

DELAYED PUBERTY: HOW TO APPROACH?

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Disorders of puberty can profoundly impact physical and psychosocial well-being. Delayed puberty is the absence of breast development in girls by 13 years of age and absence of testicular growth to at least 4 mL in volume or 2.5 cm in length in boys by 14 years of age. Hypogonadism occurs when there is a disruption in the hypothalamic-pituitary-gonadal axis. Two categories of delayed puberty are: hypergonadotropic (primary) hypogonadism and hypogonadotropic (secondary) hypogonadism. The etiology of delayed puberty varies from relatively benign to life threatening conditions, which may be either congenital or acquired. Constitutional delay of growth and puberty is the commonest cause of delayed puberty, which is a diagnosis of exclusion. There is a notable delay in puberty but eventually progress through normal stages of puberty. History concerns about stature are often present and a familial pattern of inheritance is usually present. Delayed bone age but corresponding to height age helps in diagnosis. Reversible hypogonadotropic hypogonadism may be observed due to associated conditions including chronic malnutrition, systemic disease, untreated hypothyroidism, hyperprolactinemia, anorexia nervosa. Permanent causes include structural damage either to hypothalamic-pituitary axis or linked to the sexual organs of the individual. Complete physical examination should include proper anthropometry, pubertal staging and assessment to look for any signs of chronic illness or stigmata of syndromes. In laboratory analysis, hypogonadotrophic hypogonadism (pHH) showing low serum testosterone or estradiol and blunted follicle-stimulating hormones (FSH) and luteinizing hormones (LH) levels may be due to abnormalities in the central nervous system. Magnetic resonance imaging is necessary to exclude morphological abnormalities and neoplasia. Low serum testosterone in male patients and low estradiol values in female patients, associated with high serum FSH and LH levels, suggest a diagnosis of hypergonadotropic hypogonadism due to dysfunction of peripheral sex organs. Abnormal growth velocity necessitates assessment of serum thyroid function, prolactin, and insulin like growth factor-1. Karyotyping can reveal a chromosomal abnormality like Turner syndrome or Klinefelter syndrome. Beside reassurance, in cases where the adolescent with CDGP is experiencing psychological difficulties, short courses of sex hormones may be used to allow individuals to catch up with their peers. Definitive treatment for underlying cause is worthy where possible. Long-term hormone replacement therapy is recommended for permanent causes of delayed puberty.

Keywords: Delayed puberty, hypogonadism hypogonadotrophic hypogonadism,

Date of received: 26.04.2023

Date of acceptance: 05.05.2023

DOI: <https://doi.org/10.3329/bjm.v34i20.66137>

Citation: Biswas R. Delayed puberty: How to approach? *Bangladesh J Medicine* 2023; Vol. 34, No. 2(1) Suppl. 192.