Prostate cancer in Nigeria: An overview

Omolar Aminat Fatiregun¹, Anthonia Chima Sowunmi², Abidemi Emmanuel Omonisi³

¹Department of Radiology, Lagos state University College of Medicine, Ikeja, Lagos, Nigeria. Prostate Cancer Transatlantic Consortium (CaPTC), Nigeria. ²Department of Radiotherapy & Oncology, Lagos University Teaching Hospital/ University of Lagos, Lagos, Nigeria. Prostate Cancer Transatlantic Consortium (CaPTC), Nigeria. ³Department of Anatomic Pathology, Ekiti State University, Nigeria. Prostate Cancer Transatlantic Consortium (CaPTC), Nigeria.

*Corresponding author email: omolarafatiregun@gmail.com.

ABSTRACT
Prostate cancer is the commonest cancer in men in Nigeria. This editorial explores an overview of prostate cancer status in Nigeria.

KEYWORDS: Prostate, Cancer, Nigeria

Introduction

Nigeria is the most populous country in Africa, its population is about 200 million with an estimated yearly growth rate of 2.61%. Its population is equivalent to 2.57% of the total world population (‘Nigeria Population (2018) - Worldometers’ 2018; US Central Intelligence Agency 2017). Nigeria is the most populous black country in the world with a culturally diverse population. The country has 527 languages and over 1150 dialects and ethnic groups (Lewis 2010). It also has a strong relationship with the transatlantic slave trade. Out of the 10.24 million enslaved Africans taken to the Americas, between 1650 and 1900, the Bight of Benin (Togo, Benin and Nigeria west of the Niger Delta) constituted 20.2% of the slaves and the Bight of Biafra (Nigeria east of the Niger Delta, Cameroon, Equatorial Guinea and Gabon): 14.6% (Ewald 1992).

Prostate cancer remains the commonest cancer in men in Nigeria (Jedy-Agba et al. 2012). The epidemiology of this disease is similar to the patterns seen in the United States (US) and United Kingdom (UK) (CancerResearch 2016; Siegel et al. 2014). The average age specific incidence from 2 cancer registries in Nigeria was about 19.1 per 100,000 in 2010 (Elima et al. 2012). However, a population based screening done in Lagos, Nigeria, found as high as 1046 per 100,000 in men about 40 years in a cohort of 4110 men screened. (Stephen Odunayo Ikuerowo et al. 2013), this informs an increasing incidence and necessitates more efforts at resolving this challenge or unravelling the mystery of prostate cancer. There has been some work done on documenting cancer incidence through cancer registries in Nigeria. However, in terms of prevention, screening and treatment or improving patient outcomes, there are limited number of studies published. There are currently no free national prevention, screening or treatment programs in Nigeria aimed at prostate cancer. Recently, the Federal Ministry of Health published the National cancer control plan 2018–2022, (Federal Minstry of Health 2018) which outlined the governmental plan to reduce the incidence of cancer, it attributed the absence of well-coordinated screening programs as one of the causes of late presentation of cancer patients and hopes to increase the availability of these services, several plans were documented in the publication but are yet to be fully implemented. Most achievements so far with regards to Prostate cancer prevention, management and research are majorly due to the various efforts from Non-governmental organizations, some State governments, consortia/partnerships between Nigerian researchers and international researchers from other countries like the United States. For example, the Prostate Cancer Transatlantic Consortium (CaPTC) is a US National Cancer Institute-Epidemiology and Genomics Research Program consortium that has led numerous prostate cancer research, education, training and community outreach in Nigeria (Odedina).

In 2009, the Nigerian Federal Ministry of Health (FMOH) established a program of National System of Cancer Registries to strengthen cancer registries in Nigeria as well as establish new ones. There have been a few studies from this system documenting the patterns of different malignancies diagnosed in Nigeria (Elima et al. 2012). An assessment of the incidence of prostate cancer shows an increasing trend. It has increased from the 11% from the Ibadan Cancer Registry in 1999 (Ogunbiyi and Shittu 1999) to 22% (Adeloye et al. 2016) in 2016. This finding might indicate an
increase in the numbers of prostate cancer cases diagnosed in recent years, or it could be because of increased awareness, hospital presentations and therefore increased reporting of these cases. Prostate cancer presents at an earlier age in men of African descent in the US as well as the UK. Studies have shown that younger Black men have a higher incidence compared to other racial/ethnic groups (Odedina et al. 2009; Ben-Shlomo et al. 2008; Metcalfe et al. 2008; Jack, Davies, and Møller 2010). This earlier age of incidence is also seen in Nigerian men (Elima et al. 2012; Osegbe 1997).

