

Growth hormone reverses growth problems in children with kidney failure

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Growth hormone therapy can help reverse growth problems in children with kidney failure, according to a study appearing in an upcoming issue of the *Clinical Journal of the American Society of Nephrology (CJASN)*. However, treatment increases bone turnover and interrupts the relationship between bone turnover and a blood marker of bone health, making it difficult for doctors to assess patients' bone health by blood tests alone.

Chronic kidney disease can have severe effects on growth in children, leading to short stature and problems with both physical and psychological health. Abnormally high or abnormally low bone turnover can increase the severity of growth retardation in children with kidney disease, so finding a normal balance is important. Recombinant human growth hormone can often help, but response is variable in children on dialysis.

To evaluate the direct effect of recombinant human growth hormone therapy on the skeleton in pediatric patients, Justine Bacchetta MD, PhD, Katherine Wesseling-Perry MD (David Geffen School of Medicine at UCLA) and their colleagues randomized 33 pediatric dialysis patients to therapy with or without growth hormone.

Among the major findings:

- Growth hormone therapy resulted in greater increases in height.

- Growth hormone enhanced bone turnover in patients with baseline low bone turnover, but it counteracted the bone-turnover lowering effects of vitamin D therapy in patients with high bone turnover.
- Parathyroid hormone values were similar in patients who received growth hormone compared with those who did not, despite marked differences in final rates of bone formation.

"Pediatric patients treated with growth hormone had better improvements in height than those on standard therapy. The therapy enhanced bone turnover in patients with baseline low bone turnover while not altering bone formation in patients with high bone turnover," said Dr. Wesseling-Perry. "Unfortunately, growth hormone interrupts the relationship between bone turnover and parathyroid hormone—a marker that is used to judge bone health in these patients—making it difficult to assess bone health by blood tests alone," she added.

The findings suggest that growth hormone may help treat poor growth and low bone turnover in children on dialysis. It may also improve growth in the children with high bone turnover, but it may not benefit their overall bone health.

More information: The article, entitled "The Skeletal Consequences of Growth Hormone Therapy in Dialyzed Children: A Randomized Trial," will appear online on April 4, 2013, [doi: 10.2215/CJN.00330112](https://doi.org/10.2215/CJN.00330112)

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