Association Between Muscle Function and Body Composition, Vitamin D Status, And Blood Glucose in Geriatric Women with Type 2 Diabetes

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Abstract

In elderly patients, type 2 diabetes (T2D) is associated with accelerated loss of skeletal muscle mass and strength and predisposed to more severe physical disability. Also, vitamin D levels decrease significantly, particularly in post-menopausal women with concurrent increases in body fat percentage.

Aim

Illustrate the association between muscle function body composition, vitamin D [25-OH D] level in the serum, and blood glucose in elderly women with T2D.

55 post-menopausal women + 65 years with diagnosis of T2D and metabolic syndrome participated in this cross-sectional study. Patients were subjected to Full Geriatric Assessment, Anthropometry and

Body Composition:

Body height and weight, waist and hip circumferences, body mass index, muscle mass, and visceral fat mass and Physical performance.

Tests:

Handgrip strength, The Timed up and Go, The arm curl test, The 30-s Chair Stand test.

Laboratory assessment of vitamin D (25-OH D) level in the serum and Total Lipid Profile (LDL, HDL, Cholesterol and Triglycerides). Patients according to 25-OH D level were classified to two groups: **Group A**: Patients with deficient levels (25-OH D < 50nmol/l) were 42 (84%). **Group B**: patients with non-deficient levels (25-OH D >50nmol/l) were 8 (16%)

The main finding of our study was positive association between 25-OH D levels and arm curl test findings.

VIT D ng/ml	r	p value
Ms mass %	0.111	0.444
Fat mass%	-0.075	0.606
Vs mass%	0.061	0.674
Hand grip (kgs)	0.236	0.099
Arm curl test (no./sec)	-.333*	0.018
Up and go test (sec)	-0.056	0.7
30-sec chair (sec)	-0.025	0.861

Conclusion

Vitamin D deficiency is highly prevalent in postmenopausal females and a positive correlation between vitamin D deficiency and arm curl test.