

Study the Effects of Taurine Oral Supplement used for Type 2 Diabetic Patients on Body Weight; Glycemic Control and Some Bone Mineralization Biochemical Markers

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Abstract

Background: Taurine is sulfur containing semi-essential amino acid that has important roles in many biological processes, but; its effects on glucose homeostasis, weight; growth and bone mineralization were not well defined in human.

Objectives: evaluation the effects of oral taurine used for 3 months on bone mineralization biomarker; glycemic control and body weight in type II diabetic patients.

Methods: interventional double-blind placebo-controlled study in which 80 patients with type2 diabetes mellitus (age range 45–55) assigned in either control (n = 40) or study (n = 40) group. The last group received 1000 mg capsule of taurine once a -d for three months. Parameters measured were serum calcium, 25(OH) vitamin D and osteocalcin, NTX-1; HbA1C% and Fasting blood glucose before and after 3 months.

Results: Taurine led to significant (p < 0.05) rise in osteocalcin and significant lowering in Body weight and BMI and there were no significant changes in Serum Calcium; NTX-1; Vitamin D; HbA1C% and fasting blood glucose; all as compared with control values.

Conclusion: 3 months of oral Taurine used in type II diabetic patients may modulate bone mineralization represented by elevation of osteocalcin; and reduction of body weight, but has no significant effect on glycemic control and did not reduce HbA1C%

Keywords: Taurine, Diabetic patients, Osteocalcin, Body weight, Glycemic control

1. Introduction

Diabetes Mellitus is a pandemic metabolic health disturbance featuring chronic hyperglycemia and induce many pathological complications among both sexes in wide range of ages, these complications include microvascular complications like nephropathy, retinopathy, neuropathy and macrovascular complications like acute coronary syndrome and stroke [1,2].

In recent years several studies approved that patients with type 2 diabetes mellitus are prone to osteoporosis and they are at greater risk of developing bone fragility [3]. The main mechanism of osteoporosis is an imbalance between the activity of osteoblasts that form bone and osteoclasts that breakdown bone leading to bone microstructure deterioration and fractures. [4], other mechanisms by which diabetes affect bone include hyperglycemia, oxidative stress and accumulation of advanced glycation end products (AGEs) [5].

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