

The “Missed” Population of Perinatally HIV-infected Adolescent Slow Progressors in Jamaica

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The Changing Face of HIV/AIDS

The HIV/AIDS cases in Jamaica were first noted among homosexual men, heterosexual migrant farm workers and persons participating in commercial sex (1). Since then, the face of HIV/AIDS has evolved to include women and by extension, children. In 1986, the first case of paediatric HIV in Jamaica was reported at the University Hospital of the West Indies in Kingston (2). Since then there has been a cumulative increase in the number of cases of paediatric HIV/AIDS with over 700 children reported with AIDS of whom approximately 370 have died (3).

It has been recognized that there are children who have been perinatally infected with HIV who are “slow progressors”, Centers for Disease Control (CDC) Category N (4) and who may present for the first time with symptoms in late childhood or early adolescence. Such cases have been reported in Jamaica; for instance, 49 of 72 adolescents (68%) aged 10 to 19 years in the Kingston Paediatric and Perinatal (KPAIDS) Programme at The University of the West Indies were HIV-infected through perinatal transmission (5). A significant number of these adolescents presented with minor clinical complaints, such as dermatitis (72%) and lymphadenopathy (50%) (6).

The purpose of this paper is to highlight the challenges faced in the identification and management of this population of perinatally infected adolescents now living with HIV/AIDS in Jamaica.

The Initiative

In January 2001 to December 2002, the Ministry of Health, Jamaica, introduced a pilot programme using nevirapine in HIV-infected women to reduce the risk of mother-to-child transmission (MTCT) of HIV (7). In September 2002, a programme for preventing mother-to-child transmission (pMTCT) of HIV was initiated by the KPAIDS Programme

at the University of the West Indies in collaboration with the Ministry of Health under the sponsorship of the Elizabeth Glaser Paediatrics AIDS Foundation (EGPAF) and Pfizer Pharmaceutical Foundation (8). The programme which was concentrated in the parishes of Kingston, St Andrew and St Catherine, included several initiatives aimed at the prevention of the vertical transmission of the virus, including voluntary counselling and testing of all pregnant women at antenatal clinics, antepartum and intrapartum zidovudine to the HIV-positive mothers, postpartum zidovudine prophylaxis to the newborn, cessation of breastfeeding and the provision of formula feeds. During 2004, the pMTCT programme was expanded islandwide by the Ministry of Health.

Mother-to-child transmission (MTCT) has decreased from about 25% (3) before the programme to 7% in 2005 (9). The Ministry of Health has now initiated antepartum HAART (highly active antiretroviral therapy) to all HIV-positive pregnant women with the aim to further reduce the MTCT rate to < 2%, comparable with the declining rates in the developed countries.

Estimating the Number of HIV-Infected Infants

The actual number of infants born with HIV infection in Jamaica is not known and estimating this number is difficult. The Table presents a simple approach to estimating this number based on HIV prevalence rates among pregnant women attending public antenatal clinics.

A total of 1310 infants were estimated to have been HIV-infected through perinatal transmission. The annual birth cohort for Jamaica is approximately 50 000 children and the HIV prevalence among pregnant women attending public antenatal clinics has remained at approximately 1.5% since 1999 (3). However, approximately 20 000 pregnant women seek their antenatal care in the private sector each year and the HIV prevalence among these women is likely to be significantly lower (1% was used in the calculation). The estimate of 1310 may be an underestimate due to HIV perinatal transmission rates higher than 10% in some parts of Jamaica where the pMTCT programme was not fully established after 2002. Also, within the pMTCT programme itself, there were mothers who did not access the interventions and their infants became infected with HIV, as well as mothers who despite the interventions still had children infected with the virus (10). Nevertheless, this

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estimate is significantly higher than the cumulative number of reported paediatric AIDS cases indicating a significant level of under-ascertainment and/or under-reporting of HIV infected children in Jamaica, including a number of “slow progressors”.

The Adolescent “Slow Progressor”

Children who are perinatally infected with HIV tend to run a more aggressive course of the disease with approximately 50% succumbing to their illness within two years (11). In 1986, very few physicians had the knowledge or the inclination to diagnose and treat the disease and it can be assumed that most of the children perinatally infected with HIV died.

However, there are reports of several cases of children, above 8 years of age, with newly diagnosed HIV infection and presenting with varying signs and symptoms (5, 6). One case involved a 10-year old boy who presented with recurrent tonsillitis while a 10-year old girl presented with a history of not walking and was diagnosed with Guillain Barré syndrome. There was also a 9-year old boy with enlarged cervical lymph nodes as the only complaint. All these children were seen at the Bustamante Hospital for Children in Kingston, Jamaica.

