STUDY OF CLINICAL PROFILE OF PATIENTS PRESENTING WITH SEXUAL PRECOCITY TO A TERTIARY CARE HOSPITAL

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ABSTRACT

BACKGROUND
Precocious puberty is a common paediatric endocrine disorder seen in clinical practice.

OBJECTIVE
To study the various aetiologies and clinical presentations of patients presenting with sexual precocity to a tertiary care hospital.

DESIGN
Cross sectional study.

MATERIAL AND METHODS
We collected and analysed the clinical data including hormonal status of 24 consecutive patients who presented to our department from January 2014 to December 2015 for evaluation of sexual precocity.

RESULTS
Most of the patients presenting to us had evidence of precocious puberty (n=16), followed by premature adrenarche (n=5) and premature thelarche (n=3) respectively. The females outnumbered males in our study (68.75% of total cases). Females presenting with central precocious puberty had no appreciable cause (idiopathic) in majority (85.72%) of cases. While, males presenting with central precocious puberty had an organic cause (60%) in majority of cases.

CONCLUSIONS
Precocious puberty is more common among females as compared to males. Organic lesion must be ruled out in all patients presenting with central precocious puberty especially in males.

KEYWORDS
Central Precocious Puberty, Congenital Adrenal Hyperplasia, Hypothalamic Hamartoma.

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INTRODUCTION: Puberty is a critical stage of development in an individual's life. The regulation of puberty is under a complex and coordinated control of various hormonal & neuroendocrine factors. Slightest alteration in any of the critical factors can lead to shifting of pubertal timing. It can result in either early onset or delayed onset puberty. Precocious puberty (PP) is defined as appearance of secondary sexual characters below 8 years in girls and below 9 years in boys.[1-4] Precocious puberty can be due to central or peripheral causes. Central causes can be caused due to an identifiable underlying cause (organic) or idiopathic variety.

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Certain normal variants of puberty may mimic the above conditions. These includes premature thelarche (PT) which is isolated breast development, premature adrenarche (PA) which is premature pubic hair development and premature menarche (PM) which is isolated vaginal bleeding.[5] Apart from psychosocial stress to both patients and parents due to an early puberty, they also have significant decrease in final adult height due to rapid advancement of bone age and premature epiphyseal fusion.[6,7] We have undertaken this study to examine the aetiology and clinical features of patients presenting with sexual precocity.

MATERIAL AND METHODS: All consecutive patients presenting with sexual precocity to Endocrinology OPD of SCB Medical College, Cuttack from January 2014 to December 2015 were enrolled in the study. A detailed history regarding age of onset, chronology of appearance of symptoms, birth history, use of medications and infections were noted.

A detailed family history regarding similar disease or consanguinity was taken. A thorough clinical evaluation was also done and pubertal changes were noted as per method described by Tanner and Marshall.[8,9] Testicular volume was assessed by Prader's orchidometer. For assessment of bone age, use of Greulich and Pyle's bone atlas was done [10]. Routine haematological and biochemical investigations were done. All necessary hormone analysis including stimulation tests were done as per standard workup protocol used for evaluation of such patients. Written and informed consent was taken from each subject. Institutional ethical committee clearance was taken. The data was analysed using standard statistical methods. The graphs and tables were generated using Microsoft Excel 2007 software.

RESULTS: A total of 24 patients visited Endocrinology OPD for evaluation of sexual precocity during the entire study period. Among them, 16 patients (66.66%) had precocious puberty (PP), 5 patients (20.88%) had premature adrenarche (PA) and 3 patients (12.5%) had premature thelarche (PT) (Figure 1). Among all cases of PP only 5 were males (31.25%) and rest were females (68.75%) (Figure 2). The mean age of presentation among females 4.7±2.25 years and among males was 4.62±2.53 years who presented for evaluation of sexual precocity. The majority of females presenting with central PP were due to idiopathic causes (85.72%) whereas males had an organic lesion in majority of cases (60%) (Figure 3). Two boys among a total of five patients presenting with central PP had hypothalamic hamartoma while only one girl among all cases of central PP had hypothalamic hamartoma. Hypothyroidism and congenital adrenal hyperplasia (CAH) accounted for 4.16% and 12.5% of cases respectively.

