Retrospective Analysis of Clinico-Epidimological Factors in Prostatic Cancer

Thesis

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بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ

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Walaa Hatem El Damhogy

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List of Abbreviations

Abb.	Full term

103Pd...................*Palladium-103*
125I.....................*Iodine-125*
131Cs *Cesium-131*
3-DCRT...............*3-Dimensional Conformal Radiotherapy*
ADT.....................*Androgen Deprivation Therapy*
ALK.....................*Alkaline Phosphatase*
ASR…………….. *Age-standardized rates*
AUA ....*American Urological Association*
BcR.....................*Biochemical Recurrence*
bPFS ....*Biochemical Progression-Free Survival*
CAB.....................*Combined Androgen Blockade*
CAPRA...............*Cancer of the Prostate Risk Assessment*
CAPSURE ....*Cancer of the Prostate Strategic Urologic Research Endeavour*
CBC.....................*Complete Blood Picture*
CI ....*Confidence Interval*
CRPC ....*Castration-Resistant Prostate Cancer*
cT .... *Clinical Tumor*
CT ....*Computerized Tomography*
CTC.....................*Common Toxicity Criteria*
D..........................*Docetaxel*
DCE ....*Dynamic Contrast Enhancement*
DRE ....*Digital Rectal Examination*
DW ....*Diffusion Weighted*
EAU ....*European Association of Urology*
EBRT ....*External Beam Radiation Therapy*
ECOG..................*Eastern Cooperative Oncology Group*
EORTC ....*European Organization for Research and Treatment of Cancer*

List of Abbreviations (Cont...)

Abb.	Full term
EPE	Extra-Prostatic Extension
ESMO	European Association of Urology
FDA	Food and Drug Administration
GU	Genitourinary
GUROC	Genitourinary Radiation Oncologists of Canada
GUROC	Genitourinary Radiation Oncologists of Canada
Gy	Gray
HDR	High Dose Radiotherapy
HGPIN	High Grade Prostatic Intraepithelial Neoplasia
HR	Hazard Ratio
HRPC	Hormone-Resistant Prostate Cancer
HVD	High Volume Disease
IADT	Intermittent Androgen Deprivation Therapy
IGRT	Image-Guided Radiation Therapy
IHD	Ischemic Heart Disease
IMRT	Intensity-Modulated Radiotherapy
LDR	Low Dose Radiotherapy
LH-RH	Luteinizing Hormone-Releasing Hormone
mCRPC	Metastatic castrate resistant prostate cancer
mHSPC	Metastatic Hormone-Sensitive Prostate Cancer
MH	Moderate Hypofractionation
MOA	Mechanism of Action
mp-MRI	Multiparametric Magnetic Resonance
MRI	Magnetic Resonance Imaging
MRSI	Magnetic Resonance Spectroscopic Imaging
Ms	Months

List of Abbreviations *(Cont...)*

Abb.	Full term
NCI	National Cancer Institute
NCRP	National Cancer Registry Program
NCCN	National Comprehensive Cancer Network
NICE	National Institute for Health and Clinical Excellence
No	Number
Os	Overall Survival
PCa	Prostatic Cancer
PCSM	Prostatic Cancer Specific Mortality,
Pet	Positron Emission Topography
PFS	Progression Free Survival
PIN	Prostatic Intraepithelial Neoplasia
PLND	Pelvic Lymph Node Dissection
PSA	Prostatic Specific Antigen
PSMA	Prostate- Specific Membrane Antigen
RCTs	Randomized Controlled Trials
RP	Radical Prostatectomy
rPFS	Radiographic Progression-Free Survival
RR	Relative Risk
RT	Radiation Therapy
RTOG	Radiation Therapy Oncology Group
SEARCH	Shared Equal Access Regional Cancer Hospital
SEER	Surveillance, Epidemiology, and End Results
SPCG-4	Scandinavian Prostate Cancer Group Study Number 4
SRT	Salvage Radiotherapy
SVI	Seminal Vesicle Invasion
SWOG	South-Western Oncology Group

List of Abbreviations *(Cont...)*

Abb.	Full term
TCC	Transitional Cell Carcinoma
TRUS	Trans Rectal Ultrasound
UCSF	University of California San Francisco
USPSTF	US Preventive Services Task Force
Vs	Versus

ABSTRACT

Background: Prostate cancer is the second most common cancer in men and the seventh leading cause of male cancer death worldwide. It is a highly heterogenous disease with great variability in its clinical course. Treatment options vary depending on age, stage, and grade of cancer, as well as other medical conditions.

