Association between neck circumference and non-alcoholic fatty liver disease in children and adolescents with obesity(*J Pediatr Endocrinol Metab. 2019 Dec 16*)

Non-alcoholic fatty liver disease (NAFLD) is the commonest chronic hepatic disorder in children. This authors studied if there was an association between neck circumference and NAFLD, and to establish cut-off values based on gender and pubertal staging. Mexican children and adolescents (n=112) between the ages of 6-18 y were included and presence of NAFLD determined by hepatic ultrasound.The neck circumference was larger in NAFLD pediatric patients as compared to those without NAFLD (P = 0.001). Moreover, neck circumference was associated with NAFLD as an independent risk factor [OR (95%CI) =1.172 (1.008-1.362); P = 0.038). In male adolescents, Tanner 2-3 = 35cm and Tanner 4-5 = 38 cm were established as risk cut-off values to develop NAFLD.

The effect of overweight and obesity on liver biochemical markers in children and adolescents (*J Clin Endocrinol Metab. 2019 Dec 16*)

Age- and sex-specific percentile curves were calculated for liver biochemical markers in two cohorts of Danish children and adolescents (between 6-18 years of age, 1858 from a population based cohort and 2155 with overweight and obesity).Children with overweight and obesity had a higher level of alanine aminotransferase (ALT) in all age groups. Optimal ALT cut-points for diagnosis of hepatic steatosis (liver fat content >5%) was 24.5 U/L for girls (sensitivity: 55.6%, specificity: 84.0%) and 34.5 U/L for boys (sensitivity: 83.7%, specificity: 68.2%).

Thus obesity is associated with liver damage, underscoring the importance of its prevention in the pediatric age group.

A randomized clinical trial to evaluate sitagliptin in pediatric patients with type-2 diabetes (*Pediatr Diab.2019;20:48-56*)

A randomized, placebo-controlled, double-blind evaluation of sitagliptin in 35 patients 10-17 years old with T2DM at seven clinical research sites was conducted.It was found that single doses of 50, 100, and 200 mg sitagliptin inhibited 67.2%, 73.8%, and 81.2% of plasma DPP-4 (dipeptidyl-peptidase IV) activity over 24 hours, respectively. The least squares (LS) mean glucose concentrations two hours after an oral glucose tolerance test or a meal tolerance test decreased in patients treated with sitagliptin compared to placebo, while active LS mean glucagon-like peptide 1 concentrations increased significantly at all sitagliptin doses in both tests. Adverse effects of mild intensity were reported in eight study participants; only one had intravenous site pain of moderate intensity. It was thus concluded that a single dose of 200mg was well tolerated in all the study participants.

There is now a need for further phase III safety and efficacy studies in pediatric patients with type-2 diabetes using a single dose of 100 mg of sitagliptin.

Findings from the dsd-LIFE study on bone mineral density and fractures in congenital adrenal hyperplasia (*Clin Endocrinol (Oxf). 2019 Dec 30*).

Congenital adrenal hyperplasia (CAH) patients (n = 244) from dsd-LIFE cohort (women, 147; men, 97; salt-wasters, 148; simple virilizing, 71; non-classical-CAH, 25) were chosen.It was found that prednisolone-only treated patients had more detrimental effects on BMD than hydrocortisone (P<0.05).The androstenedione/testosterone ratio at the age of 16 years had a positive correlation with lumbar spine Z score in women (r^2=0.284, P = 0.024) and trochanter Z score in men (r^2 = 0.60, P = 0.025), thus showing that higher glucocorticoid doses have lower bone mineral density in adulthood.

Prevalence of TG and TPO mutations in Sudanese children with Congenital Hypothyroidism (*J Clin Endocrinol Metab. 2019 Dec 23*)

Congenital hypothyroidism (CH) is due to thyroid dyshormonogenesis in 10-15% of subjects worldwide and 60% of CH cases in the Sudan.With the aim of investigating the molecular basis of CH, clinical evaluation, thyroid function tests, genetic sequencing and analysis was performed on 26 Sudanese families with CH.Mutations were found in *DUOX1, DUOX2, IYD, SLC26A4, SLC26A7, SLC5A5, TG,* and *TPO* genes, and all occurred in domains important for protein structure and function, predicting the CH phenotype. *TG* mutations were significantly higher on average in the Sudanese compared to other populations.

Long term methimazole therapy in pediatric Grave's disease (*Pediatrics. 2019;143:e20183034*)

This randomized parallel-group controlled trial was performed on 66 children with Grave's disease in Tehran, an iodine replete area, to evaluate if long term methimazole therapy (>4 y) was associated with lower relapse rate than shorter therapy, thus abating the need for ablative therapy. Fifty six patients were randomized after daily methimazole intake of 0.25 to 0.5 mg/kg for 18-24 mo, to discontinue the drug or continue low dose methimazole for 96-120 mo, and reassessed after 48 mo of stopping the drug in each group. The study reported lower relapse rate in long term therapy group than shorter therapy group (P<0.001) with no side effects in the former group. Methimazole treatment duration was the only significant factor on multivariate analysis to affect the outcome.

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