Demographic and epidemiological aspects of mortality from penile cancer

Aspectos demográficos e epidemiológicos da mortalidade por câncer no pênis

Ricarlly Soares da Silva[1]
Ana Carla Martins da Silva[2]
Suelayne Gonçalves do Nascimento[1]
Conceição Maria de Oliveira[2,3]
Cristine Vieira do Bonfim[1,4]

Keywords
Penile neoplasms/mortality; Penile neoplasms/epidemiology; Information systems; Vital statistics; Nursing in public health care; Nursing in oncology

Descritores
Neoplasias penianas/mortalidade; Neoplasias penianas/epidemiologia; Sistemas de informação; Estatísticas vitais; Enfermagem em saúde pública; Enfermagem em oncologia

Submitted
December 17, 2013

Accepted
March 18, 2014

Abstract

Objective: Describing the demographic and epidemiological aspects of mortality from cancer of the penis.
Methods: A cross-sectional study consisting of 183 deaths registered in a public information system on mortality that had penile cancer as the primary cause of mortality. It was used descriptive statistics and the mortality rate was calculated.
Results: The mean coefficient of mortality was 0.45/100,000 that is an increase of 19.04%. The demographic data revealed a higher prevalence in men aged 60 years or older (50.8%), brown (54.1%), married (47.6%), retired (24%) and residents of the metropolitan region (44.8%).
Conclusion: The demographic and epidemiological aspects revealed increase of mortality rates from cancer in the penis.

Resumo

Objetivo: Descrever os aspectos demográficos e epidemiológicos da mortalidade por câncer no pênis.
Métodos: Estudo transversal constituído por 183 óbitos registrados em um sistema público de informação sobre mortalidade que tiveram como causa básica de morte o câncer no pênis. Utilizou-se estatística descritiva e foi calculado o coeficiente de mortalidade.
Resultados: O coeficiente de mortalidade médio foi de 0,45/100 mil, com acréscimo de 19,04%. Os dados sociodemográficos revelaram um maior acometimento nos homens na faixa etária de 60 anos ou mais (50,8%), da cor parda (54,1%), casados (47,6%), aposentados (24%) e residentes em região metropolitana (44,8%).
Conclusão: Os aspectos demográficos e epidemiológicos revelaram aumento no coeficiente de mortalidade por câncer no pênis.

DOI: http://dx.doi.org/10.1590/1982-0194201400010

Corresponding author
Cristine Vieira do Bonfim
Professor Moraes Rego Avenue, 123,
Cidade Universitaria, Recife, PE, Brazil.
Zip Code: 52071-440
cristine.bonfim@uol.com.br

[1]Fundação Joaquim Nabuco, Recife, PE, Brazil.
[2]Centro Universitário Maurício de Nassau, Recife, PE, Brazil.
[3]Secretaria da Saúde do Recife, Recife, PE, Brazil.
[4]Universidade Federal de Pernambuco, Recife, PE, Brazil.

Conflicts of interest: no conflicts of interest to declare.

Introduction

The cancer of the penis affects about 100,000 men worldwide.[1] Its incidence varies in different communities, according to geographical distribution, standards of hygiene, religious and cultural practices around the world.[2,3] It is a disease that affects a small portion of the population, but it is usually aggressive, especially because of the psychological impact it has on patients.[4]

It is a rare form of cancer in Western countries and more common in some developing regions.[5] In Brazil this type of disease represents 2% of all cancer cases in men, and accounts for more than 1,000 surgeries for total removal of the member.[2,3] Most new cases of this type of cancer are concentrated in the Northeast region of the country with rates reaching 5.7%, which exceeds the rates of prostate and bladder cancer. The socioeconomic and cultural conditions of this region favor the development of this type of neoplasia.[6-8]

Some risk factors influence the development of this disease, such as not having the phimosis surgery in childhood, having sex with different partners without using a condom, poor personal hygiene, infection with the human papillomavirus and other sexually transmitted diseases.[9-12]

The main factor of unfavorable prognosis for patients with cancer of the penis is the presence of metastasis in regional lymph nodes.[13] The high mortality from this disease occurs due to the delay in seeking treatment, which occurs on average a year after the appearance of the first symptoms.[9] In general, patients seek health services with the disease at advanced stage, thus hindering the possibility of effective treatment and progressing to death in two to three years on average.[9]

The self-examination is the most effective and economic method for the prevention of penile cancer and other diseases of the male urogenital tract. It is necessary to alert for the development of activities in primary health care to draw the attention of men about the importance of regularly consulting with a doctor, maintaining good hygiene habits, and emphasizing the practice of circumcision in childhood, which is also a simple means of disease prevention.[2] The focus should be on health education for early disease detection and its effective control.[3]

The Ministry of Health in Brazil established the National Policy for Integral Attention to Men's Health with the following objectives: strengthening primary care in the care of the man, facilitating access and the quality of care required to address the risk factors of diseases and health injuries, and improving information systems in order to enable adequate monitoring to allow decision-making.[14]

This study objective was to describe the demographic and epidemiological aspects of mortality by penile cancer in the State of Pernambuco, northeastern region of Brazil, in the period between 2000 and 2009.

