

Serum Concentrations of IGF-I, IGF-II, and Unsaturated Somatomedin Carrier Proteins in Children With Chronic Renal Failure

Growth failure in children with renal disease has multiple causes, including renal rickets, metabolic acidosis, chronic infection, and malnutrition. However, in some instances, chronic growth failure cannot be attributed to any of these causes. Because insulin-like growth factor (IGF)-I levels are often low in children with growth failure and renal disease, Powell et al examined the possible role of IGF-I, IGF-II, and their binding proteins.

Serum samples from 16 patients with glomerular filtration rates <50% of normal, who were on chronic peritoneal dialysis but did not have acidosis, rickets, or chronic infection, were compared with serum samples from normals. Acid chromatography permitted measurement of the actual amounts of IGF-I, IGF-II, and somatomedin carrier proteins (SmCP). The results revealed no diminution of the IGF levels, and an increase in SmCP.

On the basis of these data, di-

	Patients	Normals	P<0.05
IGF-I (ng/mL)	220 ± 182	248 ± 155	Not significant
IGF-II (ng/mL)	661 ± 213	433 ± 139	Not significant
SmCP (% IGF-I bound)	17% ± 3%	12% ± 3%	Significant

minished absolute values of IGF-I or IGF-II in serum cannot be the cause of the observed growth retardation. The authors suggest that the possible role of increased SmCP needs investigation.

Powell DR, Rosenfeld RG, Sperry JB, et al. *Am J Kidney Dis* 1987; 10:287-292.

Editor's comment—These findings both clarify and confuse the issue of the etiologies of growth retardation in chronic renal dis-

ease. Low serum IGF-I and IGF-II values in patients with chronic uremia, as tested by bioassay, radioimmunoassay, and radio-receptor assay, were repeated. Powell et al have demonstrated that there are inhibitors of the assay systems that can be removed by acid chromatography. The confusion arises because the cause of growth retardation remains obscure in many children with chronic renal disease who are not acidotic.

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Editor's Note

In the special report on the International Growth Hormone Symposium (Volume 3, Number 4), the second paragraph read as follows: "Drs. Gloria Tannenbaum and Joseph Martin demonstrated very convincingly that GH-releasing hormone (GHRH) is secreted in the posterior part of the hypothalamus (tubero-infundibular region) and that growth hormone-releasing factor (GRF) is secreted in the ventromedial and arcuate nuclei." While the statement is technically correct, the use of both GHRH and GRF in the same sentence may be misleading, since the terms are synonymous. The editor extends his apologies for any confusion this may have caused.