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The incidence of septic arthritis in Malawian children

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Abstract The incidence of septic arthritis in Malawian children was estimated by assessing the incidence in the relatively enclosed district of Chikwawa. We found an incidence of approximately one in 5,000 in the under-five age group and one in 13,000 in the 5–15 age group.

Résumé La fréquence des arthrites septiques chez les enfants Malawiens a été estimée dans le district relativement clos de Chikwawa. Nous avons trouvé une fréquence d'approximativement 1 sur 5,000 dans le groupe de moins de 5 ans et 1 sur 13,000 dans la groupe de 5 à 15 ans.

Introduction

Several authors have reported a high incidence of septic arthritis in children in Malawi and in sub-Saharan Africa as a whole [2, 4, 6] yet none give any indication of what the actual incidence is. We, and others [1, 3, 7], have counted the number of patients presenting to a particular institution over a period of time, but this does not give a true incidence, as we do not know the denominator figure of the number of children in the area being studied who do not present with septic arthritis nor do we know the full numerator figure, as we do not know the number with septic arthritis who do not present to our institution. We decided to investigate the incidence by performing a study in a community that is relatively isolated and well defined.

Patients and methods

Chikwawa is a district in the south of Malawi bounded on the west by the border with Mozambique and on the east by the escarpment of the African Rift Valley. It is predominantly rural, and most of its medical care is given by one

main government district hospital. There is also a small mission hospital 10 km from the district hospital, and several small private clinics that serve the small middle class but which do not have facilities for surgery or formal drainage of joints.

Outpatient attendance figures are available from hospital authorities for the year 2002: There were 461,669 consultations in the district hospital and 8,025 at the mission hospital. Some patients attended more than once, and some may have attended both centres; however, we have no reason to believe that this would occur in a disproportionate manner, and therefore, it is estimated that the mission hospital saw 1.7% of the patients presenting to outpatients, and the district hospital the remaining 98.3%. A small number of patients with access to transport may have travelled to Blantyre, which is 35 km away. This number could not be measured.

The last population census in Malawi took place in 1998. Population projections by the Malawi National Statistical office (<http://www.nso.malawi.net>) have since estimated the population in Chikwawa in 2002 to be 400,811. Using their data, the population under 5 years old can be estimated at 77,040 and the population under 17 years old estimated at 197,868. The population aged 5–16 is therefore 120,828. Between 1 July 2001 and 30 June 2002, all cases aged 16 and under with a clinical diagnosis of septic arthritis that presented to Chikwawa district hospital were recorded. The recording was done by a trained orthopaedic clinical officer (GM) who saw all the cases, confirmed the diagnosis clinically by drainage under aseptic conditions, and further treated the patients with antibiotics.

Results

There were a total of 23 cases of septic arthritis, of which 15 were male and eight female. Eight of these cases were 5 years of age and over, and 16 were under the age of five. If we assume that 98.3% of patients in Chikwawa use the district hospital, then we can assume the population between 5 and 16 years old served by the hospital was $0.983 \times$

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120,828=118,773 and the population under 5 years old was $77,040 \times 0.983 = 75,730$. Using these estimations, the incidence of septic arthritis in the 5–16 age group was eight in 118,773, or approximately 1:14,000, and in the under-5 age group, 16 in 75,730, or around 1:5,000.

Discussion

It is likely that these figures are an under representation, as some children will not reach hospital because the parents choose to use alternative treatments and some children, as discussed above, might travel outside Chikwawa district. However, if we take these figures as a rough estimate, then this study suggests that children under 5 years old have an incidence of septic arthritis every year of one in 5,000. Thus, over 5 years from birth to the age of 5, a child will have a risk of at least one in 1,000 of having septic arthritis. Although the incidence in the under-5 group is high, the incidence in the 5–16 group is comparable to reported results in the developed world: in Australia, an incidence of 9.2 per 100,000 was found in the general population [5]. The under-5 population for the whole of Malawi in 2002

was estimated by the National Statistical Office as 1,791,625. If our incidence figure is assumed to be valid for the whole country, then each year, we can expect 358 children under the age of 5 years to present with septic arthritis.

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