Some of the pre-adolescents were asymptomatic and were only diagnosed because their parent(s) became ill and were found to be HIV-positive, so according to protocol, the child was brought in for testing and also found to be HIV-positive.

It is now clear that we need to be alert to a population of “slow progressors” of perinatally infected children, who are becoming adolescents, and are totally unaware of their HIV-positive status.

Diagnostic Dilemma

It is important to realize that in the population of children perinatally infected with HIV there are several factors that contribute to the diagnostic dilemma:

- * Children with HIV can present with exactly the same illnesses as those who do not have the virus. Medical conditions like otitis media, sinusitis, skin lesions, exaggerated allergic response to insect bites are all conditions seen in normal children within an outpatient setting. Pneumonia, gastroenteritis, malnutrition, failure to thrive, meningitis and sepsis are diagnoses warranting hospital admission but again, HIV infection can be missed if there is not a high index of suspicion.
- * Children with HIV may not be ill at all, and may never have been admitted to hospital.
- * Some children with HIV may have presented to hospital acutely ill but then died without HIV ever being diagnosed at all.

The fact is that unless the children are tested for HIV then their real status will not be known, and many children

continue to live and die with perinatally acquired HIV infection.

Importance to General Practitioners

This observation has important implications for members of the medical fraternity as well as the general population, and a high index of suspicion needs to be cultivated in general practitioners who are usually the first line of contact for the community. Physicians in general practice may be faced with a 10-year old with chronic otitis media who is repeatedly being treated with antibiotics with dubious resolution, who may even be referred to an otolaryngologist, but the thought of underlying HIV infection does not arise as the child appears “too well”. They may encounter a 12-year old “asthmatic” who is frequently being prescribed inhaler medications and macrolide antibiotics for community acquired respiratory tract infections which do offer some relief but the real diagnosis could be lymphoid interstitial pneumonitis (LIP) or an opportunistic mycobacterial infection. Yet again, could the 9-year old with recurrent gastroenteritis thought to be induced by dairy products be really a HIV-infected “slow progressor”?

Another area of concern is that these children, some probably already teenagers, are totally unaware that they may be infected with the virus and may be engaging in unprotected sexual activity.

Reaching the Teenagers

It is important to identify pre-adolescents and adolescents that are infected with HIV so as to:

- * Treat them for the infection that will undoubtedly surface at a later stage
- * Educate them about risk reduction and responsible sexual behaviour and
- * Heighten the awareness of HIV and its sequelae in this vulnerable population.

An innovative concept, the “Bashy Bus”, developed by Penelope Campbell, project officer with UNICEF (12) in collaboration with Children First and Research Analysis and Associates has been met with fair success. This novel approach to the adolescent HIV/AIDS dilemma in Jamaica earned her the 2006 Young Investigators Award from among 12 000 applicants at the recent XVI International AIDS Conference (13). The bus is a mobile transport equipped with information, skills-based counselling, STI clinical services, HIV rapid testing and “edutainment” aimed at adolescents from 9–14 years. It goes into HIV/STI high prevalence communities across three parishes, St Catherine, St Ann and St James in Jamaica. This pioneering approach seems promising, however, is there more that can/must be done?

Possible Strategies

The HIV Rapid test has been shown to be as reliable as the ELISA antibody test for HIV diagnosis and can be utilized to

identify children as well as adults infected with HIV. HIV rapid testing which is now available in both public and private laboratories has reduced the waiting period for HIV diagnosis to approximately twenty minutes. This has made HIV testing not only more feasible but also more practical as the patient can now wait for the results and have adequate follow-up arranged.

There are several possible strategies that could be considered to identify and subsequently manage both adults and children living with HIV.

- * All patients, men and women, admitted in public and private hospitals should be screened for HIV and this protocol should be recognized as standard hospital procedure that has already been supported by Ministry of Health policies.
- * All children and pre-adolescents of persons living with HIV should be tested.
- * All children admitted to public hospitals for any illness should be screened for HIV as a routine.

Other possible suggestions could include:

- * Discretionary HIV testing of adolescents and young adults presenting to a general practitioner with an acute complaint.
- * Premarital counselling and blood testing for young couples contemplating marriage, realizing that the yield from this intervention would likely be low as many children are born out of wedlock.
- * Testing all children at any point whenever they present for medical care if they have not already been tested.