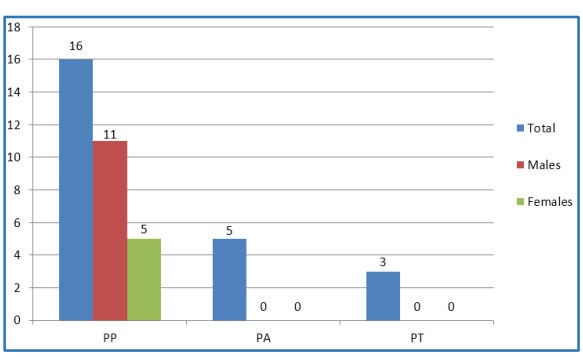

Fig. 1: Major Sub Types of Cases among Children Presenting With Sexual Precocity

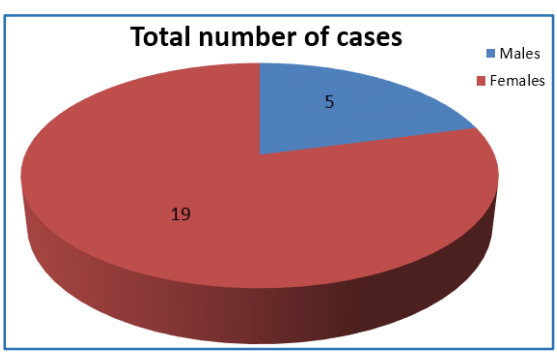

Fig. 2: Sex Distribution among Cases Presenting with Sexual Precocity

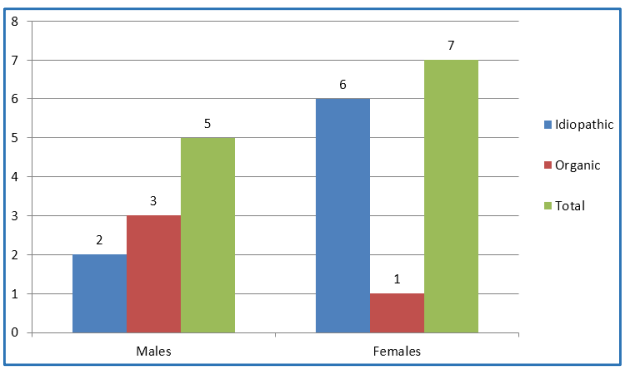

Fig. 3: Major Causes of Central Precocious Puberty among Males and Females

DISCUSSION: Majority of patients were females (79.17%) in our study. This is similar to study done by Bajpai et al[11] Desai et al[12] and Rohani et al[13] who reported the same figures at 81%, 72.5% and 86.4% respectively. This is in agreement with most other studies that show girls present with signs of sexual precocity more commonly than boys. The mean age of presentation was 4.7±2.25 years for girls and 4.62±2.53 years for boys in our study. Desai et al[12] also reported their mean age of presentation at 4.5±2.67 years for girls and 5.79±3.93 years for boys which is in agreement to our finding. Whereas, Rohani et al[13] reported the mean age for girls and boys in their study to be at 7.43±1.4 years and 5.8±2.1 years respectively.

Central PP was seen in among 29.16% girls and 20.83% boys. Rohani et al[13] reported 47.7 % of girls and 37.5% of boys who had central PP among their entire cohort. Bajpai et al[11] reported that 47 girls among total of 114 in their study group had central PP (33.57%). Desai et al[12] reported that 50% of girls in their cohort had central PP. The ratio of idiopathic central PP to neurogenic central PP was 2:3 among males and 6:1 among females in our cohort. Bajpai et al[11] reported the same figure at 1:0.8 among males & 8:3 among females. Rohani et al[13] reported ratio of idiopathic central PP to neurogenic central PP for males and females at 1:2 & 20:1 respectively. The causes of peripheral PP in our study were hypothyroidism (4.16%) and CAH (12.5%) among all causes. Bajpai et al[11] reported hypothyroidism to be the cause of PP among 3.5% of cases.

Percentage of patients presenting with PT and PA in our study were 12.5% and 20.83% respectively. Bajpai et al[11] reported 20.24% of patients had PT and 5.24% had PA respectively. On the other hand, Rohani et al[13] reported 27.2% patients had PT and 13.62% of patients had PA in their study. It is very important to identify normal variants of puberty from PP. PT and PA are normal physiological variants of puberty and do not require treatment. Only close monitoring and reassurance is needed for majority of such patients.

CONCLUSION: Precocious puberty is predominantly seen among girls in our population. Majority of girls present with central PP have no identifiable cause whereas males have an increased chance of having organic lesion. Identifying precocious puberty early is essential from therapeutic point of view.

Early diagnosis can lead to successful halting of progressive and premature sexual development and preserving final adult height.

ABBREVIATION:

PP-Precocious puberty.
PT-Premature Thelarche.
PA- Premature Adrenarche.
PM- Premature Menarche.
CAH- Congenital Adrenal Hyperplasia.

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