AMERICAN ACADEMY OF FAMILY PHYSICIANS FOUNDATION

Abstract of Study Funded by the Research Stimulation Grant Program in 2013

Newborn Adiposity by BMI as a Marker for Childhood Overweight (G1305RS)

Principal Investigator: Jonathan D. Winter, MD

Institution: Shenandoah Valley Family Practice Residency

Abstract

Extensive research has explored the association between birth weight and subsequent obesity. The role of adiposity at birth, however, is much less understood. This may be because of the historical difficulty in easily assessing newborn fatness. Standardized BMI growth charts for children younger than 2 years of age, which allow for the rapid and meaningful assessment of adiposity in infants, only became available when published by the World Health Organization in 2005. My pilot study, funded by the AAFP Foundation and published in *Clinical Pediatrics* in 2010, has shown in a limited sample that adiposity at birth as approximated by BMI is a significant predictor of overweight at 5 years of age. Infants with a BMI of > 85% at birth had an AOR of 3.42 of being overweight at the age of five years. My pilot was the first study to assess adiposity at birth as approximated by BMI as a marker of subsequent obesity. The objective of this study is to expand the understanding of the association between newborn adiposity and subsequent overweight. My earlier pilot will be reproduced in a larger, more generalizable sample. Furthermore, with the increased power of this expanded study, for the first time, the association between very high BMI at birth, newborn obesity, and childhood overweight can be evaluated. This study will be designed as a retrospective cohort with data extracted from the Cerner database, a giant dataset from the Carolinas Healthcare system, the second largest public hospital system in the US. All term singleton infants with growth data from the first two weeks of life and at age five years will be included. A cohort of 2500-5000 is estimated. Multiple logistic regression adjusting for race and gender will be used to assess the association between obesity and overweight at age 2 weeks and obesity and overweight at 5 years of age. This study will result in the development of a reproducible dataset query and an established cohort that can be followed for health outcomes going forward. The development of this reproducible cohort is the first step in a larger project of linking pediatric data with parental data within the Cerner database, allowing for the exploration of prenatal antecedents of newborn adiposity. Results of this study will be presented at the NAPCRG annual meeting in 2013 for feedback before proceeding to publication.