Aim of study: In this retrospective study we aimed to provide clinico-epidemiological characteristics of prostate cancer and to present different treatment modalities with respect to OS, DFS and PFS.

Patients and Methods: Male patients with localized or metastatic prostate cancer presented to Ain Shams University Hospitals in the period from January 2010, to December 2015. In our study, we reviewed medical records of 101 patients including demographic data and clinic-pathological factors were reported, including age, sex, performance status (ECOG), co-morbidities, personal habits, tumor characteristics, surgery, radical treatment, metastatic treatment, treatment response and survival rates were collected.

Results: Our population under study had a median age of 69 years (range: 42-85), majority of our patients (94%) had good ECOG performance status (≤ 2), (45.5%) of the patients were presented to us with metastatic disease, most common symptoms at presentation were prostatism in 72.8% of patients and bony aches in 18.8%. The mean Gleason score among studied population was mean 7.37. 44.6% of the patients were metastatic at time of presentation. Median overall survival in studied population was 31 months, median PFS of the studied group was 17 months and the median DFS 29 months.

Conclusion: We provide an overview of patients with prostate cancer in a single tertiary institution in Cairo and it was found that lack of patient awareness in most patients leads to their late presentation at time of diagnosis.

Key word: Prostate cancer; Diagnosis; Enzalutamide; Salvage; Egypt.

INTRODUCTION

ℙrostate cancer is the second most common cancer in males. It was estimated that about 1.1 million men worldwide of prostate cancer were diagnosed in 2012, with estimated age-standardized incidence rates were 30.7 per 100,000, which represented 15% of the malignances diagnosed in men, with almost 70% of the cases (759,000) occurring in more developed regions. The estimated number of deaths was almost 307,000 and the estimated age-standardized mortality rates were 7.8 per 100.000 *(Globocan, 2012).*

A man's life time risk of developing prostate cancer is one out of seven *(Siegel et al., 2015).* The global burden of prostate cancer is expected to raise 1.7 million new cases and 499,000 deaths by 2030 due to growth and aging of the worldwide population *(Ferlay et al., 2010).*

Prostate cancer is the fifth leading cause of death from cancer in men (6.6% of the total men deaths). Because PSA testing has a much greater effect on incidence than on mortality, there is less variation in mortality rates worldwide (ten-fold from approximately 3 to 30 per 100,000) than is observed for incidence, with the number of deaths from prostate cancer larger in less developed than in more developed regions (165,000 and 142,000, respectively) *(Globocan, 2012).*

Prostate cancer patients have a good survival rate if the cancer is diagnosed at an early stage *(Leitzmann et al., 2012).* Improvements in detection and treatment recently may result in a better outlook for men now being diagnosed with prostate cancer. Five years relative survival rate for local and regional stage are almost 100% and for distant stage is 28% *(American Cancer Society, 2015).*

In Egypt, age-standardized incidence rates were 7.8 per 100,000 and mortality rates were 5.1 per 100,000 *(Globocan, 2012).*

Prostate cancer is a disease of elderly men. Almost 6 cases in 10 are diagnosed at the age of 65 years or later. It is rare before the age of 40, but the chance of developing prostate cancer rises rapidly after the age of 50. The average age at the time of diagnosed is almost 66 years *(American Cancer Society, 2015).* The age especially 55 years and above had almost 17-fold higher risk of developing prostate cancer as compared to age less than 55 years *(Bashir et al., 2014).*

African-Americans have the highest rates of prostate cancer in the world (223.0 per 100,000 men). The incidence among African-Americans is about 60% higher than whites (139.9 per 100,000 men). The incidence rate for all races is 147.8 per 100,000 men. Moreover, for the period 2007 to 2011, the mortality rate for African Americans was 2.4 times higher than whites *(Howlader et al., 2014).*