Theme: Endocrinology

Treatment of congenital hyperthyroidism and final height: a 20-year study *(Italian J Pediatr. 2015;41:82)*

Neurodevelopmental outcomes have shown to greatly improve with early detection and treatment of congenital hypothyroidism (CH). However, the impact on growth has not yet been elucidated in detail. In this study, the authors prospectively evaluated linear growth in 215 children with permanent CH (152 girls, 63 boys) who were diagnosed at mean age of 25.1 (10.5) days and started on thyroxin at 8.8 (2.9) mcg/kg/day. The follow-up period at attainment of final height was 16.1 (1.7) years. The pubertal onset occurred at 11.4 (1.2) years in boys and at 10.4 (1.1) year in girls. The final height was significantly higher than target height [-0.1 (1.0) SDS *vs* -0.8 (1.0) SDS; $P<0.001$]. Final height showed poor correlation with age at diagnosis or the age of starting thyroxin, and was chiefly dependent upon target height and height at puberty onset. These results must be interpreted taking in account that all these children were timely detected through newborn screening, and most received treatment within first month of life.

Do we need to measure autoantibodies in all new onset pediatric diabetes? *(Pediatr Diabetes. 2015 (online first) doi: 10.1111/pedi.12304)*

The estimation of diabetes associated autoantibodies (glutamic acid decarboxylase, insulin, insulinoma-associated antigen 2) have been questionable for routine initial diagnosis of Type 1 diabetes mellitus (T1DM). A retrospective study of 1089 children (45.4% girls, mean age 10.6 y) at Boston's Children hospital was performed. A scoring system was developed using weight, age and race to classify and detect type of diabetes. Out of 1021 patients diagnosed with T1DM, diabetes associated antibodies were negative in 78 (7.9%). Using the scoring system, estimation of antibodies was found unnecessary in 85.3% of patients. The study highlights the importance of clinical evaluation of patients which cannot replace expensive laboratory testing.

Consumption of sugar-sweetened beverage and age of menarche (*Hum Reprod. 2015;30:675-83*)

Sugar-sweetened beverage (SSB) consumption is known to be associated with obesity which may indirectly affect timing of menarche. In this study, the authors evaluated the impact of consumption of sweetened beverage on timing of menarche in 5583 girls (age 9–14 y), between 1996 and 2001. During 10,555 person-years of follow-up, 94% of girls reported their age at menarche. Premenarcheal girls who reported consuming >1.5 servings of SSBs per day had earlier menarche (mean difference -2.7 mo; 95% CI: -4.1, -1.3 mo) as compared to girls consuming d"2 servings of SSBs weekly. This relation remained significant across all tertiles of baseline BMI. Non-carbonated fruit drinks and sugar-sweetened soda also predicted earlier menarche, but not iced tea. Girls consuming more SSB also reported less milk and less protein intake. Thus, even though the study didn't explore other potential confounders affecting menarcheal age, it would be still advisable to promote healthier drinks than sweetened beverages since childhood.

Predicting final height and puberty in SGA children treated with growth hormone (*Clin Pediatr Endocrinol. 2015;24:15-25*)

Growth hormone (GH) treatment was approved for use in short children born small for gestation age (SGA) in Japan in 2008. However the long term safety, effectiveness and impact on puberty were not evaluated. Data of 22 SGA children out of 61 children who were enrolled in a baseline study, was used to assess impact of low (0.033 mg/kg/d; n=29) or high dose (0.067 mg/kg/d; n=32) of GH therapy. The mean birth weight was similar in two groups and GH therapy was commenced at 5.2 to 5.4 years respectively in both groups till final height. The mean near adult height achieved was comparable to normal Japanese adults. The height velocity improved after GH therapy from 5.36 cm/yr to 8.09 cm/yr in those receiving low dose GH and from 5.45 cm/yr to 9.72 cm/yr in those receiving higher dose GH, which declined after two years of treatment in both groups. The mean change in height SDS from baseline to 10 yr of treatment was 1.66 and 2.25 respectively in both groups. Median age of puberty was 11.4 y in boys and 9.9 y in girls. One girl reported treatment-related serious side effect (jaw malformation) in the second group.

However, generalizing GH therapy in SGA children in Indian settings is still a long way to go, where ensuring adequate nutrition is a more felt need than providing GH therapy.

Maternal versus infant vitamin D supplementation during lactation (*Pediatrics. 2015;136:625-34*)

Vitamin D supplementation is routinely advocated in healthy infants due to low vitamin D content of breast milk. This study aimed to ascertain the role of maternal vitamin D supplementation instead of infant's supplementation. Total 334 exclusively breastfeeding mother-infant pairs were randomized into three groups to receive either 400, 2400, or 6400 IU vitamin D daily for six months. Infants received 400 IU of vitamin D in first group and placebo in latter two groups. The mothers were sampled monthly and infants were sampled at baseline, 4 months and 7 months. The breastfeeding rates dropped to 44.3% at 4 months and 28.4% at 7 months. The maternal vitamin D levels significantly increased in 6400 IU than 400 IU group. However, infants in all three groups had similar vitamin D levels at 4 and 7 months. Thus, supplementing vitamin D to lactating women can be a better and equally effective strategy to prevent and treat both maternal and infant vitamin D deficiency, than supplementing infants alone.

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