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Do Children Exposed to Human Immunodeficiency Virus but Not Infected Actually Have a More Robust Response to Hepatitis B Vaccination than Their Nonexposed Peers?

The recent article by Abramczuk et al. is timely (1). With improving access worldwide to antiretroviral (ARV) therapy, an increasing number of children are born who are human immunodeficiency virus (HIV) exposed but uninfected (HEU). Understanding their specific needs will allow health professionals to tailor care appropriately, making research in this area essential.

Although the authors of the above paper allude to antiretroviral use in their discussion, no mention is made of whether the study population was exposed to ARVs *in utero*. As indicated in the paper, ARV exposure may modulate placental cytokine patterns (2). It would be useful if the authors could comment upon ARV exposure and regimens used.

With regard to the hepatitis B vaccination results (anti-HBs titers), the statistical analysis accompanying Table 1 is a chi-squared test. An assumption of this test is that 80% of the cell counts have an expected frequency of greater than 5. In this case, 33% of the expected cell counts (i.e., 2 out of 6) do not fulfill this assumption. While Fisher's exact test (which could have been used in this circumstance) is significant ($P = 0.003$), it is incorrect to state that that there is a significant difference specifically between the nonresponder groups, rather than across the table as a whole. Indeed, if the 2×3 table is collapsed to nonresponders versus all others, there is no significant difference (Fisher's exact test, $P = 0.410$).

Instead it is the "very good" responder category (anti-HBs titer of $\geq$1,000 mIU/ml) that is worthy of comment. In considering very good responders versus all those with titers of $<$1,000 mIU/ml, the results are significantly different between HEU and nonexposed (NE) children ($\chi^2 = 8.78$, df $= 1$, $P = 0.003$) (assuming that Table 1, column 3, should read "$\geq$1,000 mIU/ml" and not "$\leq$1,000 mIU/ml").

HEU children are thus significantly more likely to have a very good response to hepatitis B vaccination than are NE peers. This point is not discussed in the paper. In light of other vaccination research into HEU children, this difference is interesting.

Jones et al. recently examined antibody responses in HEU children in a South African population with prevention of mother-to-child transmission based on a zidovudine and nevirapine regimen. The authors showed lower specific antibody titers to *Haemophilus influenzae* type B, pertussis, pneumococcus, and tetanus at birth in HEU than in NE neonates (3). Significantly, although the HEU group had lower initial titers, they then mounted more robust antibody responses to pertussis and pneumococcus following routine vaccination. In contrast to the above analyses, this effect was not reported to extend to hepatitis B.

REFERENCES

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