

**CALCIUM-PHOSPHATE METABOLISM AND GROWTH IN CHILDREN WITH
CHRONIC RENAL FAILURE (CRF)**

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Renal osteodystrophy (ROD) could be devastating in children with CRF because it occurs during skeletal growth.

Aim of the study: to evaluate the bone remodelling in patients (pts) with moderate-severe CRF in relation with growth, calcium-phosphate metabolism, bone age (BA), bone mineral density (BMD). We considered 19 children (11 M, 8 F), mean age 8.4±6 yrs. All pts but one had CCr between 30 and 60 ml/min/1.73 m² bsa (1 pt CCr < 30).

Height pts had BMD < -2 SD (Z-score for age and sex); only 2 pts of this group had PTH value > 55 pg/ml. CCr ranged from 48 to 65 ml/min/1.73 m²bsa; Calcium was 10.4±0.6, Phosphate 4.8±1.2; Calcium-Phosphate product 50.2±14. The differences in the mean values of biochemical parameters between the group with low and the other with normal BMD was not significant. BMD did not correlate with any of tested parameters. All pts showed normal radiological bone structure. Only 2 pts had a delayed BA compared to CA with HV-SDS < -2SD: 2: 1 pt with normal, the other with low BMD. No statistically difference was found between HV and CCr.

For long time the diagnosis of ROD has been based on PTH concentration, but it is now obvious that a single test, even with x-ray images and densitometry, does not provide sufficient information. Given the lack of congruity in the results from the biochemical parameters and the different type of ROD, it is thus necessary to perform all available tests for a comprehensive evaluation of bone remodelling.

