

Part II: Cancer in Indigenous Africans—causes and control

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This is fourth in a series of Reviews on cancer and indigenous peoples

Africa has contributed substantial knowledge to the understanding of certain risk factors for cancer, such as the role of several infectious agents (eg, viruses, bacteria, and parasites), aflatoxins, and certain lifestyle factors. Although the relative importance of many lifestyle factors is becoming better understood in developed countries, more work is needed to understand the importance of these factors in different African settings. In view of the substantial genetic diversity in Africa, it would be prudent not to generalise too widely from one place to the next. We argue that risks for several exposures related to certain cancers differ from the patterns seen in developed countries. In this paper, we review the current knowledge of causes of some of the leading cancers in Africa, namely cancers of the cervix, breast, liver, prostate, stomach, bladder, and oesophagus, Kaposi's sarcoma, non-Hodgkin lymphoma, and tobacco-related cancers. There are no comprehensive cancer-control programmes in Africa and provision of radiotherapy, chemotherapy, and palliation is inadequate. Certain cost-effective interventions, such as tobacco control, provision of antiretroviral therapy, and malarial and bilharzial control, can cause substantial decreases in the burden of some of these cancers. Vaccinations against hepatitis B and oncogenic human papilloma viruses can make the biggest difference, but very few countries in Africa can afford these vaccines without substantial subsidisation.

Introduction

In Part I of this two-part Review, we described the burden and distribution of cancer in the African continent.¹ We now review what is known of the causes of the most common cancers, focusing on studies that have been done in Africa, to extend or confirm what has been learnt in the usual epidemiological situations from developed countries.

As a result of the long evolutionary history in Africa, there is more genetic diversity between populations in the African continent, than between Africans and other people in the world.² Not only do populations in Africa vary considerably with respect to their genes, but Africa shows a wide range of environments—eg, climatic,

vegetative [12 of 16 vegetation zones³ are represented in Africa], and zoological (including microorganisms and parasites). One might, thus, expect a wide diversity of human-cancer patterns, the study of which would develop our understanding of their causes.

We review the causes and control for a specific group of the most common cancers in Africa. These cancers were selected for review on the basis of several factors. Data from Africa have contributed to an understanding of the aetiology of these cancers, and in the case of hepatocellular and cervical cancers, there are interventions that work. For the others, geographical and ethnic patterns suggest that there are lifestyle factors (figure 1) that contribute to their aetiology, which might differ in relative importance from those in developed countries. Additionally, certain tobacco-related cancers and HIV-related cancers (in addition to Kaposi's sarcoma) are discussed, because these are likely to increase over time as both these epidemics develop.

Cancer of the cervix uteri

Cancer of the cervix is common in sub-Saharan Africa, although relatively less so in north Africa. Oncogenic human papilloma viruses (HPV) are now recognised as a necessary cause of cervical cancer. HPV subtypes 16 and 18 are responsible for 72% of cervical cancers in Africa, with other subtypes (especially 33, 31, 52, and 58) causing the remainder.⁴ Other sexually transmitted infections, especially *Chlamydia trachomatis*,⁵ which causes chronic cervicovaginal inflammation, might increase the risk of cervical cancer independently of HPV.

Additional independent risk factors have been documented, such as increasing number of pregnancies, oral contraceptives,⁶ and smoking.⁷ Epidemiological studies on cancer of the cervix in Africa have similar findings to those done in developed countries, in terms of number of partners, level of education, high parity, and steroid contraceptives. Genital hygiene, alcohol, and



Figure 1: Tobacco advertising in Malawi 2002

Caption at top reads "Tobacco may be harmful to your health", and caption at bottom reads "Your heart is contented".