Low prevalence of measles antibodies in a cohort of HIV-1 infected children and adolescents from Romania

Ena L.¹, Radoi R.², Burlacu R.¹, Ionescu C.¹, Achim C.L.², Duiculescu D.¹
¹Dr. Victor Babes’ Hospital for Infectious Diseases, AIDS Department, Bucharest, Romania
²Department of Psychiatry and the HIV Neurobehavioral Research Center, University of California at San Diego, CA 92093, USA

BACKGROUND

- New-born children to HIV-infected mothers are less protected by maternal antibodies because of:
  - reduced placental transfer¹
  - absence of breastfeeding
- Unprotective measles antibodies after vaccination²
  - Response to the 1st dose 25-37%³
  - Response to revaccination 50-66%³
- Early loss of protective antibodies after vaccination³,⁴
- Impairment of naïve and memory cells responses³

Prevalence of measles antibodies in Romanian children

- European sero-epidemiology network 2 (ESEN) 2001-2002 reported⁵:
  - 89% prevalence of measles antibodies
  - 3% prevalence of measles antibodies for children < 5 years → 39% (430,000) of children had no protective antibodies
- Prevalence of 28% measles Ab in HIV-infected children³

METHODS

Observational prospective study of HIV-infected children from “Dr. Victor Babes” Hospital in Bucharest - from May 2005 until November 2007 - aiming to evaluate:
- The prevalence of measles antibodies in a group of HIV-infected children related to vaccination status and cellular immunity
- Dynamics of measles antibodies during the last measles epidemics (2005-2006)

RESULTS

- 442 children included with at least one determination of measles IgG
- General characteristics of the patients:
  - median age 17 years, range 0.2-21
  - see text FM/21/202

Longitudinal evaluation

- 119 children with negative baseline measles IgG Ab
- Median age 17 years (range 0.2-20)
- Time frame between first and second evaluation 184 days

Particular clinical & serological features

- 2 adolescents with positive IgG Ab had suggestive clinical signs of measles but IgM Ab were negative at several subsequent determinations (7)²
- 2 children with clinical and serological measles had medical evidence of previous measles diagnosis (7)²
- 6 of 10 children with seroconversion and no clinical evidence of measles were diagnosed with subacute myoclonic encephalitis

CONCLUSIONS

- We found a striking low prevalence of measles antibodies in our cohort of HIV-1 infected children.
- Fatal measles complications occurred during epidemics in most of our immune suppressed adolescents with seroconversion and no clinical signs of measles.
- In limited resources countries sustained prophylaxis measures in HIV-infected children becomes mandatory for measles control.

Practical considerations:

- Measles vaccination of perinatally HIV-1 exposed children if CD4% is > 15% at 9 (67) months during epidemics and revaccination thereafter at 15-18 months and 7 years according to the National Vaccination Program
- During epidemics according to the CD4 count.
- CD4<200/mm³ administration of h immune globulins 400mg/kg monthly
- CD4>200/mm³ → measles vaccination → determine the response to vaccination and revaccinate if IgG Ab are absent.