



Effects of vitamin D therapy on Glucose metabolism in patients with prediabetes

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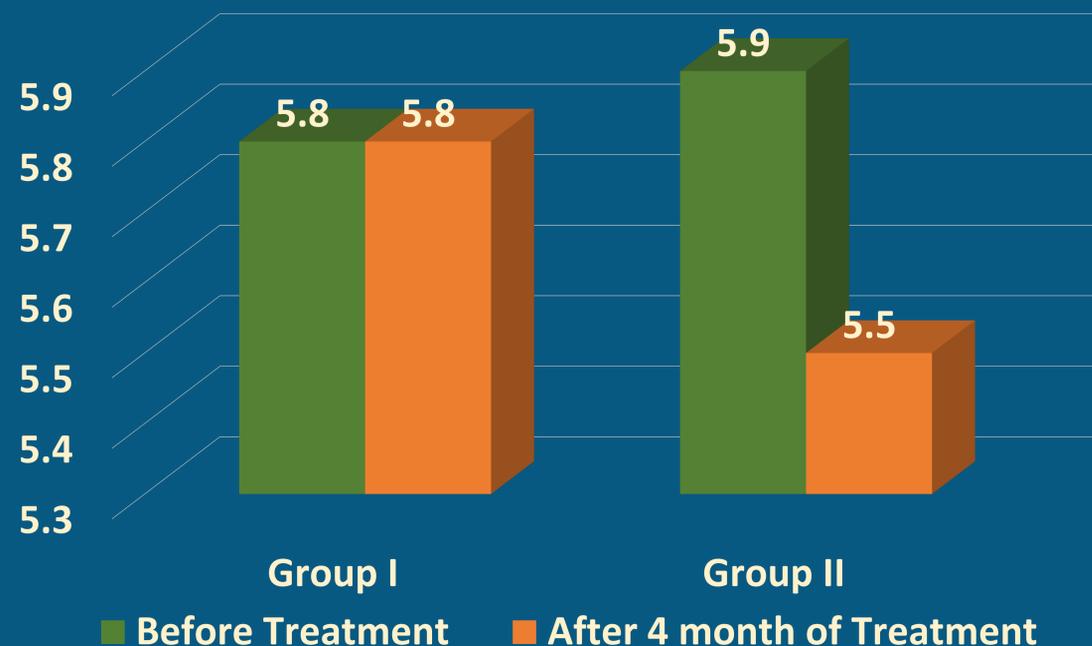
Aim

To assess the effect of cholecalciferol therapy at various doses on glucose metabolism in patients with prediabetes.

Results

After 4 months Reduction in HbA1c ($p=0.001$) and plasma glucose at points 60' ($p=0.04$) and 120' ($p=0.04$), increase in insulin level at point 120' ($p=0.03$) and gain in HOMA-B index (25.3%) at the end of the study were observed only in patients taken 5000 IU of cholecalciferol daily. After 4 months of therapy in 13 women (50%) from group 2 glucose and HbA1c levels corresponded to normal values while only 2 patients from group 1 had these parameters within normal ranges ($p=0.001$).

HbA1c Data Before and After Treatment in Both Groups



Materials and methods

The study included 65 women aged 42 to 64 years with prediabetes not taking vitamin D and without diseases affecting its metabolism. Patients were randomized into two groups: group 1 ($n=30$) received cholecalciferol 500 IU/day, group 2 ($n=25$) – 5000 IU/day for 4 months. Anthropometric data, comorbidities, and concomitant medications were assessed. Before and after 4 months of cholecalciferol therapy all patients underwent a standard oral glucose tolerance test with venous blood sampling at points 0' and 120'. The indices of insulin resistance (HOMA-IR), insulin sensitivity (ISI-0,120), functional activity of b-cells (HOMA-B) and Glycated hemoglobin (HbA1c) were calculated.

Conclusions

Treatment with 5000 IU of cholecalciferol per day for 4 months is associated with increase in glucose metabolism improvement in women with prediabetes.

General characteristics of trial-involved patients

Index	I Group (n=30)	II group (25)
BMI (Kg/M ²)	31,4±4,5	32,1±5,5
Waist circumference, cm	96,8±6,7	97,5±7,3
25(OH)D ng/ml	21,4±5,4	18,4±4,8
Hypertonic disease, n%	16	21
Dyslipidemia, n%	11	13
Ischemic heart disease, n (%)	7	6

HOMA-B Data Before and After Treatment in Both Groups

