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Characterization of asymptomatic children infected with the human immunodeficiency virus at birth

Celine Nguefeu Nkenfou^{1,2}, Edith Saounde Temgoua^{1,3}, Béatrice Dambaya^{1,2}, Charlotte Tanguinpondum¹, Vittorio Colizzi³ and Jacques these⁴

¹CIRCB, Cameroon

²University of Yaounde I, Cameroon

³University of Tor Vergata, Italy

⁴Institut Pasteur, France

Background: Mother-to-child HIV transmission remains very high in Cameroon. Therefore, Follow up of numerous HIV infected infants is a critical issue in the country. Here, we investigated the file of HIV infected infants remaining asymptomatic in the absence of anti-retroviral therapy (ART). The first goal was to obtain an estimate of the prevalence of infants with an HIV controller like status.

Method: HIV infected infants, aged 6 months to 17 years children presenting at CIRCB for biological examinations were enrolled upon signed a proxy-consent. The enrollment took place from April 2011 to February 2013. From the medical file of 359 HIV vertically infected infants, 41 were found naive of anti-retroviral therapy and free of clinical symptoms. Diseases related to HIV infection (oral candidosis, zona, chronic diarrhea, pulmonary tuberculosis, dermatitis) were more particularly checked and corresponding infants not included in the study. From the selected infants, CD4 counts and viral load were recorded. Non-exposed children were enrolled as control group.

Results: Of the 359 infants, 41 were ARV naive and free from HIV clinical symptoms. Five of them (12%) exhibit a viral load <1200 RNA copies/ml. Their CD4 counts were found not statistically different from those of a control group of HIV negative infants ($p=0.33$). Furthermore, ten years after contamination, three children did exhibit a viral load <5500 RNA copies/ml. Altogether, this suggests the existence of pediatric HIV controllers (pHIC) with a frequency much higher (>10%).

Conclusion: Our preliminary cross sectional study highly suggests the existence of pediatric HIV controllers like in Cameroon despite all disfavoring living conditions. However, a longitudinal study would be required to confirm this hypothesis. The development of an HIV vaccine is applicable to infants of countries with high incidence of HIV infected people should benefit from the immunological analysis explaining the HIV controller (HIC) status.

nkenfou@yahoo.com

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