

Poster presentation

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## Impact of highly active antiretroviral therapy (HAART) on clinical outcomes of vertically HIV-1 infected children

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### Introduction

The use of antiretroviral therapy produced a decrease in morbidity and mortality rates in human immunodeficiency virus type 1 (HIV-1)-infected children.

### Objectives

To update a previous epidemiological survey that demonstrated the benefits of HAART on the clinical outcome of HIV-1 vertically infected children.

### Materials and methods

We carried out a retrospective observational survey involving 346 HIV-1 vertically infected children ( $\leq 17$  years old) living in the Autonomous Community of Madrid. The analysis was stratified in 5 calendar periods (CP) on the basis of the changing antiretroviral treatment protocols: CP1 (80-89): not treatment was used in this period; CP2 (90-93): the standard of care was monotherapy with nucleoside analogue reverse-transcriptase inhibitor (NRTI); CP3 (94-96): when dual-NRTI therapy was administered; CP4 (97-98): the antiretroviral regimens was HAART with a combinations of three or more drugs; CP5 (99-06): when  $> 60\%$  of children were on HAART and less than 10% were untreated. We assumed that vertical transmission occurred on the birth day. We calculated the mean CD4<sup>+</sup> T cells count and log<sub>10</sub> viral load per year, and we studied their trend over time. Then, we estimated the Kaplan-Meier curve to analyze the occurrence of AIDS and death. Finally, we performed a Cox regression analysis to calculate the relative risk (RR) for absence of AIDS and survival.

### Results

We observed an increase of the mean CD4<sup>+</sup> T-cell percentage and a concomitant decrease of the plasma log<sub>10</sub> viral load since 1997. A total of 205 kids had a diagnosis of AIDS (59.2%) and 122 died (35.3%). The last two periods (CP4 and CP5) had significantly fewer AIDS cases compared to the previous ( $P < 0.001$ ); in particular, the relative risk of the CP5 compared to the CP1 was of 5.5 (95%CI: 3.60-8.51). In the CP5 there were less death cases compared with the other periods ( $P < 0.01$ ) and the RR was of 9.7 (95%CI: 3.49-27.2) compared to the CP1, when the event of death occurred in more than the 20% of the children.

### Conclusions

We confirmed the benefits of HAART in reducing adverse clinical outcomes as AIDS and death in HIV-1 vertically infected children in our cohort of kids living in the Autonomous Community of Madrid.

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