the secondary ones can reduce up to 2/3 of the cases of cancer, both as to its incidence, morbidity and mortality.[7]

The National Cancer Institute determines that the earlier the disease is diagnosed, the higher and better will be the chances of cure, allowing a less aggressive treatment. Early detection can reduce the high costs resulting from the treatment of the disease in advanced stages. The increase in incidence rates in Brazil can be partially justified by the evolution of diagnostic methods, by improving the quality of information systems in the country and the increase in life expectancy.[5]

In addition to age, race/ethnicity and family history of the disease risk factors are also considered for this type of neoplasm. The cancer of prostate is approximately 1.6 times more common in black men than in white men.[5]

The National Institute of Cancer (INCA) suggests the awareness of all men aged between 50 and 70 years old who seek health services for any reason. Whereas the Brazilian Society of Urology (SBU), suggests that men above 50 years and above 40 years who have a family history of prostate cancer, seek annually the urologist, even if they do not have symptoms.[9]

According to the American Cancer Society, for the early detection of cancer in individuals wi-thout symptoms the rectal examination and PSA annual serum from 50 years of age are recommended. These examinations in addition to low cost have good sensitivity and specificity. [10]

Among the many challenges that exist in relation to cancer and its prognosis, are the lack of information of the population, ancient and negative beliefs, prejudice against cancer and the preventive exam, as the rectal examination; the lack of a specific and sensitive examination to detect microscopic phase and in the absence of comprehensive programmed routines in health services that promote the detection of prostate cancer.[7]

Of the last three editions 615, 39.5% of the assisted individuals in Cancer Prevention Efforts / Urology reported urinary complaint.

In its initial phase, the prostate cancer has silent evolution. Many patients do not show any symptom or, when present, are similar to those of benign growth of the prostate. In the advanced stage, they may cause bone pain, urinary symptoms or, when more severe, generalized infection or renal insufficiency.[11] In symptomatic cases, the patient complained of difficulty when urinating, weak urinary stream and a sensation of not emptying their bladder completely.[12]

For a more precise answer regarding the prostate cancer, it is necessary to perform the rectal and prostate-specific antigen (PSA) examinations and, when changed the outcome of the two, there is a need to perform an anatomopathological examination in which the diagnosis is confirmed by the same. In 1986 the completion of the PSA was approved by the Food and Drug Administration (FDA) to monitor the prostate cancer, and in 1994 to perform the same in men over 50 years for the detection of diseases. [13]

In the last three editions of the Cancer Prevention Efforts carried out by Associação Presente 1,554 men were treated, with an increase in the number of treated individuals each year, and 36 new cases of prostate cancer diagnosed. The importance of prevention strategies was emphasized, with a view to raising awareness of the population, because the sooner the cancer is diagnosed, the greater the chances of cure, the survival and quality of life of the patient.

CONCLUSION

Prostate cancer is the second most common neoplasm in males, may affect any ethnic group and social, but predominantly in black men and elderly. In general, men tend not to adopt measures of protection against diseases, nor seek help when they have their health compromised. However, the present study has identified that in the year 2016, 13 cases of prostate cancer were confirmed, in 2017 6 confirmed cases and in the year 2018, 17 cases detected, which corresponds to a prevalence of 36 cases of positive prostate cancers in the last 03 years.

It is necessary to break down barriers and prejudices, ensuring a higher access to medical services. Since cancer is a silent disease that many times only manifests itself in advanced stages, actions such as the Cancer Prevention Campaign provide beyond the possibility of early diagnosis, access to guidelines and awareness about the importance of prevention, healthy life habits and risk factors.

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