

CHRONIC KIDNEY DISEASE–MINERAL AND BONE DISORDER

Fracture burden in children with CKD

Chronic kidney disease (CKD) is associated with disturbed bone and mineral metabolism; however, the effect of these disturbances on fracture risk in affected children is uncertain. New findings from a large cohort study show that fracture rates in children with CKD are 2–3-fold higher than population-based rates. Denburg *et al.* say that future studies need to determine how to optimize the management of mineral and bone disorder in children with CKD.

Adults with end-stage renal disease are known to have an increased risk of fracture; however, studies in children are limited. To address this paucity of data, Denburg and colleagues evaluated fracture burden in 537 children aged 1–16 years enrolled in the prospective Chronic Kidney Disease in Children study to determine the gender-specific incidence of fracture and to identify risk factors for fracture in this population.

At enrolment, 16% of participants had a history of prior fracture. Over a median follow-up of 3.9 years, 43 males and

24 females reported an incident fracture, corresponding to rates of 395 (95% CI 293–533) and 323 (95% CI 216–481) per 10,000 person-years, respectively. The highest fracture rate was observed in males ≥ 15 years of age, with a rate of 570 fractures per 10,000 person-years.

The researchers identified advanced pubertal stage, greater height Z-score, difficulty walking, higher parathyroid hormone level and participation in more than one team sport as factors associated with greater fracture risk. By contrast, phosphate binder use was protective. “At a time of growing concerns about limiting calcium-based binder use ... these data provide a cautionary note regarding age-appropriate calcium requirements for optimal bone health in children,” say the researchers.

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Original article Denburg, M. R. *et al.* Fracture burden and risk factors in childhood CKD: results from the CKiD cohort study. *J. Am. Soc. Nephrol.* doi:10.1681/ASN.2015020152