

Potentials for Reducing Cancer Incidence in Nigeria

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Opinion

Cancer genomics is changing oncology care and cancer detection rates in developed countries where genetic information can be used to improve care and management as well as inform decisions for personalized care for individuals owing to disparities in cancer genetics globally [1-3]. However, in some low and lower middle income countries, the battle against cancer is increasing [4]. For instance in Nigeria, cancer incidence and burden is growing with more than 115,000 new cases and over 70,000 deaths reported in 2018, with breast cancer as the leading type and cause of cancer mortality in the country [4,5]. Delays in detection, late presentation, poor access to treatment, poor prevention practice and knowledge and awareness all play significant roles in this increasing burdens while modifiable and unmodifiable risk factors for cancers have been identified [6-11]. Genetic predisposition account for some types of cancers originating from germ line mutations which increases the risk of developing especially ovarian, breast, colorectal, prostate and other cancers [12,13].

Although these hereditary cancers are inherited from parents, it does not always develop in their children. Because cancer cells undergo genetic changes which are detectable by high-throughput DNA sequencing, panel-based pathogenic gene screening through genetic testing, present many advantages for cancer management [14,15], but it is not without its challenges. This technology is however yet to be explored for reducing cancer burdens or for cancer care management in Nigeria. Genetic contributions to cancer have been studied widely in many populations and there are peculiarities in different populations; in the African descent. For instance, hereditary breast and ovarian cancers have been linked mostly to BRCA1 and BRCA 2 mutations in African and non-African populations [13,16], however, Africans are known to develop aggressive cancers and are at higher risks of deaths than

other races. These variants of BRCA gene mutations in Nigerian population have been studied [19]. These unique genetic patterns and disparities should form the impetus for tailoring prevention, care and management for target populations with risk factors - like gender and ageing; which are not modifiable, and in turn greatly reducing the rising burden of cancers in Nigeria.

Breast and prostate cancers are two key cancer types that are prominent in Nigerians and the risk for both can be tested through genetic testing and potentially can overcome challenges of late presentation of patients which affects treatment outcomes and improve ways of managing and reducing cancer disease in Nigerian population. Mass screening for detection of new cases has helped previously in Nigeria and together with genetic testing and known modifiable risk factors linked to carcinomas in Nigerians [10,11,17,18], can reduce the risk of developing the disease. The tests are becoming available for home use and can detect early individuals who are at higher risk of cancer or those with a family history [19,20]. With adjustment of lifestyle, this can greatly reduce their risk of developing cancers and improve care and management for those affected in Nigeria.

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