

แนวโน้มอัตราการตายด้วยโรคมะเร็งต่อมลูกหมากในประเทศไทย ระหว่างปีพ.ศ.2541-2549

Trends in Prostate Cancer Mortality Rates in Thailand, 1998-2006

Araya Prasertchai¹

บทคัดย่อ

โรคมะเร็งต่อมลูกหมากเป็นสาเหตุการตายที่สำคัญในผู้ชายไทย ซึ่งยังไม่เป็นที่แน่ชัดว่าอัตราการตายด้วยโรคมะเร็งต่อมลูกหมากมีแนวโน้มเพิ่มขึ้นหรือไม่ วัดคุณประสิทธิภาพของการศึกษาเพื่อตรวจสอบแนวโน้มอัตราการตายตามกลุ่มอายุและอัตราการตายเมื่อปรับฐานอายุของโรคมะเร็งต่อมลูกหมาก ระหว่างปี พ.ศ.2541-2549 วิธีการศึกษาโดยใช้ข้อมูลการตายของกระทรวงสาธารณสุข ตามบัญชีจำแนกโรคระหว่างประเทศครั้งที่ 10 ระหว่างปี พ.ศ.2541-2549 มาคำนวณเพื่อหาแนวโน้มอัตราการตายตามกลุ่มอายุและอัตราการตายเมื่อปรับฐานอายุต่อประชากรเพศชาย 100,000 คน

ผลการศึกษาพบว่าอัตราการตายตามกลุ่มอายุและอัตราการตายเมื่อปรับฐานอายุของโรคมะเร็งต่อมลูกหมาก มีแนวโน้มเพิ่มขึ้นอย่างน้อยเป็นสี่เท่าในช่วงระยะเวลา 8 ปี สาเหตุของการเพิ่มขึ้นน่าจะเกิดจากการเพิ่มขึ้นของประชากรผู้สูงอายุ พฤติกรรมการบริโภคอาหารที่มีไขมันสูง ปัจจัยด้านชอร์โนนและโรคอ้วน ดังนั้นผู้กำหนดนโยบายทางสุขภาพควรส่งเสริมให้ชายไทยลดปัจจัยเสี่ยงจากโรคมะเร็งต่อมลูกหมากโดยการส่งเสริมให้มีพฤติกรรมสุขภาพที่ดี รวมทั้งการให้ความรู้แก่เจ้าหน้าที่ทางสุขภาพเพื่อตรวจสอบกรองหาโรคมะเร็งต่อมลูกหมากในระยะเริ่มต้น โดยวิธีตรวจหาระดับพีอีสเอ แอนติเจนในเลือด

คำสำคัญ: การตาย มะเร็งต่อมลูกหมาก ปัจจัยเสี่ยง

Abstract

Prostate cancer is one of the leading causes of cancer death among Thai males. It is not clear, whether or not mortality rates of prostate cancer in Thailand increased from 1998 to 2006. This study examines trends in age-specific and age-standardized mortality rates for prostate cancer among the Thai population. Mortality data during 1998-2006 were analyzed based on ICD-10 for prostate cancer.

¹Lecturer, School of Health Science, Sukhothai Thammathirat Open University, Thailand (Ph.D.);
E-mail: arayapra@yahoo.com

Both age-specific and age-standardized mortality rates per 100,000 were calculated and descriptively analyzed for trends.

The results shows prostate cancer mortality rates increased at least fourfold in eight years for males. The increase in mortality might be explained by the increase in risk factors including ageing of the population, higher fat diet, obesity, and hormonal factors. Health policy should increase its efforts in controlling and reducing the risk factors by promoting healthy behaviors. It is also important to educate health care providers on the profile of prostate-specific antigen testing for screening prostate cancer.

