Background and Objective: Prostate cancer is the second common cancer in elderly male in worldwide, especially Western countries. In contrast, its incidence is low in Asia. However, the incidence rate is now being diagnosed with yearly increasing frequency due to increasing proportion of elderly person. In Thailand, the prostate cancer with general data and histopathologic features has not been completely described. Therefore, the aim of this study was to analyze the history records of patients who were diagnosed with prostate cancer in order to provide the information for the efficient prostate cancer diagnosis and treatment.

Methods: This retrospective descriptive study was performed on the review of medical records of patients who were diagnosed prostate cancer between January 1, 1985 to December 31, 2010 at Srinagarind Hospital, Faculty of Medicine, Khon Kaen University. Information was included age, PSA levels, surgical procedures, histological reports, and radiological reports. These data were analyzed for descriptive statistics.

Results: There were 406 patients diagnosed with prostate cancer, mean age 69.24 (29-91) years and mean serum PSA level (2.43 to ≥ 100) ng/ml. The patients group with Gleason score 5-7 were the most of the pathological report, 145 (33.64%) followed by 120 (27.84%) patients with Gleason score 8-10, 59 (13.69%) patients with Gleason score 2-4, respectively. Multiple bones metastasis was detected in 173 (42%) patients. Hip bone was the most common site for metastasis, 140 (80.92%) patients.
Introduction

Prostate cancer is a major problem health in elderly men worldwide which the second common cancer in men. Its rank is the first for cancer in male population in developed countries and the sixth under developing countries. It is well-established in patients with suffering from terrible urinate that contribute to low quality of life. Currently, the prostate cancer screening is mainly composed of the digital rectal examination (DRE), the measurement of serum prostatic-specific antigen (PSA) (normal 0-4 ng/ml). For more precisely diagnosis, the urologist will consider for transrectal ultrasound-guided prostate biopsy (TRUS). Early detection of prostate cancer is increasingly emphasized than therapy since the patient is diagnosed organ-confined prostate cancer that could be prolonging survival. Advance stages in prostate cancer can metastasize to several organs of the body. Furthermore, the most commonly are vertebral.

The incidence of prostate cancer in Thailand is 5.5 age standardized rate (ASR) according to the world statistics, that the fourth of cancer in male and 3.2 ASR in Khon Kaen province. In addition, it is being diagnosed with yearly increasing frequency. However, prostate cancer with general data and histopathologic features in Srinagarind Hospital has not been completely described. Consequently, this study was the aim to analyze the history records of patients who were diagnosed prostate cancer. This is to provide the information for the surgeons or researchers and to contribute to the efficiency of prostate cancer diagnosis and therapy.

Methods

This retrospective descriptive study was performed on the review of the medical records of patients who were diagnosed prostate cancer between January 1, 1985 to December 31, 2010 at Srinagarind Hospital, Faculty of Medicine, Khon Kaen University. The history review was recorded including age, PSA levels, surgical procedures, histopathological reports, and radiological reports. These data were analyzed for descriptive statistics by using IBM SPSS for Windows.

Results

There were 406 patients with prostate cancer, reviewed in 1985-2010, mean age 69.24± 9.12 (range 29-91) years old (Table 1). All of these were diagnosed with adenocarcinoma type.

The surgical procedures for prostate cancer management were divided into two categories, the first as for the diagnosis, TRUS biopsy, and the second as for the prostate cancer therapy including transurethral resection of prostate gland (TURP), radical prostatectomy, and bilateral orchidectomy. There were 209 (30%) TRUS biopsy, 172 (25%) TURP, 53 (8%) radical prostatectomy, and 261 (37%) bilateral orchidectomy operations.

There were 434 procedures performed on 406 patients. The histopathological reports as Gleason score were categorized in three major groups including score 2-4, score 5-7, and score 8-10. There were 59 (13.69%) patients in score 2-4, 145 (33.64%) patients in score 5-7, 120 (27.84%) patients in score 8-10, 3 (0.7%) patients in prostatic intraepithelial neoplasia (PIN), and 107 (24.83%) cases with no Gleason score report (Table 2).

