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Metastatic castration resistant prostate cancer: Current strategies of management in the Middle East

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Abstract

Although most patients with prostate cancer respond to initial androgen-deprivation therapy, progression to castration-resistant prostate cancer (CRPC) is almost inevitable. In 2004, the docetaxel/prednisone regimen was approved for the management of patients with metastatic CRPC, becoming the standard first-line therapy. Recent advances have also led to an unprecedented number of approved new drugs; thus, providing several treatment options for patients with metastatic CRPC. Five new drugs have received US Food and Drug Administration-approval between 2010 and 2012: sipuleucel-T, an immunotherapeutic agent; cabazitaxel, a novel microtubule inhibitor; abiraterone acetate, a new androgen biosynthesis inhibitor; enzalutamide, a novel androgen receptor inhibitor; and denosumab, a bone-targeting agent. Such drugs are either already marketed or about to be marketed in the Middle East. Data supporting the approval of each of these agents are described in this review, as are recent approaches to the treatment of metastatic CRPC.

Keywords: Prostate cancer; Castration-resistance; Sipuleucel-T; Cabazitaxel; Abiraterone; Enzalutamide; Denosumab

1. Introduction

Prostate cancer is the second most common cancer in men worldwide, with an estimated 900,000 new cases diagnosed and 258,000 deaths in 2008 and with the highest rates recorded primarily in the developed countries of Asia, Europe, and North America [1]. The American Cancer Society estimated that 241,740 American men were diagnosed with the disease and 28,170 men died of it in 2012 [2]. Rates of prostate cancer differ by over 50-fold between different international populations [2]. Interpretation of these data is complicated by dramatic changes in the incidence of prostate cancer in the United States (US) and other Western countries that have taken place over the past two decades. These changes have been primarily driven by the increased frequency of prostate biopsies performed in asymptomatic men because of an elevated serum prostate-specific antigen (PSA) level. In the US, the incidence of prostate cancer dramatically rose in the early 1990s concomitant with the increased utilization of PSA testing [3]. After an initial peak, incidence rates fell, but they have persisted at a rate nearly twice that recorded in the pre-PSA era [3]. Countries that do not utilize PSA testing typically have a much lower rate of prostate cancer compared to those that do. However, unless studies control for the number of prostate biopsies performed, it is difficult if not impossible to be definitive in making such conclusions. Prostate cancer is the most common cancer in males in 24 of 40 European countries with estimated age standardized rate (ASR) of 96/100,000 in 2012 [4].

Countries in the Middle East and North Africa exhibit lower rates of prostate cancer compared to global rates [5,6]. Some countries such as Lebanon [7,8] and Libya exhibit a much higher rate than their neighboring countries. Due to the lack of continuous reporting over time, temporal trends cannot be examined. Even in countries that have an established cancer registry, mortality rates and incidence rates prior to 1990 are not available making it difficult to examine the effect of screening tests on incidence and mortality of prostate cancer. Lower median age may represent an additional factor contributing to the low incidence of prostate cancer in the Middle Eastern population. Table 1 represents the incidence (age standardized rate; ASR) of prostate cancer according to published data in several Middle Eastern countries [8–12]. It is notable that Lebanon represents the Middle Eastern country with the highest recorded incidence rate at 27.6/100,000 [8]. This is likely due to more common use of PSA screening compared with the rest of the region. Out of the six Gulf Countries Council (GCC) states, Bahrain has the highest incidence with

Table 1
Age standardized rate (ASR) of prostate cancer in some Middle Eastern countries. Data presented per 100,000 individuals.

Country	ASR
Lebanon	27.6
Turkey	13.7–19.1
Bahrain	13.3
Kuwait	12.6
Jordan	11.5
Qatar	10.3
Egypt	6.6
Saudi Arabia	6.1
Oman	5.8
United Arab Emirates	5.3
Iran	5.1