

## Hypospadias and Early Gestation Growth Restriction in Infants

Reports from Europe and the United States have indicated that there is an increasing incidence of hypospadias. This study by Hussain et al involved two tertiary care neonatal intensive care units in Connecticut. It was a retrospective study of 14 years of admissions. It showed a 10-fold increase in hypospadias over the 14 years, from 0.4% of admissions in 1987 to 4% in the year 2000. The increased occurrence of hypospadias among premature infants was associated with intrauterine growth retardation. An increased frequency of hypospadias was also noted among the infants born in the lower percentiles (3<sup>rd</sup> to 25<sup>th</sup>).

An association of hypospadias with the smaller quartiles of head circumference (3<sup>rd</sup> to 25<sup>th</sup>) was also present. The frequency was highest in first-born infants and those born to older mothers. No association was noted with race, maternal diabetes, hypertension, or pre-eclampsia. No specific teratogens were identified. There

does not seem to be an increase of a particular recognizable syndrome in spite of the association with intrauterine growth restriction. The consistent involvement of all growth parameters, i.e., weight, length, and head circumference suggested that hypospadias is related to overall poor intrauterine growth.

Hussain N et al. *Pediatrics* 2002;109:473-478.

**Editor's Comment:** *A specific etiology for the observed increase in hypospadias does not seem to be forthcoming. These are obviously real concerns with such a striking change over the last decade. The question of endocrine disrupters and the association of advancing maternal age are important, but no real clarity exists as to their real role at this time.*

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## Growth, Developmental Milestones, and Health Problems in the First Two Years in Very Preterm Infants Compared with Term Infants: A Population Based Study

Bucher et al report the results of a questionnaire sent to parents of Swiss infants born before 32 weeks of completed gestation. The parents were asked to answer questions concerning weight, body length, head circumference at 24 months of age, developmental milestones, eye and ear problems, long-term medications, fever, cough, and infectious diseases during the last 12 months. Information regarding developmental milestones is recorded in the Swiss Health Carnet given to each parent of a newborn infant. A comparison group for this study included two control infants for each index infant. The second was contacted if the first did not respond. Infants of multiple births or with severe malformations or syndromes were excluded. The control infants had to have been born in the same hospital, at term (after 37 weeks), and within 14 days of the expected date of birth of the index infant, and of the same gender as the index infant.

Three hundred nine infants born between January 1, 1996 and December 31, 1996 were included. Index infants had significantly lower body weight, body length, and smaller head circumference at 24 months *corrected* age as compared to their matched control. The mean weight difference at the age of 2 years (*corrected* for the very preterm infants) was 1.2 kg for boys, and 1.2 kg for girls. The mean difference in body length was 3.5 cm for girls and 3.3 cm for boys. Thirty-three percent of index infants were below the third percentile for length

at 24 months *corrected*. The difference in head circumference was small (0.7 cm), but statistically significant ( $p < 0.001$ ). Height and weight parameters were similar in the parents of pre-term and term infants, and in agreement with normal growth standards for adults. In the very preterm infants, there was significant motor delay, increase in eye problems and in use of long-term medications, but no difference in infectious diseases during the prior 12 months. Sitting was not delayed, but walking (mean of 14.5 months vs 13.5 months in controls ( $p=0.4$ ) and drinking out of a cup (50% of each group at 16.5 vs 13.5 months;  $p<0.001$ ) were delayed. Of the very preterm infants, 16% were unable to walk independent at 18 months *corrected* age. These infants are at increased risk for developing cerebral palsy. The authors state that such a retrospective study can include much bias, but that has been accounted for by utilizing a significantly large control group. The cause of significant growth delay remains unclear. Suggested causes include: (1) decreased length of gestation; (2) insufficient supply of nutrients over prolonged periods of time after birth; or (3) intercurrent illnesses in the first year, such as chronic lung disease which may increase energy requirements and interfere with nutrient intake.

Bucher HU, et al. *Eur J Pediatr* 2002;161:151-156.