

# **Effect of Quercetin Supplement on Some Bone Mineralization Biomarkers in Diabetic Type 2 Patients**

## **Abstract**

**Background:** Diabetes associated with multiple metabolic problems in the body, including bone mineralization remodeling, osteoporosis and increase risk of fracture. Quercetin is natural flavonoids and according to animal studies; it has Potent antioxidant, antidiabetic and protective effect against bone loss due to various causes.

**Objectives:** explore effect of quercetin as nutritional supplement administered Orally on some bone mineralization bio-markers such as calcium, vitamin D and Osteocalcin in Iraqi diabetic patients.

**Methods:** interventional double-blind placebo randomized controlled study in which 40 patients with type 2 diabetes mellitus (age range 40-45) assigned randomly (using simple randomization) in either control (n=20) or study (n=20) group. Study group received Quercetin oral supplement as 500mg capsule once daily for three months. Venous blood was used for measuring Serum calcium, 25(OH) vitamin D and osteocalcin at base line and after 3 months.

**Results:** After 3 months treatment with Quercetin; levels of Osteocalcin ( $28.1 \pm 7.6$ ), serum calcium ( $9.2 \pm 1.8$ ) and 25(OH) vitamin D ( $26.6 \pm 8.7$ ) were significantly ( $p < 0.05$ ) Higher than pretreatment values of osteocalcin ( $24.0 \pm 8.6$ ); serum calcium ( $7.0 \pm 2.2$ ) and 25(OH) vitamin D ( $20.6 \pm 7.7$ ) and control values of serum calcium ( $6.8 \pm 2.0$ ) and 25(OH) vitamin D ( $20.8 \pm 7.4$ ), but not Osteocalcin ( $25.2 \pm 9.0$ ). There Was also significant correlation between use of quercetin; elevation of serum calcium And osteocalcin ( $r = 0.454$ ;  $p = 0.032$ ), indicating modulation in bone mineralization. Conclusions: Quercetin's use in diabetic patients may elevate Serum level of Calcium; 25(OH) vitamin D and may modulate bone mineralization represented by elevation of osteocalcin