

Current Status of Prostate Cancer in Asia

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ABSTRACT

Prostate cancer has become one of the most common malignancy in men worldwide including Asia. Its incidence in Asia is lower compared to western countries, however currently there is an increasing trend of the incidence in the developing countries. Digital rectal examination, PSA and TRUS guided biopsy are still the standard diagnostic methods despite the fact that there are still a high percentage of patients who undergo TUR-P for diagnostic purposes. Treatment options for an early stage prostate cancer consists of radical prostatectomy from open to robotic, and radiotherapy. Most patients usually come with an already advanced stage and the treatments commonly done are hormonal therapy and TUR-P. Even in the early stage cases, radical treatment measures are still rarely done due to lack of treatment facilities (radiotherapy machine) or manpower (capable for radical prostatectomy). These problems could be overcome by having more manpower, medical facilities, and patient education campaign.

Key words : Prostate, cancer, asia.

ABSTRAK

Kanker prostat adalah salah satu keganasan yang paling sering ditemukan pada pria di seluruh dunia, termasuk Asia. Insiden kanker prostat di Asia lebih rendah dibandingkan dengan negara-negara barat, tetapi saat ini terdapat kecenderungan peningkatan insiden di negara-negara berkembang. Walaupun colok dubur, PSA, dan biopsi prostat dengan bimbingan TRUS masih merupakan metode diagnostik standar, masih banyak ahli urologi yang menggunakan TUR-P sebagai metode diagnostic, terutama di negara-negara berkembang. Pilihan terapi untuk kanker prostat stadium dini terdiri dari prostatektomi radikal, baik secara terbuka maupun robotik dan radioterapi. Kebanyakan pasien datang dengan kanker prostat stadium lanjut dan terapi yang diberikan adalah hormonal dan TUR-P. Pada beberapa kasus stadium dini, terapi radikal juga masih jarang dikerjakan. Hal ini disebabkan oleh kurangnya fasilitas (mesin radioterapi) atau tenaga ahli yang dapat mengerjakan prostatektomi radikal secara baik. Masalah-masalah ini dapat diatasi dengan memperbanyak tenaga ahli, fasilitas medic, dan edukasi pasien.

Kata kunci: Prostat, kanker, asia.

INTRODUCTION

Prostate cancer has become one of the most common malignancy in men worldwide including Asia although with lower incidence compared to western countries.¹ In the last ten years more publications on prostate cancer from various Asian countries have appeared in medical journals or conference reports. From these studies we understand that the incidence of prostate cancer in this region has increased.^{2,3} The purpose of this study is to know the recent incidence, diagnostic procedure, and treatment modality of prostate cancer in Asia.

METHODS

Pubmed search and other related sources using keywords: prostate cancer, diagnostic method, treatment option and Asia were collected and analyzed.

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RESULTS

Incidence of prostate cancer has increased between 5-120% in the last ten years with Singapore (Chinese), Japan (Miyagi), China (Shanghai), and the Philippines (Rizal) as the countries being the highest. According to Globocan 2002 report, the incidence rate of prostate cancer in Asia varies from 0.3 in Bangladesh and 18.6 in the Philippines which was lower compared to the Western world.^{3,4}

Besides digital rectal examination (DRE), prostate specific antigen (PSA) measurement has become a standard procedure in many urological clinic to determine the need of prostate biopsy. The cut-off level of PSA as a biopsy indication varies from country to country; although many centers used 4 ng/ml or even lower as indication for biopsy, some countries still used 10 ng/ml or higher as cut-off level.⁵

Mean age at diagnosis varies between 66-72 years without clear difference between developed or developing Asian countries. However, mean PSA at diagnosis was lower in developed countries such as Japan and S. Korea which was between 15-51 ng/ml, while in developing countries it varies from 75-373 ng/ml.⁶

Diagnostic of prostate cancer was mainly done with TRUS guided biopsy; this procedure was more common in developed countries ranging from 75-89% compared to 26-74% in other countries (Table 1). Table 2 shows the correlation between PSA and prostate cancer detection rate in several Asian countries. In some of the countries, this rate was extremely low in population with PSA less

than 4 ng/ml and increasing to more than 30% in group with PSA above 20 ng/ml.^{6,7}

Regarding the stage, it is typical that the advanced stage prostate cancer is more common in developing countries (61-73%) compared to in developed countries such as in Singapore, Taiwan, S. Korea (11-33%).⁸

Recently, radical prostatectomy (RP) is a common procedure for organ confined prostate cancer in many urological center throughout Asia. Even the robot-assisted laparoscopic RP became a standard procedure in some centers in many Asian countries. In other centers, it will be done as pure LRP or open surgery.

There are not so many Asian publication concerning the use of external beam radiotherapy (EBRT) for definitive treatment of prostate cancer although a more sophisticated facility such as intensity-modulated radiation therapy (IMRT) machines are available in Thailand, Indonesia, Japan, India, Singapore, Malaysia, S. Korea, Hong Kong and many other Asian countries.^{9,10}

Hormonal treatment is the mainstay for advanced stage patients. Bilateral orchiectomy is a more popular method, even DES tablet still being used in some country due to economical reason. However, utilization of LHRH injection becomes more often especially by including this drug in government besides private insurance coverage.