Keywords: mortality, prostate cancer, risk factors

Introduction

Prostate cancer is one of the leading causes of cancer death among Thai males (Ministry of Public Health, 2007). The increase in the Thai population aged 60 years and older might have been expected to precipitate an increase in the absolute number of deaths from prostate cancer. This study examines whether trends in age-specific and age-standardized mortality rates of prostate cancer among Thai males have been increasing.

Objective

To study trends in age-specific and age-standardized mortality rates from prostate cancer in Thailand.

Data Source

Data used in this study are from the mortality database during 1998-2006 from the Bureau of Health Policy and Planning, Ministry of Public Health (MOPH). The cause of death was classified according to the International Classification of Diseases and Related Health,

tenth revision (ICD-10) basis (World Health Organization, 1992).

Processing of Mortality Data

All deaths in Thailand are required by law to be reported to local authorities within 24 hours of the time of death or the time of discovery (Ministry of Public Health, 2005). The MOPH has collaborated with the Ministry of the Interior and agreed to document deaths using the civil registration database of the Office of Registration Administration (ORA) in the Department of Provincial Administration (Prasartkul & Vapattanawong, 2006).

Deaths are classified into three types: (a) deaths occurring in hospital (b) deaths from natural causes occurring at home; and (c) deaths from unnatural causes (Prasartkul & Vapattanawong, 2006). Over 30% of causes-of-death are not registered and more than 20% of those registered are considered "ill-defined" (Ministry of Public Health, 2004).

Overall, among the total 0.4 million reported deaths in Thailand in 2004, 65% occurred outside of hospitals and 35% in hospital settings (Tangcharoensathien, Faramnuayphol, Teokul, & Bundhamcharoen, March, 2006). Of this total, 25% were classified as unnatural deaths (Tangcharoensathien, et al., March, 2006). The proportion of ill-defined classifications was nearly 50% since many deaths in Thailand occur at home and the cause is reported by lay people (World Health Organization, 2008).

Research Approach

This study presents a cross-sectional description of trends in age-specific mortality rates of prostate cancer during 1998-2006. Causes of age-specific mortality rates of prostate cancer were compared with this formula:

Cause-specific mortality rate by age-specific

$$\text{group} = \frac{D_c}{P_{\text{midyear}}} \times 100,000$$

Where:

D_c is number-person of cause-specific mortality by age-specific group

P_{midyear} is mid-year population by age-specific group

Age standardization of mortality rates from prostate cancer was performed using the direct method with the 2007 total population as the standard.

Results

During 1998-2006, the rate of mortality from malignant neoplasm of the prostate (C61)

increases starting at the age of 50, peaking in the age range 70-84 and decreasing by the age of 85 and above (Table 4). After age 55, age-specific mortality rates double, treble or even quadruple with each higher age group. For example, the mortality rates from prostate cancer among those aged 55-59, 60-64, 65-69, 70-74 and 75-79 years increased from 0.09, 1.19, 1.95, 4.81, and 8.34 per 100,000 males in 1998 to 2.3, 3.99, 9.67, 17.6, and 28.77 per 100,000 males in 2006, respectively (Table 1 and Figure 1). For the 2006 data, these trends continue until age 84 then decrease at age 85+ years. Age-adjusted, standardized mortality rates from prostate cancer increase from 0.38 per 100,000 males in 1998 to 1.56 per 100,000 males in 2006 (Figure 9). The total percent increase in mortality rates of malignant neoplasm of prostate is around 311% during 1998-2006.

Discussion

Prostate cancer is one of the leading causes of cancer death in males worldwide. In Thailand, the overall prostate cancer mortality rates from 1998 to 2006 increased. Age-specific death rates show an exponential increase with age (especially in 2006). The rate of increase of age-specific death rates is higher in older age groups, especially those 70 years or older.

Several factors could account for the overall increase in prostate cancer mortality rates, such as an ageing population, diagnostic intensity and screening bias, genetic polymorphism, hormonal factors, obesity, and dietary factors—dietary fat, isoflavonoids, green tea, lycopene, together with

micronutrient and vitamins (Sim & Cheng, 2005).

