Challenges of anticancer chemotherapy in Africa

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Background: *Cancer patients in Africa face unique challenges beyond the issues of disease pathology and treatment. Most patients present in advance stages beyond hopes of a cure and their management is confounded by complex socioeconomic and cultural issues unique to underdeveloped countries.*

Methods: *Critical assessment of the state of cancer care in Africa with focus on the management of advanced stages of the disease. The impact of a shortage of resources, difficulty with access to care and cultural attitudes that impact on the ability to provide state-of-the-art therapies are reviewed.*

Results: *In contrast to AIDS, malaria, and tuberculosis, malignancies kill more patients than all three of these high profile infectious diseases combined. The lack of adequate social and economic resources results in direct limitation on the effectiveness of care in many African nations.*

Conclusions: *Effective cancer treatment strategies in Africa need to focus on providing basic care, making efforts to diagnose cancers earlier, making treatments more accessible and affordable, promoting research that is more applicable to local conditions in an African setting, and striving for public health initiatives that will benefit the vast majority of patients with advanced-stage disease.*

Key Words: chemotherapy advanced, challenges

Introduction

The International Agency for Research on Cancer (IARC) estimates that worldwide, in 2020 there will be 15 million new cases of cancer a year, of which 70% will occur in developing countries.[1] It is feared that most cases of cancer in Africa will be diagnosed at advanced or metastatic stages, when chemotherapy is often crucial.[2,3]

There have been some extraordinary recent developments in cancer treatment. Discoveries about the mechanisms of the malignant process involving oncogenes and antioncogenes have led to the development of new oncolytic drugs and the consolidation of therapeutic cancer management protocols.[4]

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Africa, however, is still beset by multiple and varied challenges related to providing anticancer chemotherapy. Challenges surround early cancer detection; managing chemotherapy; clinical, diagnostic and therapeutic good practices; accessibility of drugs; competent healthcare workers; research; and healthcare policies.[5]

Early cancer detection

African countries require policies to promote early cancer detection, by means of campaigns to increase public awareness, and screening programs to detect cancer.

Managing chemotherapy

Chemotherapy can be augmented by adjuvant radiotherapy or surgery, or be replaced by hormone therapy. However, management of chemotherapy remains complex due to its significant physical effects as well as effects on morale, and even social effects. Increased care is needed to try to control, or at least minimize, side effects of chemotherapy.[6]

Clinical, diagnostic, and therapeutic good practices

Chemotherapy requires hospital infrastructures and technical expertise. Advances in these aspects are noticeable in southern Africa (South Africa) and northern Africa (Algeria, Tunisia, Egypt) where specialized chemotherapy units are available.[4]

Antimitotics are generally administered to physically and psychologically fragile patients who are at high risk of getting infections. Yet most African countries lack the ideal framework to administer these treatments: there might be no room to prepare antimitotics, no isolation room, no laminar flow hood, or no sterile syringes. In addition, there might be problems in referrals among oncology, hematology, pediatric, gynecology, or surgery services. Qualified staff to administer the treatment is often lacking.

Accessibility of drugs

Economic barriers to treatment include the high cost of drugs, the frequent lack of a national healthcare system or health insurance, and the high prevalence of poverty (from close to 50% of the population in some countries to even higher rates).[7] Thus, to promote the availability of drugs against cancer, it is necessary to promote the listing of antimitotics by national purchasing centers, and to also encourage the generosity of pharmaceutical firms, the support of associations such as the African Organization for Research and Training in Cancer (AORTIC), and the support of families of cancer patients.

It is also difficult to control some side effects inherent to antimiotics (pain, vomiting, and lowered blood cell levels) due to difficulties in obtaining timely, affordable analgesics, 5-HT antagonists (antiserotonins), 5-hydroxytryptamine3 (5-HT3) receptor antagonists, and erythrocyte/leukocyte/platelet pellets, which are required with large doses of chemotherapy.

Cultural barriers to receiving chemotherapy will remain a primary concern for some time to come, given that some African cultures hold a widespread belief that cancer is a disease induced by supernatural forces and/or an incurable disease.[8]

Competent healthcare workers

The administration of antimitotics requires devoted and qualified healthcare personnel. In most African countries, the quality of cancer care is poor. Very often, neither a qualified oncologist, nor an experienced oncology nurse is available to administer treatment. Reasons for this deficiency include low salaries paid to specialists, which is also reflected in the fact that educated specialists from southern Africa tend to migrate to northern Africa. Policies regarding the training, promotion, and coordination of healthcare personnel have to be re-examined to ensure the availability in Africa of a critical core of personnel who are technically competent to provide chemotherapy.[5]

Research

Cancer research in Africa is not usually in the form of international, multicenter studies of chemotherapies. There is a need to promote the dissemination of results of African research by publishing findings in renowned medical journals. Currently, there is an absence of support for publishing results of African studies, particularly in specialized journals.

Healthcare policies

Despite continuing problems such as a lack of essential drugs, there is an increasing awareness about the need for improved cancer care in Africa. The 2006 World Cancer Declaration presented during the 2006 UICC World Cancer Congress is one example of this. In addition, renewed interest led to the March 2007 London Declaration on Cancer Control in Africa.

National cancer control plans need to be established in Africa and given priority. Resources need to be mobilized to develop a cancer registry (to certify cancer cases), to establish prevention and screening programs (given that 1/3 of cancers in Africa could be largely avoided), to set up a financial framework, to set up training programs, and to establish regional or local training institutes, centers of excellence for treating cancer patients, and centers for cancer research.[9]

Conclusion

Anticancer chemotherapy challenges in Africa are real and varied. Many challenges could be met if they were given a significant importance in healthcare budgets. This is especially important given that worldwide, 12.5% of deaths are due to cancer, more than deaths from HIV/AIDS, tuberculosis and malaria combined. To address these challenges in anticancer chemotherapy in Africa, the issues should be studied in-depth and a platform to mobilize resources should be developed. □

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