Vitamin D deficiency and osteoporosis in hemophilic children: an intermingled comorbidity

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The aim of this study is to investigate bone state and factors affecting it in children with hemophilia. This is a case– control study that included 37 children with hemophilia and 37 healthy controls. The patients were selected from the outpatient pediatric hematology clinic of Fayoum University Hospital, Egypt. Bone mineral density, serum vitamin D, parathormone, calcium, phosphorus, and calcium creatinine ratio levels were evaluated. Vitamin D level and bone mineral density were significantly lower in hemophiliacs than in control group ($P<0.0001$). About 43.2% of cases had moderate vitamin D deficiency, whereas 35.1% had mild deficiency. Vitamin D positively correlated with bone mineral density Z-score, whereas it negatively correlated with total joint score. Positive correlation between bone mineral density and age was also found. Serum levels of urea, urinary calcium creatinine ratio, and parathormone were found to be higher in cases than in control. Also, serum calcium level was found to be lower in patients than in controls. We concluded that vitamin D deficiency is an essential cause of decreased bone mineral density in hemophilic children. Hemophilic arthropathy with consecutive immobilization plays an important role in vitamin D deficiency and decreased bone mineral density