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Bone Mineral Density in Egyptian Children with Familial Mediterranean Fever

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Abstract : Background: Familial Mediterranean fever (FMF) has episodic or subclinical inflammation that may lead to a decrease in bone mineral density (BMD). Objective: To assess BMD in Egyptian children with FMF on genetic basis. Subjects and Methods: A cross sectional study included 45 FMF patients and 25 control children of both sexes, with age range between 3-16 years old. The patients were reclassified into 2 groups: Group I (A) 23 cases used colchicines for 1 month or less, and Group I (B) 22 cases used colchicines for more than 6 months. For both patients and control, MEFV mutations were defined using molecular genetics technique and BMD was measured by DXA at 2 sites: proximal femur and the lumber spines. Results: four frequent gene mutations were found in the patient group: E148Q (35.6%), V726A (33.3%), M680I (28.9.0%) and M694V (2.2%). There were also 4 heterozygous gene mutations in 40% of control children. Patients received colchicines treatment for less than 1 month had highly significant lower values of BMD at femur and lumber spines than control children ($p<0.05$). Patients received colchicines treatment for more than 6 months had improved values of BMD at femur compared to control, but there were still significant differences between them at lumbar spine ($p>0.05$). There are insignificant effect of type of gene mutation on BMD and the risk of osteopenia among the patients. Conclusion: FMF had significant effect on BMD. However, regular use of colchicines treatment improves this effect mainly at femur.

Keywords : familial mediterranean fever, bone mineral density, genes, children
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