Lifestyle factors, such as diet and vitamin D levels, have been linked to increased risk of prostate cancer. In addition, genetics also play a major role in the development of prostate cancer irrespective of environmental influences. Unfortunately, active research in both areas are limited and at the preliminary stages in Nigeria. Thus, the role of genetics and environmental factors in prostate cancer among Nigerian men is poorly understood and understudied in Nigeria men. It is important to however note that similarities have been documented between Nigerian and US Black men with respect to prostate cancer (Murphy et al. 2012).

The rise of team science, research collaborations, and especially cancer epidemiology consortia fostered by the National Cancer Institute promises to elevate cancer research in Nigeria. The CaPTC consortium has innovatively addressed prostate cancer research, education, training and community engagement in Nigeria since 2006. Founded in 2005, the consortium’s strategy is to study prostate cancer among Black men connected by the transatlantic slave trade route (Odedina et al. 2009). This allows consortium members to comprehensively address the disproportionate burden of prostate cancer among Black men of West African ancestry. There are currently about 20 CaPTC sites in Nigeria. These sites are engaging in collaborative prostate cancer research ranging from genetic to behavioural studies in collaboration with CaPTC investigators in other African countries, the US, UK, and the Caribbean.

In Nigeria, very few men are diagnosed in asymptomatic phase of prostate cancer. There exists no national screening programs on prostate cancer except for screening programs organised by some state governments (S O Ikuerowo et al. 2013) and non-government organisations. Patients are often referred from these screening programs or by clinicians or just by personal choice. Hence most cases present with either lower urinary symptoms and/or back pain (Ekeke, Amusan, and Eke 2012; Adewumi et al. 2016). Transrectal prostate biopsies are done either by blind biopsies or ultrasound guidance depending on equipment available at the hospital. Most prostate cancer diagnosed in Nigeria are adenocarcinomas with the Gleason score mostly showing moderate to high poorly differentiated nature of the cancer (Oluwole et al. 2015). Prostate Specific Antigen (PSA) range in these men at diagnosis remains high from 0.5 to 760 ng/ml. Other diagnostic tests available in Nigeria include isotope bone scan and CT scan, Magnetic Resonance Imaging (MRI).

Treatment modalities available in Nigeria are based on guidelines adopted from other developed countries (Armstrong 2019; Mottet et al. 2017). Treatment modalities currently offered depends on stage of presentation. Curative treatment include radical prostatectomy or radical radiotherapy and for metastatic cases:
chemotherapy with docetaxel or palliative radiotherapy (Ekeke, Amusan, and Eke 2012), androgen deprivation therapy (ADT), bilateral subcapsular orchidectomy and anti-androgen (flutamide or bicalutamide), luteinizing hormone releasing hormone (LHRH) agonist (Zoladex and leuprorelin), LHRH antagonist (degarelix), diethylstilboestrol and Abiraterone.

With regards to prognosis and survival of prostate cancer; there is also limited studies on survival patterns of prostate cancer in Nigeria. However, a study reported about 30% five-year survival for prostate cancer diagnosis at all stages included (Ekeke, Amusan, and Eke 2012). This shows a very low prostate cancer survival in Nigeria as compared to other parts of the world (Quinn and Babb 2002; Brawley 2012; UK 2013).

Finally, there is a need to tailor guidelines to the Nigerian population, especially with regards to screening, diagnosis, treatment and survivorship as well as quality of life and patient outcomes. The guidelines adopted from the US, UK or other countries are not necessarily the best for Nigerians and may negatively impact their treatment outcomes. To effectively address prostate cancer in Nigeria, there is a need for biomedical research spanning basic, clinical and behavioural sciences. This Special Issue of Cancer Health Disparities journal focuses on innovative prostate cancer research by CaPTC investigators.

Acknowledgements

Members of Transatlantic prostate cancer consortium (CapTc) for support.

Conflict of interest

The authors declare that no competing or conflict of interests exists. The funders had no role in study design, writing of the manuscript, or decision to publish.

Authors’ contributions

Fatiregun OA Manuscript writing and final review. Sowunmi AC Literature search and extraction. Omonisi AE. Manuscript writing, frame work design

REFERENCES


