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Breast cancer in sub-Saharan African women

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Abstract

The literature on breast cancer in sub-Saharan women is reviewed. In general, breast cancer is the second most common malignancy of women in the region, after cancer of the uterine cervix. Available reports indicate that data on the disease are incomplete and mostly, of epidemiological or clinical nature. Breast cancer is less common in sub-Saharan Africa compared to the Western countries (USA or Europe), occurs in younger individuals with peak incidences about a decade younger and the majority present late, with advanced, sometimes terminal disease. Absence of health educational programmes on cancer as well as lack of screening facilities in nearly all countries in the region are contributory factors to the late presentation of the cases. The need for more in-depth studies of the disease in the black African population has been highlighted.

Résumé

La littérature sur le cancer de la sein la femme de sub-Sahara est revue. En générale, cancer de la sein est la deuxiem le plus commune méchanceté de femme de la région, après cancer de la uterine cervix.

Accessible rapports qui indique que la données sur la maladie sont incomplet et sur tout, de épidémiologique ou clinique nature. Cancer de la sein est moins commune à sub-Sahara Afrique compeiré de les pays d'a l'ovest (USA ou Europe), venir a l'esprit des jeunes individu avec les pic incidences à peu près une decade jeune, et la majorité présent tard, avec progrès, quelquefois terminale maladie. Absence des programmes éducatif de santé en cancer aussi défaut de dépistage installations à faillir tous les pays dans la région sont collaborateur facteurs de la tard présentation de les cas. La nécessité de plus fond

études de la maladie dans la population de l'Afrique Noir sont clair.

Introduction

Breast cancer is a well known leading cause of cancer deaths among women in developed countries [1,2,3,4,5,6]. Although not the leading cancer, it still represents a relatively common malignancy of women in many developing countries [7,8]. This paper is a review of some aspects of the disease from sub-Saharan (Black) Africa (all African countries excluding Egypt, Algeria, Tunisia, Libya, Morocco, and South Africa), and discusses certain important factors affecting adequate and effective management of the disease in the region. The findings in only a few French-speaking African countries have been included in this review.

Incidence

Epidemiological studies of breast cancer have provided data on the disease among various racial or ethnic groups in the U.K. [9]; the U.S.A. [10,11,12] and in South Africa [13,14,15,16]. Studies in black populations outside Africa have also been carried out in the Caribbeans [17,18].

Whereas breast cancer is the most common cancer among U.S. blacks [10,11,19], in Jamaica, Trinidad and Tobago, it is ranked second only to cancer of the uterine cervix [18]. In general, the prevalence of breast cancer in the Caribbean countries is considered intermediate between whites in Western countries, and the disease in black Africans [17]. In South Africa, breast cancer is ranked third after cancers of the uterine cervix and oesophagus, in that order [20]. Elsewhere in black Africa, the disease is the second commonest female malignancy after cancer of the uterine cervix, as illustrated by reports from East Africa [12,22,23,24], Rwanda [25] Botswana [26], Nigeria [27,28], Ghana [29,30], Liberia [31] and Senegal [32]. In Zaire, while Dates [33] ranks breast cancer first, Kenda [34] has ranked it second after cancer of the cervix, similar to other parts of sub-Saharan Africa. Sobo [31] has

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reported an increase in yearly incidence of the disease in Liberia.

Age

Comparative studies have shown a higher frequency of younger breast cancer subjects in black populations, with peak ages averaging a decade younger than among whites [14,16,17,27,29,31,34,35]. In Jamaicans, however, the age specific incidence curve is said to conform to a "westernised pattern" [17]. The average life expectancy in black Africa (45–55 years) is much lower compared to the U.K. and U.S.A. (70–75 years) [36]. As most of the figures from the developing countries have not been adjusted to reflect age specific incidences, the higher frequency in younger subjects may be more apparent than real. The latent period of the common types of breast cancer, coupled with late presentation of most African patients, would suggest a carcinogenic process commencing at an earlier age in black Africans compared to whites.

Presentation

The classic presentation of breast cancer as painless lump in the breast, is confirmed in reports from Africa [26,28,37,39]. Some reports however, also stress pain as an important presenting symptom either alone or in combination with other more classical symptoms and signs. Pain in the breast commonly suggests an underlying benign condition such as duct ectasia, fibrocystic disease or even cyclical engorgement [40]. However, it may be a factor of late presentation of the disease when local infiltrative changes may be associated with pain [37]. The late presentation of the disease emphasised in most reports from Africa [27,28,29,30,31,34,35,41,42,43,44], tends to support this latter explanation.

Some authors [45] describe a high percentage of "rapidly progressing" or "pousse evolutive" type of breast cancer, thus emphasising the advanced nature of the disease at the time of presentation. Interestingly, the "rapidly progressing" type of breast cancer has been found to be most common among certain North African populations where as much as 55–60 per cent of all breast cancers are of this type [46,47].

