



# Outcomes of human immunodeficiency virus–infected and –exposed children undergoing surgery—a prospective study

Jonathan Saul Karpelowsky<sup>a,\*</sup>, Ernesto Leva<sup>b</sup>, B. Kelley<sup>a</sup>, Alp Numanoglu<sup>a</sup>, Heinz Rode<sup>a</sup>, Alastair J.W. Millar<sup>a</sup>

<sup>a</sup>Red Cross War Memorial Children's Hospital, University of Cape Town, Cape Town, South Africa

<sup>b</sup>Buzzi Children's Hospital, Milan, Italy

Received 1 May 2008; revised 30 August 2008; accepted 31 August 2008

## Key words:

HIV;  
AIDS;  
Surgery;  
Complications;  
Infection;  
Immunocompromised

## Abstract

**Aim:** Human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) is a worldwide pandemic. Mother-to-child transmission programs should theoretically minimize vertical transfer of the virus, but with variable effectiveness of implementation a significant number of children become infected and may present for emergency, diagnostic, and elective surgery. The aim of this study was to prospectively document the clinical presentation, the spectrum of pathology, and surgical outcomes of patients presenting to our hospital. This formed part of a pilot study of a collaborative international working group studying HIV infection in children, which included the Buzzi Children's Hospital Milan, Italy; the University of San Diego, California, USA; and the Red Cross War Memorial Children's Hospital and University of Cape Town, School of Adolescent and Child Health, Cape Town, South Africa.

**Method:** Clinical data from all children admitted to the surgical service of the Red Cross War Memorial Children's Hospital between July 2004 and December 2006 with either a history of HIV exposure (born to an HIV-infected mother) or confirmation of HIV infection by ELISA or polymerase chain reaction was collected. The clinical course was documented prospectively for the duration of admission and subsequent follow-up as recorded in case records review. The spectrum of pathology, surgical intervention, outcome, complications, World Health Organization stage of AIDS, and type of antiretroviral therapy were all noted. Comparative outcomes and subgroup analysis were not done in this part of the study.

**Results:** One hundred and thirteen patients were included in the study over the 30-month period. The average age was 24 months (1 day to 11 years). Seventy-nine (70%) of the 113 patients were infected and 34 (30%) were exposed, 9 of whom subsequently tested negative. Of the infected group, 53 (67%) patients were on antiretroviral therapy. The extent of disease in the infected group of patients according to the 2006 World Health Organization criteria was as follows: stage 1, 4 (5%); stage 2, 12 (15%); stage 3, 51 (65%); and stage 4, 12 (15%). All patients had nutritional assessments and were plotted on growth curves. Sixty-two (54%) were found to be malnourished and 41 (36%) of the children were found to have comorbid disease processes. Eighteen patients (16%) were treated with antibiotics or conservative

\* Corresponding author. Department of Paediatric Surgery, Red Cross War Memorial Children's Hospital, Cape Town 7700, South Africa. Tel.: +27 21 6585012, +27 83 7770888 (mobile); fax: +27 21 685 6632.

E-mail addresses: jonathan.karpelowsky@uct.ac.za, jontyashleigh@gmail.com (J.S. Karpelowsky).

therapy alone. The remaining 95 patients (84%) underwent an average of 1.6 procedures (range, 1–35), 59 (52%) in an elective manner and 36 (31%) as an emergency. When assessing the relationship of HIV to the presenting disease state, 58 (73.4%) had HIV-related diseases and 52 (46%) presented with sepsis. A total of 29 (25%) patients had surgical complications of which 6 (20%) were not considered to be HIV related. Nine (31%) had, in retrospect, incorrect management of the presenting disease, leaving 14 (48%) who potentially had HIV-related complications of poor wound healing and sepsis. A total of 100 (88%) were discharged alive, 6 (5.3%) died, and 7 (6%) were lost to follow-up. Long-term follow-up of 50 patients for an average of 8 months revealed one further mortality.

