Abnormal fatty acid oxidation in HIV-exposed, uninfected neonates in the US

Brian Kirmse1, Tzy-Yian Yao2, Sean Hoffer1, Paige Williams1, Deborah Kakacnen1, Rohan Hazra3, William Borkowsky2, Russell Van Dyke1, Marshall Summar1 for the Pediatric HIV/AIDS Cohort Study (PHACS)

1. Children's National Medical Center, Division of Genetics & Metabolism, 2. St. Mary's School of Public Health, Center for Biostatistics in AIDs Research. 3. National Institute of Health (NIH), Maternal and Pediatric Infectious Disease Branch, 4. Telene University School of Medicine, Section of Pediatric Infectious Diseases. 5. National Institute of Health (NIH), Division of Infectious Disease and Immunology.

ABSTRACT

Nuclear envelope translocator inhibitors (NEATs) regulate cell cycle progression and cause mitochondrial dysfunction and cell death. NEATs are associated with metabolic toxicity, including fatty acid oxidation (FAO) dysfunction and lipodysplasia. Abnormal newborn screen results for FAO in HIV-exposed neonates have been reported (1)

RESULTS

The pattern of acylcarnitines elevates to a level of biochemical dysfunction in FAO

Infants who have accessible serum specimens within 7 days from birth at July 1, 2011

Table 2. Associations between abnormal ACP and Maternal and Demographic Risk Factors in 498 SMARTT Infants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>95% Confidence Interval</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combination AORs model</td>
<td>0.22</td>
<td>(0.08,0.65)</td>
<td>0.015</td>
</tr>
<tr>
<td>Maternal age at delivery</td>
<td>0.49</td>
<td>(0.19,1.53)</td>
<td>0.32</td>
</tr>
<tr>
<td>Maternal race</td>
<td>0.10</td>
<td>(0.00,1.00)</td>
<td>0.05</td>
</tr>
<tr>
<td>Alcohol use during pregnancy</td>
<td>0.23</td>
<td>(0.01,1.00)</td>
<td>0.02</td>
</tr>
<tr>
<td>Smoking during pregnancy</td>
<td>0.48</td>
<td>(0.16,1.02)</td>
<td>0.07</td>
</tr>
<tr>
<td>Maternal under 19</td>
<td>0.63</td>
<td>(0.33,1.19)</td>
<td>0.15</td>
</tr>
<tr>
<td>African American</td>
<td>0.95</td>
<td>(0.59,1.51)</td>
<td>0.90</td>
</tr>
</tbody>
</table>

CONCLUSIONS

Abnormal fatty acid oxidation in HIV-exposed, uninfected neonates may be related to viral load during pregnancy.

ACKNOWLEDGMENTS


NATIONAL INSTITUTES OF HEALTH

NATIONAL CENTER FOR INFECTIOUS DISEASES

NATIONAL INSTITUTES OF HEALTH

NATIONAL CENTER FOR INFECTIOUS DISEASES

Revised: 2009-03-10

Tel: 202-476-2501

Fax: 202-476-3650

Email: bkirmse@cnmc.org

#865

Brian Kirmse

1111 Michigan Ave, NW

Washington, DC 20501

Tel: 202-476-2501

Fax: 202-476-3650

Email: bkirmse@cnmc.org

CONCLUSIONS

Abnormal fatty acid oxidation in HIV-exposed, uninfected neonates may be related to viral load during pregnancy. Abnormal fatty acid oxidation in HIV-exposed, uninfected neonates may be related to viral load during pregnancy.