

Commentary

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## Evaluation and Treatment of Growth Failure in Children with CKD- Letter to the editor

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Almost one third of postnatal growth is achieved by the end of the first two years of life [1]. Chronic Kidney Disease (CKD) prevents normal growth in children [2]. Growth impairment may occur in all stages of renal disease from the initial phase to renal failure [1].

Growth retardation in these children occurs due to several factors including: malnutrition, metabolic acidosis, renal osteodystrophy, and abnormalities of the growth hormone (GH) - insulin-like-growth factor (IGF) hormonal axis [3-4].

Treatment approaches vary in children with CKD. This is related to various metabolic, nutritional, and hormonal factors involving CKD. Imbalance in growth hormone (GH) and insulin-like growth factor-1 axis are significant factors in growth retardation of children with CKD [3].

Despite adequate nutrition and proper metabolic control, a number of children with CKD have growth retardation. In such cases rGH therapy is a suitable approach [1].

However, a large number of children who are eligible for rGH therapy do not receive it. This occurs despite the fact that the US Consensus Statement on Assessment and Treatment of Short Statue in Pediatric Patients with CKD emphasizes

rGH therapy in children with CKD when all other potential causes of growth failure have been evaluated and corrected [1].

Normal final adult height is feasible only if rGH therapy is started at a young age.

The recommended daily subcutaneous dose of rGH therapy in children with CKD is 0.05 mg/kg/d (0.35 mg/kg/wk or 28 IU/m<sup>2</sup>/wk) [1].

This is only possible with a 3 to 4 months monitoring to prevent adverse effects.

Apart from that, other responses to the treatment such as: height, weight, head circumference (for a maximum of 3 years), pubertal maturation, nutritional status, and laboratory evaluation including serum chemistries and parathyroid hormone should be closely monitored as well.

Additionally, assessment of intra cranial pressure using fundoscopic examination and annual monitoring of the bone age is among necessary follow ups of the treatment [4-5].

Therapy with rGH should be terminated if one of the following conditions occur: renal transplantation, achieving height goal according to midparental height or 50th percentile for age, or closure of epiphyses [1-2].

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