Pattern and Predictors of thyroid dysfunction in Children at a Tertiary Care Hospital in Northern India

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Background.The profile of thyroid disorders encountered in pediatric and adolescent age groups has shown dramatic change post optimisation of iodine status. Frequent thyroid function testing for nonspecific symptoms has led to increase in prevalence of milder entity of thyroid dysfunction that do not warrant therapy.**Objective**To evaluate pattern of abnormal thyroid function among children referred to tertiary care centre and to ascertain historical, clinical, and laboratory characteristics that influence treatment decisions in these children. **Methods**A prospective, hospital based, observational study was conducted at a tertiary care hospital in Northen India. All assenting children aged 18 years or less, referred to clinic for suspected thyroid disorder were recruited for this study. Demographic data, clinical features of the recruited children were noted along with family history and iodine status. Thyroid profile, consisting of TT3, TT4,TSH,antiTPO and antiTG antibodies were tested in all . Investigations were also carried out to look for the cause and complications of various thyroid disorders. These children were also followed up for 1 year with appropriate therapy to look for response of therapy and complications to the same.**Results** 241 children were included in the study with an overall goitre prevalence of 36.5%. 73% of subjects were hypothyroid (54.5% subclinical hypothyroidism (SCH)), 18.7%congenital hypothyroid,5% had hyperthyroidism and 3.3% were euthyroid. Overt hypothyroid had significantly higher prevalence of anti-TPO and antiTGantibody than SCH group. All subjects in the overt hypothyroid group and 76% subjects in SCH group were treated with L-thyroxine with mean dose requirement of 2.31±1.12ug/kg/day vs 1.76±1.07ug/kg/day(p=0.002) in either group. A major independent predictor of treatment in SCH was initial TSH which was significantly higher in the treated group (11.65+3.80 uIU/ml vs 9.24+1.31 uIU/ml; p<0.001). Congenital hypothyroid presented at a mean age of 6 months (18 days to 2 years) with most common aetiology being thyroid hypoplasia and dyshormonogenesis. Overall 85.5% of all refereed subjects were treated and in follow up after one-year management was found to be adequate in 81% subjects.**Conclusions**Primary hypothyroidism constituted the most common aetiology of thyroid disorders with 55% having subclinical hypothyroidism. Such children generally need a close follow up as treating these children strain out stretched health resources. Delayed presentation of congenital hypothyroidism in our study warrants active

surveillance of children at birth to avoid long term adverse effects on mental development.

Key words: Goitre, thyroid disorders, subclinical hypothyroidism