Methods

This is a cross-sectional study with all deaths in the male population of residents of the State of Pernambuco caused by penile cancer in the period between 2000 and 2009.

Based on data from the information system on mortality, and after obtaining authorization for data access, the following variables were analyzed: age, race, marital status, occupation and region of residence. Descriptive statistics was used for data analysis, with frequency distribution through the EpiInfo version 7, in which the mortality rate was calculated (number of deaths from penile cancer / male population x 100,000).

The study development followed the national and international standards of ethics in research involving human beings.

Results

In the study period it were recorded 183 deaths that had penile cancer as underlying cause. Regarding the mortality rate for such neoplasia, it was observed an increase of 19.04% throughout the studied period, going from 0.34 per 100,000 men (2000) to 0.42 (2009) (Table 1).

Table 1. Male population, number of deaths and mortality rate from penile cancer

Year	Male population	Number of deaths	MR
2000	3826657	13	0.34
2001	3869994	14	0.36
2002	3906948	13	0.33
2003	3944176	18	0.46
2004	3981380	19	0.48
2005	4065743	18	0.44
2006	4108668	25	0.61
2007	4159898	20	0.48
2008	4229628	25	0.59
2009	4266933	18	0.42
Average	-	-	0.45
Total	-	183	-

MR – mortality rate

The demographic data showed a higher prevalence in men aged 60 years or older (n = 93, 50.8%), brown (n = 99, 54.1%), married (n = 87, 47, 6%), retired (n = 44, 24%) and residents in the metropolitan area of the city of Recife (n = 82, 44.8%) (Table 2).

Table 2. Deaths from penile cancer

Sociodemographic variables	n(%)
Age	
< 19	1(0.6)
20-39	20(10.9)
40-59	69(37.7)
> 60	93(50.8)
Race/color	
White	66(36.1)
Brown	99(54.1)
Black	9(4.9)
Asian	1(0.6)
Uninformed	8(4.3)
Marital status	
Single	62(33.9)
Married	87(47.6)
Widowed	20(10.9)
Others	3(1.6)
Uninformed	11(6.0)
Occupation	
Retired	44(24.0)
Farmer	25(13.7)
Merchant	11(6.0)
Others	75(44.8)
Uninformed	21(11.5)
Region of residence	
Metropolitan region	82(44.8)
Other municipalities in the State	101(55.2)

Discussion

The mortality rate from cancer of the penis in the state of Pernambuco significantly increased during the study period, which may be related to socioeconomic conditions and poor access to health services.[8]

The analysis of trends in mortality from cancers related to human papillomavirus in Brazil, by gender, in the period between 1996 and 2010, indicated a growing trend for the cancer of the penis. It is believed that the increase in the number of deaths occurs primarily due to changes in the population (size and structure of age). In terms of risk, the increase in penile cancer is predicted, and consequently, an increase in the mortality rate is expected.[15]

It is noteworthy that only in 2009, there was an initiative of the Brazilian Ministry of Health aimed at expanding the access of the male population to health services.[14]

In agreement with the results of this study, other studies indicate a higher incidence of the disease between the sixth and seventh decades of life.[7,9,10] The reason why the mortality occurs in the same period as the disease is because of the rapid tumor progression after diagnosis, since this happens at a later time due to the delay in seeking the health services.[9]

A population-based study that examined the survival trends of patients with penile cancer in Europe and the United States for the periods 1990-1995 and 2002-2007, showed no improvement in survival.[16]

The high mortality from this disease is due to neglect and fear of seeking health services as soon as noticing something wrong in the penis, and also because of the great locoregional expansion of the tumor.[9,13] Early diagnosis is essential for effective treatment. The variation of treatment modalities depend on clinical presentation and may include topical chemotherapy, surgical excision, Mohs micrographic surgery, laser excision or ablation, systemic chemotherapy and radiotherapy.[17]

The number of deaths from penile cancer was higher in men of mixed race (brown), even though race and skin color are not determinant factors for this type of tumor, because the development of this

disease is directly linked to poor personal hygiene and phimosis.[6] In India, a study that described the clinical and epidemiological profile of patients with cancer of the penis found that about a quarter of participants were of advanced age, not circumcised, had phimosis and smoking history.[18]

In this study, it was found that most of the deaths occurred in married men, indicating that marriage is not an obstacle to having multiple partners.[10]

The predominance of deaths from penile cancer in retired men, followed by farm workers was also verified. This finding partially agrees with what was found by other authors, who identified the prevalence of this neoplasm in farmers, a less favored class.[7]

Conclusion

The demographic and epidemiological aspects of mortality from penile cancer indicated that the majority of deaths occurred in men aged over 60 years, of brown color, married, retired and living in the metropolitan region of Recife, and that there was an increase in the mortality rate by cancer of the penis.