Conclusion: The most patients with prostate cancer are diagnosed above 50 years old and the average of serum PSA levels was highly (59.99 ng/ml). In addition, hip bone was the most common metastasis.
41 histopathological reports from 53 radical prostatectomized patients showed that 20 (48.78%) cases with not free margins, 15 (36.59%) cases with invaded seminal vesicle, 5 (12.20%) cases with invaded bladder neck, 1 (2.44%) case with invaded urethra, 1 (2.44%) case with invaded iliac lymph node, while the vas deferens was not involved with tumor (Table 3). The pre-treatment serum PSA levels of 316 patients were varied from 2.43 to more than 100 ng/ml (mean 59.99 ng/ml).

There were 173 of 287 patients reported bone metastasis after underwent bone x-ray and/or bone scan. The most common bones of metastasis were hip bone followed by lumbar spine, thoracic spine, ribs, and femur, respectively (Table 4, 5).

There were 52 (70.27%) of 74 patients with Gleason score 8-10 which the highest detected with the evidence of metastases to bones followed by patients with Gleason 5-7 found in 33 (39.29%) cases and patients with Gleason score 2-4 found in 10 (37.04 %) cases, respectively. In patients with more than 100 ng/ml of pre-treatment serum PSA levels, there were 88 (87.13%) of 101 cases that shown bone metastasis from bone x-ray or bone scan method (Table 6).

**Discussion**

Recently, prostate cancer is the second most common cancer in men in worldwide. In contrast, its incidence is low in developing countries. In Thailand, the incidence of prostate cancer is the fourth commonly diagnosed cancer in male, while liver and bile duct cancer is the first frequently diagnosed cancer in men. In Srinagarind Hospital, the average of new cases with prostate cancer is 22 cases a year, from 1985-2008. The majority of patients with prostate cancer are found above 50 years old and very few cases are found in young male. Accordingly, the risk of prostate cancer is highly after the age of 50 in white men, while black men is highly after 40 years old as similar as men with close relative with prostate cancer. Early detection of prostate cancer is always good prognosis. Normally, the serum PSA level is ranged between 0 to 4 ng/ml but these series have highly mean serum PSA level (59.99 ng/ml). Moreover, the patients with high serum PSA levels (more than 100 ng/ml) were related to bone metastasis. However, high serum PSA levels may be possibly reflected from benign prostatic hyperplasia (BPH) or prostatic inflammation. In 1994, the U.S. FDA has approved the PSA testing for early diagnosis of prostate cancer. Besides, it plays dramatic role in detectable metastasis. Approximately 95% of prostatic neoplasm is adenocarcinoma type that developed from the glandular cells. In addition, it has clinically silent, not shown specific symptoms and sometime its symptoms are as similar as BPH symptoms. Thus, most patients may be detected prostate cancer with any organ metastasis. However, the appropriate for prostate cancer management may be adjusted patient by patient.

In this series, there were 195 (67.94%) of 287 cases which involved with bone metastasis. The bone of pelvic girdle (hip bone) is the most common sites for metastasis of prostate cancer. In solid tumors, molecular mechanisms are responsible for the development to bone metastasis that closely related to bone microenvironment. Metastatic prostatic cancer cells spread via venous system and contribute to produce osteolytic and/or osteoblastic phenomena with the interaction of bone triggers. This series found that the patients with high Gleason score were detected the evidence of metastases to skeleton, especially hip bone. Correspondingly, several studies have confirmed that Gleason score is the strongest prognostic factor of cancer progression.

The limitation of this study was a retrospective study. Some important data was unfollowable. Further research should be emphasized to treatment modality a longterm.

**Conclusion**

In summary of prostate cancer in Srinagarind Hospital, the most patients with prostate cancer are diagnosed above 50 years old and the average of serum PSA levels was highly (59.99 ng/ml). In addition, hip bone was the most common metastasis.
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