

## POSTER ABSTRACTS

11<sup>th</sup> Annual HMO Research Network Conference

April 4-6, 2005 Santa Fe, NM

### Chronic Disease 21

#### **Cord Blood Stimulated T-Cell Interferon—Production varies by Race in an HMO-based Birth Cohort**

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**Background:** The prevalence of allergic disorders has risen worldwide. One facet of the Hygiene Hypothesis proposed to account for this increase is that infants destined to be atopic are more likely to have a Th2 rather than Th1 helper cell predilection. African American children have higher total IgE at birth and a heightened risk of asthma, which could be explained by a muted Th1 cytokine response. Using the recently established Detroit area WHEALS birth cohort, we analyzed, by race, the level of CD4+ and total cell production of interferon  $\gamma$  (IFN- $\gamma$ ) in cord blood as an early marker for Th1 propensity.

**Methods:** Pregnant women residing in a geographically circumscribed urban and suburban area attending four medical group clinics and due to deliver after 8/31/03 were recruited and interviewed. Cord blood samples were obtained and IFN- $\gamma$  production by stimulated lymphocytes was measured using a whole blood assay. Intracellular cytokine production by CD4+ and CD4- lymphocytes was detected by antibody staining and flow cytometry. Two-sample Mann Whitney tests were used to compare mean IFN- $\gamma$  levels.

**Results:** Cord blood IFN- $\gamma$  was measured in 54 white and 62 African American newborns. Babies of European descent had a statistically significantly different mean IFN- $\gamma$  level produced by CD4+ cells, 1.28%, compared to African Americans, 0.67% ( $p < 0.041$ ), a pattern also found for total IFN- $\gamma$  production.

**Conclusions:** IFN- $\gamma$ , a Th1 marker potentially indicating lower risk for atopic disorders, was found to be higher in newborns of European compared to African descent in this population-based birth cohort.