Collaborations

Silva RS contributed to study design, carrying out the survey, data analysis, writing of the manuscript and final approval of the version to be published. Silva ACM collaborated with carrying out the survey, the final draft of the manuscript and final approval of the version to be published. Nascimento SG participated in the final draft of the manuscript and final approval of the version to be published. Oliveira CM and Bonfim CV contributed to the study design, writing of the manuscript, critical revision of the important intellectual content and final approval of the version to be published.

References

1. Scheiner MA, Campos MM, Ornellas AA, Chin EW, Ornellas MH, Andrada-Serpa MJ. Human Papillomavirus and penile cancers in Rio de Janeiro, Brazil: HPV typing and clinical features. Int Braz J Urol. 2008;34:467-76.
2. Instituto Nacional do Câncer-INCA. Câncer de pênis. 2010 [citado 2010 Mar 29]. Disponível em: http://www2.inca.gov.br/wps/wcm/connect/tiposdecancer/site/home/penis.
3. Sociedade Brasileira de Urologia-SBU. Câncer de pênis. 2010 [citado 2010 Mai 31]. Disponível em: http://www.sbu.org.br/indexGeral.php?do=imprensa&sub=6&dado_id=2272.
4. Souza KW, Reis PE, Gomes IP, Carvalho EC. Estratégias de prevenção para câncer de testículo e pênis: revisão integrativa. Rev Esc Enferm USP. 2011;45(1):277-82.
5. Sonpavde G, Pagliaro LC, Buonerba C, Dorff TB, Lee RJ, Di Lorenzo G. Penile cancer: current therapy and future directions. Ann Oncol. 2013;24(5):1179-89.
6. Favorito LA, Nardi AC, Ronalsa M, Zequi SC, Sampaio FJB, Glina S. Epidemiologic study on penile cancer in Brazil. Int Braz J Urol. 2008;34(5):587-93.
7. Fonseca AG, Pinto JA, Marques MC, Drosdoski FS, Neto LO. Estudo epidemiológico do câncer de pênis no Estado do Pará, Brasil. Rev Pan-Amaz Saúde. 2010;1(2):85-90.
8. Reis AA, Paula LB, Paula AA, Saddi VA, Cruz AD. Aspectos clínico-epidemiológicos associados ao câncer de pênis. Ciênc Saúde Coletiva. 2010;15(Supl.1):1105-11.
9. Neveu RC, Bórquez PM, Trujillo CL, Fernández RR, Buchholtz MF. Experiencia de 10 años em el manejo Del cáncer de pene, Instituto Nacional Del Cáncer (1997-2006). Rev Chil Cir. 2008;60(2):103-7.
10. Barros EN, Melo MC. Câncer de pênis: perfil sócio-demográfico e respostas emocionais à penectomia em pacientes atendidos no Serviço de psicologia do Hospital do Câncer de Pernambuco. SBPH. 2009; 12(1):99-111.
11. Minhas S, Manseck A, Watya S, Hegarty PK. Penile Cancer – prevention and premalignant conditions. Urologia. 2010;76(Suppl 2A): S24-S35.
12. Pow-Sang MR, Ferreira U, Pow-Sang JM, Nardi AC, Destefano V. Epidemiology and natural history of penile cancer. Urology. 2010;76 (Suppl 2A):S2-S6.
13. Ficarra V, Akduman B, Bouchot O, Palou J, Tobias-Machado M. Prognostic factors in penile cancer. Urology. 2010;76 (Suppl 2A):S66-S73.
14. Ministério da Saúde. Portaria 1.944, de 27 de agosto de 2009 [citado 2010 Dez 7]. Disponível em: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2009/prt1944_27_08_2009.html.
15. Souza DL, Curado MP, Bernal MM, Jerez-Roig J, Boffetta P. Mortality trends and prediction of HPV-related cancers in Brazil. Eur J Cancer Prev. 2013;22(4):380-7.
16. Verhoeven RH, Janssen-Heijnen ML, Saum KU, Zanetti R, Caldarella A, Holleczek B, Brewster DH, Hakulinen T, Horenblas S, Brenner H, Gondos A. Population-based survival of penile cancer patients in Europe and the United States of America: No improvement since 1990. Eur J Cancer. 2013;49(6):1414-21.
17. Brady KL, Mercurio MG, Brown MD. Malignant tumors of the penis. Dermatol Surg. 2012;39(4):527-47.
18. Pahwa M, Girotra M, Rautela A, Abrahim R. Penile cancer in India: A clinicoepidemiological study. Gulf J Oncol. 2012;1(12):7-10.