Variations in prostate cancer care could be a factor and could be caused by differences in regional health care systems, societal beliefs, physical practices, and patient characteristics (McDavid, Lee, Fulton, Tonita, & Thompson, 2004). For example, the number of elderly men being screened has increased as well as a substantial improvement in diagnostic and therapeutic tools for prostate cancer, such as screening with prostate-specific antigen (PSA).

Diet and lifestyle could also be factors. The diet of the Thai population has become more westernized and lifestyles have become more sedentary. These health problems are more common among those who live in urban areas (Jitapunkul, 1999). Urban living is more likely to result in eating more western-style food and engaging in less physical activity, both of which have been associated an increase in the risk of cancer mortality (Puska, Sepulveda, & Porter, 2003).

Thus, Thai males are faced with a major increase in the rate of prostate cancer. Collaborative action now is a high priority to allow the preparations necessary for effective control of prostate cancer. It is important to make an effort to educate general practitioners in Thailand on the profile of PSA and PSA-based mass screening of the prostate.

Limitations

It is important to note that despite international efforts to facilitate and standardize processes for the collection and coding of data on causes of death, the quality of data from many

countries remains poor. Several factors influence cause of death ascertainment, such as the nature of the disease or circumstances of death, the qualifications and skills of the certifier, and the availability of diagnostic aids and medical evidence. Variations in these factors probably contribute to significant misclassification of cause of death in many countries (Rao, et al., 2007; Sibai, 2004).

In Thailand, mortality statistics indicate a medium (86%) (Mathers, Fat, Inoue, Rao, & Lopez, 2005) to high completeness of registry (95%) (National statistical Office, 1997), but low accuracy of cause-of-death (40% ill-defined category) (Tangcharoensathien, et al., March, 2006). Two gaps contribute to incomplete registration: the gap between the death event and its certification, and the gap between death certification and registration. The deceased may be brought to burial with neither death certificate nor registration (especially in very distance areas), or the certificate may be available but the death has not been registered (Tangcharoensathien, et al., March, 2006).

This study is based on vital statistics which give a snapshot of trends in prostate cancer mortality rates over the period 1998-2006. Age-standardized mortality rates were calculated for the major groups of causes by applying age-specific mortality rates to the standard population. This standardization allowed comparisons over the data period to account for their different age structures. Time trends in cause-specific mortality can explain some of these differences. However, the validity of the findings could be affected by the quality of documentation. It should be

cautioned that (a) underestimation of mortality rates from stroke and (b) systematical biases of prostate cancer mortality records existed during coding which could be considered as incomplete death-reporting information (Ministry of Public Health, 1998, 2000).

Increased public awareness of the significance of death registration and the responsibility of death registration for funeral management would improve completeness in the long term, but, despite the existence of a strong legal framework, enforcement may still pose a problem. The decennial Survey of Population Change, under the responsibility of the National Statistical Office, should remain the main path for the assessment of completeness. More frequent assessments, perhaps every five years, would be more useful, but also more costly.

Table 1

Trends in age specific mortality rates from malignant neoplasm of prostate: 1998-2006, Thailand (per 100,000)

Age Group	Males				
	1998	2000	2002	2004	2006
30	0.00	0.00	0.07	0.07	0.15
35	0.00	0.00	0.11	0.25	0.11
40	0.05	0.09	0.17	0.16	0.27
45	0.00	0.06	0.31	0.10	0.37
50	0.15	0.79	0.67	0.19	0.97
55	0.09	1.16	1.41	1.99	2.30
60	1.19	2.49	3.25	3.97	3.99
65	1.95	4.34	5.12	7.78	9.67
70	4.81	8.41	10.26	12.72	17.59
75	8.34	16.36	17.43	25.76	28.77
80	6.05	24.90	31.29	25.32	45.76
85+	4.68	18.52	18.12	27.69	41.18
Crude rate	0.26	0.68	0.96	1.24	1.75
Adjusted rate ^a	0.38	0.81	0.96	1.27	1.56

