Study shows children on HAART do extremely well at South African clinic

At the 16th Conference on Retroviruses and Opportunistic Infections (CROI) Dr Tammy Meyers presented data from a large cohort of children on highly active antiretroviral therapy (HAART) at Harriet Shezi Children's Clinic in Chris Hani Baragwanath Hospital, Soweto, South Africa.(1)? Of 2,102 chidren initiated on HAART over a four year period (April 2004 ? March 2008), 1734 (82%) are alive and in the programme. Most of these children started HAART with severely compromised immune systems. Based on studies of untreated children at this stage of HIV disease(2)?(3)?, it is fair to say that nearly all would have been dead had they not been placed on HAART. By the end of the study, half the children had been on HAART for at least 17 months.

Analysis shows that more than 90% of the cohort had less than 400 copies of HIV per millilitre of blood after 18 months on the programme1, indicating that treatment was effective. On average, CD4 percentage rose from 11% to over 25% (in children CD4 percentage, rather than CD4 count is used because it is more stable). HIV-positive children on average weigh less and are shorter than HIV-negative children of the same age. The children in the cohort showed remarkable improvements in both these measures.

132 (6%) children died. Most deaths occurred within the first 90 days of treatment, indicating that many started too late. Meyers made the excellent point that infants should now be treated immediately upon diagnosis. This is based on the findings of the CHER study, published last year, which showed that treating infants treated immediately upon diagnosis (as opposed to deferring treatment until their CD4 percentage met the current SA guidelines for initiating treatment) had much lower mortality.(4)? The factors at baseline that predicted death were being severely underweight, having a high viral load, being on TB treatment and being young. But even among some of these categories children did well. For example, 28.6% of children were on TB treatment, a much greater percentage than the number of deaths.

Both clinical trials and cohorts of children have previously been published showing excellent results on HAART. For example, a widely publicised successful cohort on 94 Haitian children was reported in 2005.(5)? The contribution of the Harriet Shezi study is that this is a very large African cohort in a resource-limited operational setting.

There were 3,553 children in the clinic database. 369 were excluded because they were in the clinic before the start of the cohort period. Another 389 were excluded because they had no follow-up. This left 2,795, of whom 2,216 were initiated on HAART. 91 were excluded from the study because they had no further visits after initiation. 23 were excluded because they were over 15. Of the remaining 2,102 included in the analysis, 1,734 were alive and active at study end. 132 died. 104 transferred and 132 were lost to follow up.

Interestingly of the 579 who did not start HAART (presumably in most cases because they were ineligible according to SA guidelines), 264 are alive and active in the programme. 78 died (double the proportion in the treatment cohort). 189 were lost to follow up (more absolutely than the treatment cohort) and 67 transferred.

At baseline: 51% of the cohort were males. Median viral load was over 100,000 [IQR log viral load: 4.6-5.8]. Median CD4 percentage was 11.5 [IQR: 6.9-16.2]. Weight for age Z-score median was -2.12 [IQR: -3.3 to 1.14]. Height for age Z-score median was -2.6 [IQR: -3.6 to -1.7]. Median age was 4.3 years.

The median follow-up time on HAART was 17.05 months [IQR 5.7-29.2]. The mortality rate within the first 90 days was nearly 15 per 100 child years (CY) and about 2 per 100CY after that (might be slightly inaccurate based on reading

off graph). The mortality rate was markedly higher in children under 18 months, over 30 per 100CY within the first 90 days and 5 per 100CY after that. Viral load after 18 months given in the summary is a Kaplan Meier estimate. Based on a graph reading, the median CD4 rose to between 25 and 30%.

An important conclusion by the authors is that a high percentage of children starting HAART are co-treated for TB, warranting investigation of drug interactions.

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1 Based on a Kaplan Meier estimate

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