**Conclusion:** Human immunodeficiency virus–positive and –exposed patients present a unique challenge in management which is complicated by concomitant disease and poor nutrition. These patients require an expanded differential diagnosis. We believe that, although on the surface there may be a higher complication rate, this needs to be confirmed in an expanded comparative cohort study, which is underway and that patients should still receive the benefit of full surgical intervention.

© 2009 Elsevier Inc. All rights reserved.

Human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) is a worldwide pandemic. The current estimate for the number of people infected with HIV is 38.6 million of whom 2.3 million are younger than 14 years [1]. Sub-Saharan Africa remains the worst-affected region in the world. In 2005, there were 24.5 million in sub-Saharan Africa living with HIV. Globally, 64% of all people living with HIV live in sub-Saharan Africa. In 2005, the region was home to 2 million children younger than 15 years living with HIV and almost 90% of the total number of children living with HIV are in sub-Saharan Africa [2]. Fewer than 1 in 10 of those children has access to basic support services.

Mother-to-child transmission prevention programs should minimize vertical transfer of the virus, but with variable effectiveness of implementation a significant number of children still become infected. These children may, with increasing frequency, present for emergency, diagnostic, and elective surgery.

We prospectively documented known HIV-positive and HIV-exposed children admitted to our surgical wards to describe the spectrum of pathology and clinical outcomes in these patients. The information gained by this case series analysis will be used to provide basic data which are vital to planning of any prospective comparative cohort analysis.

## 1. Materials and methods

All patients from July 2004 to December 2006 admitted through the Red Cross War Memorial Children's Hospital surgical service who were known to be HIV positive or HIV exposed were identified. Clinical data were then documented prospectively over the duration of admission. A subsequent case note review of all further admissions and follow-up thereafter was carried out.

Parameters collected included the HIV status and the World Health Organization (WHO) [3] stage of disease. The spectrum of pathology, associated comorbidities, and nutri-

tional status and treatment prescribed were recorded. The surgical intervention, outcomes, complications, length of stay, and unique disease spectrums were all assessed.

Definitions used were as follows: "HIV infected" were patients testing positive by age appropriate testing in accordance with WHO guidelines [3]. "HIV exposed/negative" were children born to HIV-positive mothers and who were subsequently found not to be HIV infected (polymerase chain reaction negative), and a third group "exposed/unconfirmed" were HIV-exposed patients who were unable to undergo definitive virological testing owing to death or being lost to follow-up. This study had the full approval of the institutional ethics review committee.

## 2. Results

Over the 30-month period 113 patients were reviewed. The average age was 24 months (1 day to 11 years). The sex distribution was 53 (47%) female and 60 (53%) male.

Seventy-nine (70%) of the 113 patients were infected, 9 (8%) were exposed/negative, and 25 (22%) were exposed/unconfirmed status. Of the infected group, 54 (66%) patients were on highly active antiretroviral therapy (ARV). The extent of disease in the infected group of patients according to the 2006 WHO criteria was as follows: stage 1, 4 (5%); stage 2, 12 (15%); stage 3, 51 (65%); and stage 4, 12 (15%). Forty-one (36%) of the children were found to have significant comorbid disease processes.

All patients had nutritional assessments and were plotted on growth curves. Sixty-two (55%) were found to be malnourished as defined by weight and height below the 10th percentile of standard age appropriate norms. Forty percent of the HIV-exposed group were malnourished and in the HIV-infected group increasing evidence of malnutrition was documented: stages 1 to 4 were 25%, 67%, 59%, and 79%, respectively, being below the 10th percentile for weight.

Patients were considered to have HIV-related disease when presenting with an infective or neoplastic process not

Download English Version:

<https://daneshyari.com/en/article/4158673>

Download Persian Version:

<https://daneshyari.com/article/4158673>

[Daneshyari.com](https://daneshyari.com)