Among reasons given for late presentation of breast cancer in Africa are: ignorance of the signs

and symptoms of early breast cancer and lack of knowledge on the need for self examination. These are due to absence of educational as well as screening programmes on breast cancer in these countries. Strax [48] has stressed the benefits of mass screening for control of breast cancer. Inadequate medical facilities and delay in seeking medical assistance, often after traditional or local methods have failed [29,42], are also important factors.

Risk factors

The more frequent occurrence of breast cancer in younger African women is emphasised by the fact that most are actively menstruating at the time of diagnosis [41,27]. Chiedozi [27], has also demonstrated that 18.7 per cent of Nigerians studied were pregnant or lactating on presentation, and that 80 per cent presented with advanced disease. Quartey-Papafio and Anim [30] also found 11.6 per cent of their patients to be lactating. Early age at first birth has been associated with decreased risk for breast cancer; conversely older age at first birth and nulliparity have been associated with increased risk among white populations [49]. These factors do not hold similar significance in black African communities, where high fertility rates are common and the disease frequently occurs in multiparous women [27,29]. In his study of breast cancer in Zairean women, Kenda [34] has found a significant association with multiparity and breastfeeding. Similar trends have also been reported among Arab women in whom breast cancer is the most common malignancy [37,50,51]. There is still controversy over the protective effect of breastfeeding with respect to breast cancer [40,52,53,54]. Breastfeeding is commonly practised in Africa, often for prolonged periods. In these communities, data, although incomplete, do not indicate any protection from breast cancer [26].

Unlike cancer of the cervix which has been linked, on epidemiologic grounds, to low socio-economic status, breast cancer appears to cross social barriers even in developed countries where it is commonest. The risk is said to be higher among the affluent and related to diet [3]. There are no reliable data comparing the risk of breast cancer among different socio-economic groups in Africa.

Problems of diagnosis of breast cancer

Diagnosis of breast lumps in many parts of Africa still depends solely on clinical examination. Mammographic investigation of breast cancer is done in only a few centres. It is now accepted that the best results are achieved when other imaging techniques such as thermography, ultrasound and diaphanography are combined with mammography [55]. Often however, mammography appears superfluous in view of late presentation of the disease, when it is already clinically obvious. Other ancillary diagnostic procedures such as lymphangiography, CT-scan and more recently, MRI are also not available to most African countries. Early diagnosis is a natural follow-up of sound health educational policies on the disease, aspects which are lacking in many African countries. Such educational policies must emphasise the importance of self examination as a more realistic method of early detection of breast cancer in Africa. Assay of biological markers such as carcinoembryonic antigen (CEA) have been found useful in monitoring metastatic disease but as yet, no specific markers have been found useful for detection of the primary tumour. Monoclonal antibody techniques are being investigated [56], but such facilities are not available in sub-Saharan Africa.

Histological types of breast cancer

Infiltrating duct carcinoma, especially the scirrhous type is the most common form worldwide, African countries included [28,29,44]. The proportions of the less common histological types show slight variations, some of which may be significant. Thus, medullary carcinoma is commoner among Ghanaians studied [29], as among Japanese [57,58]. Reasons for these variations are not readily apparent and do not seem to significantly affect prognosis of the disease in black Africans in whom the advanced presentation of the disease is of overriding importance.

Management

Management modalities employed among Africans are similar to those of the developed countries. Standard methods of treatment are severely limited by lack of supportive facilities for adjuvant therapy in many African countries.

Radiotherapy is available in only a few of these countries [23,31], and chemotherapeutic drug supply is often erratic. Hormone receptor assay, now routine in the management of advanced breast cancer [59], is available to only a few African countries [60,61]. Adjuvant hormone treatment is often empirical or based on protocols derived from studies carried out in the U.K or U.S.A. [62]. In view of the higher occurrence of breast cancer in younger African subjects, there is need to study in detail, the hormone receptor status of the disease in this population in order to formulate appropriate treatment protocols which answer specific questions about the disease among sub-Saharan Africans.

Follow up and prognosis

Prognosis of breast cancer depends on the stage of the disease as well as methods of treatment. The usually late presentation of the disease in black Africans has already been related to the relatively poor outcome of treatment [27,28,30,41,42,43,62]. Follow-up studies are uniformly difficult among black Africans on account of failure of compliance and difficulty in maintaining surveillance. Specific examples of problems include lack of qualified personnel, inadequate transportation to maintain effective surveillance and follow up, poor drug supply and less satisfactory treatment alternatives due to lack of optimal facilities.

Conclusion

The above discussion has emphasised the absence of complete data on breast cancer among sub-Saharan African women. The disease is not as uncommon as originally thought, though generally less common compared to white populations. Important features are:

- (a) Breast cancer is relatively commoner in younger subjects in black Africa.
- (b) It is second to cancer of the uterine cervix, which is the most common female malignancy in most black African populations.
- (c) The patients present late, in advanced stages of the disease, rendering treatment and general outlook unsatisfactory.
- (d) Effective management is hampered by lack of facilities for adjuvant therapy and

supportive procedures such as hormone receptor assays which are necessary for planning comprehensive treatment protocols.

- (e) Lack of health education and screening programmes result in late presentation and loss to follow-up, areas that require urgent attention.

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