Poor sleep in children may have prenatal origins

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A study in the Aug.1 issue of the journal *Sleep* found that alcohol consumption during pregnancy and small body size at birth predict poorer sleep and higher risk of sleep disturbances in 8-year-old children born at term. Findings are clinically significant, as poor sleep and sleep disturbances in children are associated with obesity, depressive symptoms, attention deficit hyperactivity disorder, and poor neurobehavioral functioning.

Results indicate that children exposed prenatally to alcohol were 2.5 times more likely to have a short sleep duration of 7.7 hours or less and 3.6 times more likely to have a low sleep efficiency of 77.2 percent or less across all nights, independent of body size at birth and current maternal alcohol use. Smaller body size at birth also was associated with poorer sleep and with a higher risk for clinically significant sleep disturbances among children born at term. More specifically, lower weight and shorter length at birth were associated with lower sleep efficiency, and a lower ponderal index (an indicator of fetal growth status) was associated with the presence of sleep disturbances. In addition, children with short sleep duration were more likely to have been born via Caesarean section than were children sleeping longer (23.1 percent versus 8.4 percent respectively).

According to principal investigator Katri Räikkönen, PhD, in the department of psychology at the University of Helsinki, Finland, even low levels of weekly prenatal exposure to alcohol have adverse effects on sleep quantity and quality during childhood.

"The results were in accordance with the fetal origins of health and disease hypothesis and the many studies that have shown that adverse fetal environment may have lifelong influences on health and behavior," said Räikkönen. "However, this is among the few studies that have reported associations between birth variables and sleep quality and quantity among an otherwise healthy population of children."

The epidemiologic cohort study obtained data from 289 children born at term (from 37 to 42 weeks of gestation) between March and November 1998. Sleep duration and sleep efficiency (actual sleep time divided by the time in bed) were measured objectively by actigraphy at 8 years of age for an average of 7.1 days. Parents completed the Sleep Disturbance Scale for Children to report sleep problems and sleep disorder symptoms such as bedtime resistance and sleep disordered breathing.

Results show that the odds for low sleep efficiency increased by 70 percent for every standard deviation decrease in weight at birth and by more than 200 percent for every decrease in length. For every standard deviation decrease in ponderal index at birth, the risk of parent-reported sleep disorders increased by 40 percent. Associations were not confounded by sex, gestational length, prenatal and perinatal complications, body mass index (BMI) at eight years of age, asthma, allergies or parental socioeconomic status.

The authors report that small body size at birth may function as a crude marker of disturbances in the fetal environment, and it is associated with prematurity, intrauterine growth retardation, prenatal alcohol exposure and poorer sleep quality in children and young adults. Results demonstrate that among children born healthy and at full-term, a linear relationship exists between smaller body size at birth and poorer sleep quality eight years from birth.

Source: American Academy of Sleep Medicine (news : web)