CONCLUSION

Perinatally HIV-infected adolescent “slow progressors” present a challenge in their detection and subsequent treatment. They may present with few or no symptoms at all and ignorance of their HIV status may be the single most critical factor that delays optimizing their management. The purpose of this article is to heighten the awareness of medical personnel in general practice to these adolescent “slow progressors”, and create a higher index of suspicion for those situations in which an HIV test may be indicated. It is intended also to increase the sensitivities of those persons who may think that they are not at risk because they have not been involved in “risky” behaviour, as well as to encourage all of us to be more involved in the fight to curb this epidemic.

REFERENCES

1. Figueroa JP, Brathwaite A, Ward E, DuCasse M, Tscharf I, Nembhard O et al. The HIV/AIDS epidemic in Jamaica. *AIDS* 1995; **9**: 761–8.
2. Christie CDC, Bain B, Pierre R, Smikle MF, Evans-Gilbert T, Fredericks J et al. HIV/AIDS in women, infants, children and adolescents in Jamaica. A further “call to action”. *West Indian Med J* 2001; **50**: 258–62.
3. National HIV/STI Website for Jamaica. www.jamaica-nap.org. Accessed July 24, 2006.

Table: Estimated number of infants infected with HIV in Jamaica, 1986 to 2005

Characteristics	1986–1999	Pre pMTCT era 1999–2002	MTCT with nevirapine or zidovudine 2002–2005	Total
Annual birth cohort (estimate)	50 000	50 000	50 000	
HIV prevalence in pregnant women	0.5%	1.5%	1.5%	
Estimated number of HIV positive pregnant women delivering per year	Unknown	650*	650*	
Estimated MTCT HIV transmission rate	25%	25%	10%	
Estimated number of HIV-infected infants	400	650	260	1 310

* Calculation: 1.5% in 30 000 = 450 plus 1% in 20 000 = 200 – Total 650

4. Pizzo PA, Wilfert CM. Markers and determinants of disease progression in children with HIV infection. The Pediatric AIDS Siena Workshop II. *J Acquir Immune Defic Syndr Hum Retrovirol* 1995; **8**: 30–44.
5. Pilgrim N, Kershaw T, Pierre RB, Moore J, Palmer P, Davis D et al. HIV positive adolescents in Jamaica: Do they differ by guardian status. *West Indian Med J* 2006; **55** (Suppl 4): 42.
6. Walker E, Mayes B, Ramsay H, Hewitt H, Bain B, Christie CDC. Socio-demographic and Clinical Characteristics of Jamaican Adolescents with HIV/AIDS. *West Indian Med J* 2004; **53**: 332–8.
7. Harvey KM, Figueroa JP, Tomlinson J, Gebre Y, Forbes S, Toyloy T et al. An assessment of mother-to-child transmission prevention in 16 pilot antenatal clinics in Jamaica. *West Indian Med J* 2004; **53**: 293–6.
8. Christie CDC. A paediatric and perinatal HIV/AIDS leadership initiative in Kingston, Jamaica. *West Indian Med J* 2004; **53**: 283–92.
9. Christie CDC, Steel-Duncan J, Palmer P, Pierre R, Harvey K, Johnson N et al. Efficacy of prevention of mother-to-child-transmission of HIV with perinatal AZT in a non-breastfeeding population from 42 antenatal clinics in Greater Kingston, Jamaica. Third International AIDS Society Conference on HIV Pathogenesis and Treatment, Rio de Janeiro, Brazil, July 24–27, 2005, poster presentation, abstract # TuPe5.2P07.
10. Dunkley-Thompson J, Steel-Duncan J, Pierre R, Palmer P, Billings C, Anderson-Allen M et al. Lost opportunities for pMTCT of HIV in Greater Kingston, Jamaica. C42 – Monitoring and evaluation of prevention programmes. *E-Journal of the International AIDS Society*. Sixteenth International HIV/AIDS Conference, Toronto, Canada, August 13–16, 2006; Abstract: CDC1828.
11. The Global HIV/AIDS Pandemic, Global Statistics, UNAIDS/WHO AIDS Epidemic update, December 2004. Updated 07/24/2006, pg. 3 – www.pedaids.org. Accessed October 7, 2006.
12. Campbell P, Bell R. Baseline study informs establishment of a mobile unit providing HIV/AIDS/STI information, skills and services to vulnerable adolescents. Sixteenth International AIDS Conference, Abstract # WEAC0202.
13. UNICEF – HIV/AIDS and children. www.unicef.org/aids/index35333. Accessed October 9, 2006). Jamaican wins prestigious award at AIDS Conference, August 17, 2006. www.golocaljamaica.com. Accessed October 9, 2006.