Paediatric HIV: The Experience in Ireland 2004-2011

Abstract:
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Abstract
Despite effective prevention strategies paediatric HIV infection remains an important condition in Ireland. To characterise presentation and identify barriers to optimal management a retrospective chart review of HIV-infected children presenting in Ireland, 2004-2011 was undertaken. Forty-two HIV-infected children were identified; (25 male). Median age at presentation was 6 years (range 0-16 years). 38 children (90%) were born to African mothers. Eleven (26%) were born in Ireland. Twenty-five (59%) were late diagnoses; 11 were symptomatic. Ten of 12 foreign born HIV-infected children had antiretroviral exposure with frequent resistance associated mutations. Seven of 8 children with stage C disease had previously been admitted to hospital in Ireland before diagnosis. Maternal non-adherence to recommendations and seroconversion in pregnancy challenge the goal of paediatric HIV eradication. Targeted strategies for women at risk of infection in pregnancy are required. Late HIV diagnosis remains common, highlighting the need for a more proactive approach to HIV testing.

Introduction
The epidemiology of paediatric HIV infection in Ireland has changed considerably since the first child was diagnosed in Ireland in 1985. Initial studies reported that most infected children were born to Irish women with intra-venous drug use (IDOU) related infection. The vertical transmission rate (VTR), at 12-15%, was at the lower end of the reported range. This low transmission rate was attributed to the fact that this was primarily a non breast-feeding population, in the relatively early stages of the HIV epidemic. Thereafter, coupled with the economic upturn of the mid to late nineties, Ireland experienced a marked increase in immigration, particularly from sub-Saharan Africa. In the absence of interventions, a VTR of approximately 30% might have been anticipated in this largely African breast-feeding population. Fortunately, these demographic changes coincided with the roll out of routine antenatal testing and the introduction of the Irish programme for prevention of mother to child transmission (PMTCT) of HIV in 1998 – 1999. There followed a reduction in the vertical transmission rate to <1%. Despite this success, HIV-infected children continue to present for care and new infections, often at an advanced stage, are diagnosed each year. This study sought to characterise the current modes of presentation of HIV-infected children in Ireland in order to highlight the continuing importance of HIV infection as a diagnostic consideration, even in this era of effective prevention, and to identify barriers to the early diagnosis and optimal management of infected children.

Methods
The Rainbow Clinic at Our Lady’s Children’s Hospital, Crumlin and the Children’s University Hospital, Dublin is the national referral centre for all HIV-infected children in the Republic of Ireland. A retrospective chart review of all HIV-infected children who presented between 2004 and 2011, inclusively, was undertaken. Children were categorised by place and timing of diagnosis. Group 1 included children diagnosed prior to arrival in Ireland; Group 2, infants born to mothers known to be HIV positive and diagnosed during postnatal monitoring i.e. early diagnosis; Group 3, all other infants and children diagnosed in Ireland, i.e. late diagnosis. The CDC classification of Paediatric HIV infection was used. Data collected on a standardized data sheet included; demographics, duration of residence in Ireland, hospitalisations in Ireland prior to HIV-diagnosis, antiretroviral (ARV) exposure history, clinical presentation, CDC stage, co-infections, CD4 count, viral load and resistance associated mutations.

Results
Forty-two HIV-infected infants and children were identified; 25 male and 17 female. The median age at presentation was 6 years (range 0-16 years). Overall 90% (38/42) were born to African mothers; 69% (29) in Africa. HIV transmission was vertical in 90% (38/42), horizontal in 5% (2) and unknown in 5% (2). Seventy-one percent (30) of children were newly diagnosed at presentation. The characteristics of each group are listed in Table 1.
Group 1: Children diagnosed prior to arrival in Ireland

Twelve children had been diagnosed with HIV prior to arrival in Ireland. Ten of 12 (83%) were in Group 1 (children diagnosed prior to arrival in Ireland). None of these children were lost to follow-up at the time of review. Five were on highly active antiretroviral therapy (HAART) of whom 3 were virally suppressed. Five, off treatment, had prior ARV exposure (1 HAART, 2 dual or monotherapy, 2 infant post exposure prophylaxis (PEP)). Of these 5, 2 had undetectable viremia had baseline resistance testing. Three, each with prior HAART exposure, had detectable resistance associated mutations, (K103N, Y181C, M184V, M41L, T215Y). Two children were ARV naïve. The history of prior diagnosis and/or ARV exposure was not always immediately disclosed leading to delay in initiation of appropriate ARV therapy in one case. Two children had tuberculosis. There were no co-infections with hepatitis B or C.

Discussion

The routine programme for prevention of mother to child transmission of HIV in Ireland involves opt-out antenatal HIV testing. In contrast, consistent with prior reports, almost one third of those had resistance associated mutations, illustrating the importance of baseline resistance testing. In contrast, consistent with prior reports, viral resistance was not detected amongst the ARV naïve children, suggesting that, as yet, transmitted resistance in the paediatric population remains uncommon.

Twelve children had been diagnosed with HIV prior to arrival in Ireland; 10 in Africa, and two in Europe. Ten of 12 (83%) were in Group 1 (children diagnosed prior to arrival in Ireland). None of these children were lost to follow-up at the time of review. Five were on highly active antiretroviral therapy (HAART) of whom 3 were virally suppressed. Five, off treatment, had prior ARV exposure (1 HAART, 2 dual or monotherapy, 2 infant post exposure prophylaxis (PEP)). Of these 5, 2 had undetectable viremia had baseline resistance testing. Three, each with prior HAART exposure, had detectable resistance associated mutations, (K103N, Y181C, M184V, M41L, T215Y). Two children were ARV naïve. The history of prior diagnosis and/or ARV exposure was not always immediately disclosed leading to delay in initiation of appropriate ARV therapy in one case. Two children had tuberculosis. There were no co-infections with hepatitis B or C.

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References