Besides for advanced disease, LHRH injection is also routinely given as neo-adjuvant androgen deprivation treatment before radiotherapy in T3 cases or as adjuvant treatment in patients with node positive after RP or high

Table 1: Prostate cancer in Asia: Diagnostic methods (%)

Author	Country	Biopsy	TUR-P	Open	Others
Ahmad Z et al, 2009 ²¹	Pakistan	26	74	n.a	n.a
Peyromaure M et al 2005 ²²	China	68	5	1	26
Umbas R, 2005 ²³	Indonesia	66.5	29.9	3.6	0
Akaza H et al, 2003 ⁸	Singapore	75	20	0	5
Akaza H et al, 2003 ⁸	Taiwan	77	17	0	6
Cancer Reg JUA, 2005 ¹⁵	Japan	89	n.a	n.a	n.a

Table 2: Prostate cancer detection rate by TRUS guided biopsy (%)

Author	Country	n	PSA (ng/ml)				
			0-4	4.1-10	10.1-20	20.1-50	>50
Dai B et al, 2008 ⁷	China	221	3.7	6.9	22.2	69.6	95.2
Chin JL et al, 2009 ²⁴	China	540	14.3	14.9	20.3	39.3	89.3
Chavan PR et al, 2009 ²⁵	India	922	0.6	2.3	2.5	34.1	54.9
Seo HK et al, 2007 ⁶	S. Korea	4967	13.4	19.6	34.0	76.0	n.a

grade tumor following EBRT as suggested by many guidelines.⁵

DISCUSSION

As a continent, Asia consists of many different countries with their own cultures, diet, health status, environment, and economical situations. The incidence of prostate cancer in Asia is lower compared to western countries. However, currently there is a decreasing tendency of the incidence in United States and other western countries as opposed to an increasing trend of the incidence in Asia and other developing countries probably because of adoption of unhealthy western lifestyles such as smoking and physical inactivity and consumption of calorie-dense food.¹¹

Some of the common risk factors are increasing life expectancy resulting in more men older than 70 years, westernized diet habit, and environmental exposure. With the projected increase of 300% more elderly population in Asia, one can expect that the incidence of prostate cancer in this region will be more prominent due to the fact that prostate cancer is more common in older population.¹²⁻¹⁵ In contrast, there are also some evidences that certain diet such as soy and green tea could be linked to the relatively low incidence of prostate cancer in many Asian countries. However, according to the latest Cochrane review, results from several studies on the role of green tea (*Camellia sinensis*) should be considered as insufficient and conflicting, so at this moment no firm recommendation could be taken regarding green tea consumption for prostate cancer prevention.¹⁶

TRUS guided biopsy is a standard diagnostic method for prostate cancer. In developing countries such as in Asia, there are still a high percentage of patients who underwent TUR-P for diagnostic purposes. However, the number of biopsies taken were almost similar with average 8 to 12 cores as reported in recent studies.^{7,17,18} TUR-P is still frequently done by urologists in developing countries probably due to lack of diagnostic equipment (TRUS probe and needle) or the patients had already come with urinary retention.

Many urological clinics in Asia are still using PSA more than 10 ng/ml as a cut-off level for the indication to do a prostate biopsy. This policy is usually based on their own experiences with low biopsy positive rate in patients with PSA less than 10 ng/ml.¹⁹

Patients usually come with an already advanced stage in developing countries. These figures could be due to patients ignorance, but could also reflect the shortage of manpower and/or medical instrument including TRUS probe to perform prostate biopsy as an effort for early diagnosis. Thus, regarding treatments, hormonal therapy

and/or TUR-P are frequently chosen by urologists. Unfortunately for the early stage patients, the number of radical treatment measures such as radical prostatectomy and radiotherapy being done are also still low. Lack of treatment facilities (radiotherapy machine) or manpower (capable for radical prostatectomy) may be the cause behind those numbers. In general RP will be indicated in patient with life expectancy > 10 years; of course it depends from country to country, for example age limit for RP was set at 75 years by 66-69% of urologists in a Japanese survey.²⁰ According to several studies, hormonal therapy has also been given as primary treatment in young age patients with organ confined disease. It is not clear whether this treatment was suggested by the urologist or patient driven.⁵

Taken together, these trends mentioned above will end up in a low number of newly detected prostate cancer and possibly under or over treatment of prostate cancer patients in our country.

CONCLUSIONS

The incidence of prostate cancer in Asia is increasing and with an increase of elderly population in the future, it is clear that this disease will become more prominent. Currently, the diagnostic procedure is not yet uniform. In some countries, one third of prostate cancer was diagnosed not by prostate biopsy. There was also a huge variation in tumor stage which show that in some Asian countries, prostate cancer patients were diagnosed with advanced disease. These problems could be overcome by having more manpower, medical facilities, and patient education campaign. Despite these situations, many Asian urologists have already embarked to laparoscopic technique of RP, even robotic machines are already available in several countries. ♦

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