^a Per 100,000 males adjusted to standardization national population 2007

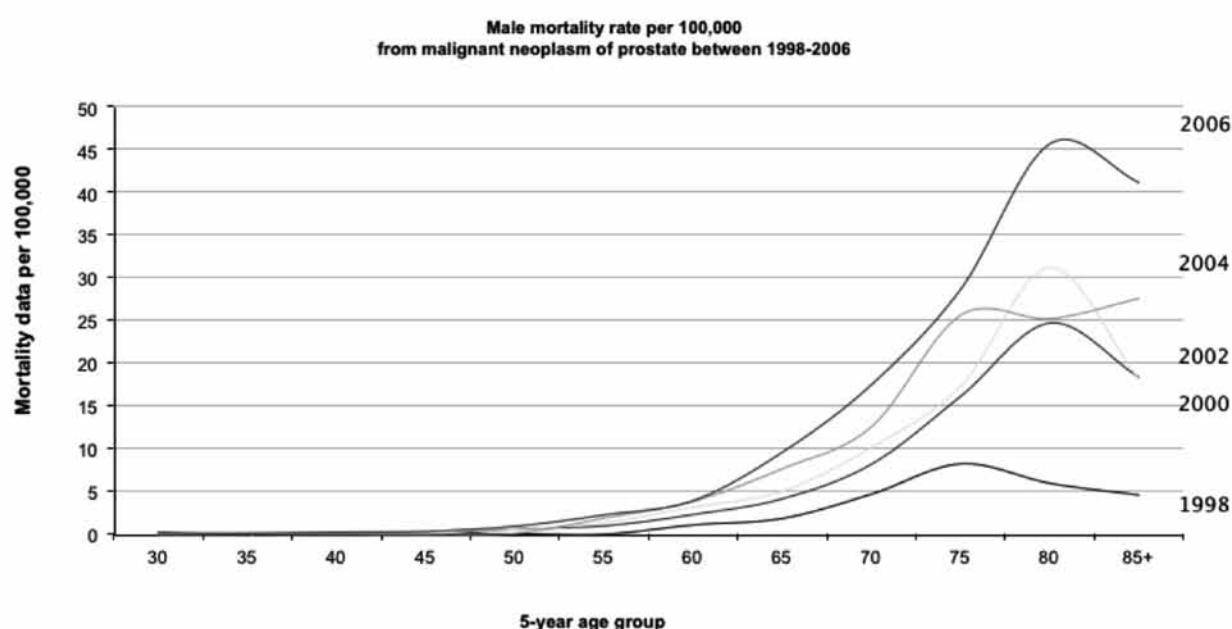


Figure 1 Trends in age specific mortality rate from malignant neoplasm of prostate between 1998-2006

Age-adjusted standardize mortality rate
of malignant neoplasm of prostate between 1998-2006

