Sub-Saharan African children and cancer: how do we improve the outcome?

Cancer de l'enfant en Afrique Subsaharienne : comment peut-on améliorer l'efficacité de la lutte ?

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Of the 9.7 million children who die in low income countries the majority are due to preventable causes and only 150,000 are due to childhood cancers, and as such, paediatric oncology is not high on the priority list of health problems in most low income countries. Figures from the world literature reveal that 20% of childhood cancers develop in the 1st world countries and they achieve a survival rate approaching 80%. In Africa and the developing world where 80% of the childhood cancers occur, the survival rate is a dismal 25%.

There are many reasons for this vast discrepancy in survival rates. Even in a country such as South Africa, with a very active paediatric oncology community and a relatively good hospital referral system, the survival rates do not approach that of the 1st world. Despite our best efforts there are at least 40 to 50/100,000 children with cancer who are never diagnosed and thus not treated. In our country, and no doubt in other African countries, there are many factors resulting in this poor survival. It probably stems from a lack of recognition that cancer occurs in children, in both the medical fraternity and the general population, resulting in delayed referral, diagnosis and treatment. Lack of referral centres, lack of specialized medical staff from doctors to nurses also plays a major role in the survival and referral of these children. In many parts of Africa, lack of financial support coupled with a lack of centres to diagnose, treat and support these children further compounds the problem. Lack of a reliable supply of chemotherapeutic and supportive agents, lack of allied health services and a reliable blood source also contribute to a poorer outcome.

What can Africa do in an attempt to change these dismal figures?

Firstly, we need to diagnose the patients and then secondly develop strategies to optimally treat those with the best possibility of a successful outcome. Early diagnosis often is associated with less extensive disease, a better prognosis and these children often need less treatment to achieve a successful outcome.

How do we diagnose childhood cancers early?

There are 3 key areas involved in the early diagnosis of childhood cancers.

Firstly, we need to have a high index of suspicion. Parents need to be educated that children can get cancer and that they should seek help early for persistent symptoms and signs. The village elders, the staff in the primary health care clinics, the nurses of the villages need to be taught that malignancies do occur in children. Likewise the doctors in peripheral hospitals need to be brought on board and reminded that childhood cancer exists and that early referral is warranted and essential.

Secondly, we need to recognise those patients who are at high risk of developing cancers. Children with neuro-cutaneous syndromes and chromosomal disorders are on this list and need to be carefully evaluated when they present with problems as they may be due to an underlying malignancy. All children with immunodeficiency states are also at high risk. In Africa this group of patients equates with those who are HIV positive and all HIV positive patients with signs or symptoms that cannot be explained by the disease need to be evaluated for a malignancy, specifically lymphoma and Kaposi cell sarcoma.

Thirdly, we need to be aware of the RED FLAG signs of childhood cancer. These are a group of clinical signs and symptoms that should alert a physician, nurse or any health care worker, parents or other care-givers that the child may

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have an underlying malignancy. As the commonest malignancies in children generally occur in the central nervous system, orbit or abdomen and the bone marrow, the signs/symptoms are geared towards these systems.

Bone pain and joint pain

These can occur with both primary and secondary bone tumours. Osteosarcoma as well as other tumours, such as neuroblastoma, rhabdomyosarcoma that spread to marrow may also present with bone pain. The children often refuse to walk, and develop a limp or abnormal gait. They may also develop swelling, tenderness and pathological fractures.

Lymphadenopathy

Many malignancies in childhood can present with lymphadenopathy but one needs to be aware that lymph nodes are also common in normal children. There are a multitude of non malignant aetiologies for lymphadenopathy. The common malignancies associated with enlarged lymph nodes are lymphoma and leukemia but many others may also cause lymphadenopathy. The size and the site of the nodes are important as well as any associated findings such as pallor, petechiae or hepatosplenomegaly in deciding their significance.

Pallor and purpura

The combination of these two signs is very worrying in children and should always alert one to the possibility of a malignancy. There are, of course, many other causes for anaemia in Africa including malaria that is epidemic in vast areas of Africa. The combination of these signs is often the presenting sign of leukemia or other malignancies that have infiltrated the bone marrow space.

Unexplained masses

A mass, any where in the body, can be the presenting sign of a malignancy in children. The position of the mass will often give a clue as to the possible aetiology. Abdominal masses or distension have many causes that include many malignancies or tumours that involve any of the abdominal organs. The list includes leukemia, lymphoma, nephroblastoma, neuroblastoma and many others. In large areas of Africa jaw masses are extremely important and are often due to endemic Burkitt lymphoma but other lymphomas and sarcomas maybe important in non endemic areas. Testicular, muscle, bone and other soft tissue masses can occur with a variety of different malignancies.

Unexplained neurological signs

As almost 30% of childhood cancers are located in the central nervous system, children with unexplained neurological signs need to be carefully evaluated for tumours. The signs include persistent headaches, early morning vomiting, cranial nerve palsies, enlarging head circumference, urinary and faecal incontinence, paraplegia and hemiplegia amongst many others.

Changes in the orbit or the eye

Symptoms and signs involving the orbit and the eye maybe the initial event that helps in diagnosing a malignancy. The causes vary from stage 4 neuroblastoma, leukemia to a localized rhabdomyosarcoma. The white pupil (leukocoria), the classical sign of a retinoblastoma, is also an important finding. The presence of a squint at any age can be a sign of an intracranial or retinal tumour and needs to be fully evaluated to exclude these possibilities.

Persistent and unexplained fever and weight loss

Pyrexia is common in children and in Africa the most common cause is infection but if it is persistent then malignancies need to be considered and appropriate investigations are performed. Loss of weight has many causes and in Africa, malnutrition is the most common cause, but on occasions, persistent weight loss, in spite of adequate intake, maybe a sign of an underlying malignancy.

Conclusion

These early warning signs of childhood cancer need to be plastered all over Africa; in clinics, in hospitals; in government buildings and in school buildings. Pharmacies and shopping centres should also display them prominently to promote awareness on childhood cancers. They need to be displayed in the newspapers, on the TV stations and broadcast widely on the local radio stations.

Once we, in Sub-Saharan Africa, can diagnose the cancers and arrange for rapid referral, we can start to get systems in place to treat these children so that they will become long term survivors. It will need the support of the departments of health, it will need finances, facilities, centres of excellence staffed by competent dedicated persons, a support system of laboratories and radiology, as well as pharmacies to achieve a reasonable survival rate for the children of Africa who develop cancer. We need parent support groups to lobby governments and departments of health for the children of Africa who are afflicted with cancers. We will need to get the support of the Centres of Excellence in the 1st world countries to help, to teach, to provide support, to develop treatments appropriate to African regimes as well as create guide

lines to treat these children. This is already starting to take place in certain countries in Africa but there are many other countries that have very little or no paediatric services at all.

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