The effect of a high weekly dose of cholecalciferol and calcium supplement on weight loss regimen among obese female subjects

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Background: Recently, obesity is diagnosed as a major health issue worldwide and in Jordan due to the fact that 50% of the population in Jordan is diagnosed as obese or overweight. In addition, studies have shown a close relationship between obesity and vitamin D deficiency.

Objectives: Our study was designed to examine the impact of a high monthly dose (50,000 IU) of vitamin D3 and calcium supplementation (1200 mg/dl) on the visceral adiposity reduction while improving serum vitamin D status in vitamin D deficient patients visiting the dietitian for weight loss. Also, to evaluate the potential effect of vitamin D supplementation on serum lipid profiles, fasting glucose levels, PTH, TSH, insulin sensitivity and HbA1c.

Methods: A total of 45 morbidly obese subjects (BMI (kg/m2)≥30) and vitamin D deficient were randomly assigned to 4 groups, CON group who only received a weight loss diet (n=10). Diet/D group (n=13) received 50,000 IU/week of cholecalciferol in addition to the weight loss regimen, Diet/Ca group (n=10) received 1200 mg/dl calcium in addition to the weight loss regimen. Diet/D/Ca group received 50,000 IU/week of cholecalciferol and 1200 mg/dl/d calcium (n=12). Serum 25 (OH) D, calcium, PTH, TSH, insulin, fasting glucose, triglycerides, cholesterol and HbA1c were measured at baseline and 3 months after supplementation.

Results: Three months after supplementation and following a diet, waist circumference was significantly reduced in Diet/D and Diet/D/Ca groups, the most weight reduction % and BMI reduction was observed in Diet/D and Diet/D/Ca as well (p≤0.05). Fasting glucose was reduced in all groups (p≤0.05) which is most likely due to weight loss rather than supplementations. Diet/D and Diet/D/Ca groups had a significant reduction in PTH levels after 3 months of supplementations when compared with treatment groups (p≤0.05). Finally, Diet/D and Diet/D/Ca groups had a significant reduction of triglycerides and cholesterol levels (p≤0.05). Neither insulin nor TSH had been affected by supplementation.

Conclusion: The findings of this study showed that correcting vitamin D deficiency is a very effective approach that should be followed in weight loss regimen when accompanied with a low-caloric diet. Vitamin D also improved lipid profile and PTH as well.

Biography

Hadil S Subih is an Assistant Professor in Clinical Nutrition, Jordan University of Science and Technology. She is also a Clinical Nutrition Counselor at the King Abdullah University Hospital (KAUH)/Jordan. She got her PhD from Texas Tech University (2014). She finished her MA from the New Mexico State University. Her research interest is the study of Obesity, Diabetes and Health Biomarkers.

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