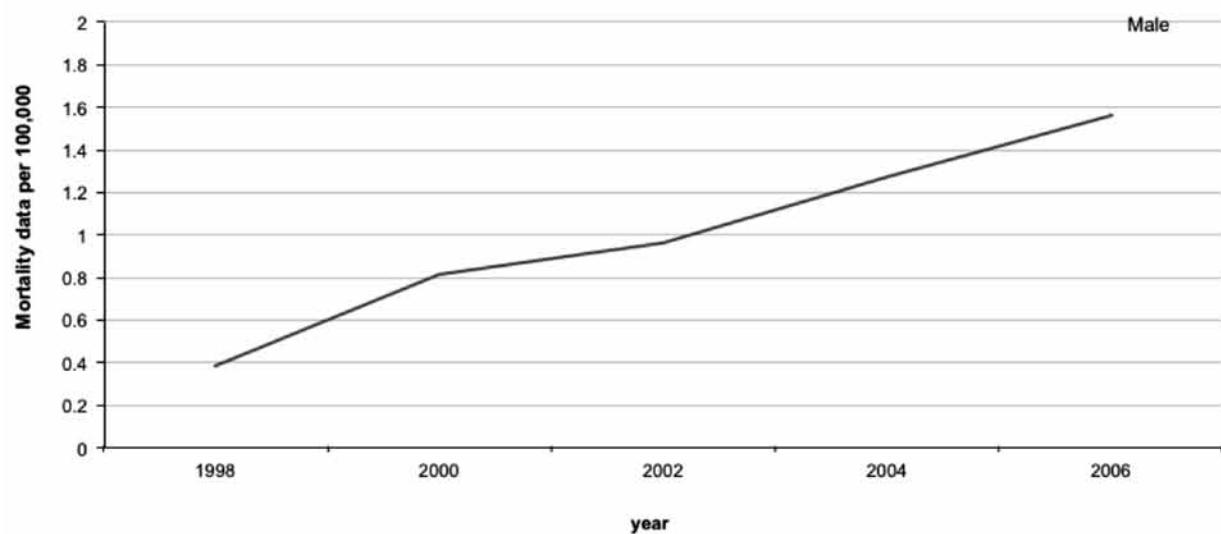


Figure 2 Mortality trends from malignant neoplasm of prostate between 1998-2006

References

Jitapunkul, S. (1999). *Elderly women in Thailand: a current status*: Chulalongkorn University.

Mathers, C. D., Fat, D. M., Inoue, M., Rao, C., & Lopez, A. (2005). Counting the dead and what they died from: an assessment of the global status of cause of death data. *Bulletin World Health Organization*, 83(3), 171-177c.

McDavid, K., Lee, J., Fulton, J. P., Tonita, J., & Thompson, T. D. (2004). Prostate cancer incidence and mortality rates and trends in the United States and Canada. *Public health report*, 119, 174-186.

Ministry of Public Health. (1998). *Public health statistics A.D. 1998*. Nonthaburi.

Ministry of Public Health. (2000). *Public Health Statistics A.D. 2000*. Nonthaburi.

Ministry of Public Health. (2004). *Public Health Statistic A.D. 2003*. Nonthaburi.

Ministry of Public Health. (2005). *Public Health Statistics A.D 2004*. Nonthaburi.

Ministry of Public Health. (2007). *Public health statistics A.D 2006*. Nonthaburi.

National statistical Office. (1997). *Report on the 1995-1996 Survey of Population Change*. Bangkok: Natinal Statistical Office.

Prasartkul, P., & Vapattanawong, P. (2006). The completeness of Death Registration in Thailand: Evidence from Demographic Surveillance System of the Kanchanaburi project. *World Health and Population*, 1-9.

Puska, P., Sepulveda, C., & Porter, D. (2003). Global Strategy on Diet,Physical Activity and Health. *World Health Organization*.

Rao, C., Yang, G., Hu, J., Ma, J., Xia, W., & Lopez, A. D. (2007). Validation of cause-of-death statistics in urban China. *International Journal of Epidemiology*, 36(3), 642-651.

Sibai, A. M. (2004). Mortality certification and cause-of-death reporting in developing countries. *Bull World Health Organ* 82(83).

Sim, H. G., & Cheng, C. W. S. (2005). Changing demography of prostate cancer in Asia. *European Journal of cancer*, 41, 834-845.

Tangcharoensathien, V., Faramnuayphol, P., Teokul, W., & Bundhamcharoen, K. (March, 2006). A critical assessment of mortality statistics in Thailand: potential for improvements. *Bulletin World Health Organization*, 84(3), 233-238.

World Health Organization. (1992). *International statistical of diseases and related health problems, tenth revision, 2nd ed.* Geneva: WHO.

World Health Organization. (2008). *The global burden of disease 2004 update*. Switzerland.