

MEAN PLATELET VOLUME IN A PATIENT WITH HYPOPARATHYROIDISM: THE RELATIONSHIP BETWEEN METABOLIC SYNDROME, IMPAIRED FASTING GLUCOSE AND CARDIOVASCULAR RISK

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AIM:

Parathyroid hormone (PTH) is a key regulator of mineral metabolism, the homeostasis of calcium, phosphate, vitamin D and bone turnover. Hypoparathyroidism is a rare disease characterized by hypocalcemia with inappropriately low plasma levels of PTH. Mean platelet volume (MPV) is the measure of platelet size. Increased MPV has been associated with cardiovascular risk.

In our preliminary study, we aim to show that untreated hypoparathyroid patients compared with hyperparathyroid patients and control group have also increased risk of cardiovascular diseases and metabolic syndrome due to increased MPV.

MATERIALS AND METHOD:

Sixty seven hypoparathyroid (45 postsurgical hypoparathyroid and 22 idiopathic hypoparathyroid), 37 hyperparathyroid patients and 32 control were included this study. All the patients have been followed by hypoparathyroidism at least one year. All of them were receiving calcium and vitamin D analog supplements. Patients were not given any drugs affecting platelet function at least 2 weeks (eg. Acetyl salicylate, antiepileptics, heparin, antithyroid drugs etc.) chronic illness, smoking and having alcohol was also exclusion criteria. In order to eliminate the conditions that can affect MPV levels, can cause tendency to cardiovascular diseases and metabolic syndrome fasting glucose and serum lipids were evaluated.

RESULTS:

When groups were separately compared with control group, 7 idiopathic hypoparathyroidism (% 31,8, p: 0,02), 16 post surgery hypoparathyroidism (% 29, p:0,015), 15 hyperparathyroidism patients (%35,7, p:0,003) and 5 control (%10, p<0.05) patients had metabolic syndrome. MPV levels were statistically significant higher in postsurgical and idiopathic hypoparathyroidism and hyperparathyroidism group than control group. Low calcium levels had a positive correlation between IFG (R=-0,336, p=0,000) and metabolic syndrome (R=-0,201, p=0,030). BMI, age and gender were independent predictive factors of MPV. Adjustment for other factors did not alter these relative risks. (Table 1)

	β	P
MPV	0,586	0,024*
Gender	-0,118	0,56
Age	-0,057	0,78
BMI	-0,177	0,45
Metabolic Syndrome	-0,629	0,007*
IFG	0,018	0,646
CRP	0,484	0,018*
LDL Cholesterol	0,646	0,023*

Table 1: Multiple regression analysis of clinical factors possibly affecting MPV in hypoparathyroidism patients.

CONCLUSION:

These study assessed MPV and relationship between metabolic syndrome and cardiovascular disease risk. In this study, we have shown that MPV levels were higher in hypoparathyroidism groups than control group. The main problem seems to be low calcium levels in patients with hypoparathyroidism. Thus, in hypoparathyroid patients appropriate calcium and vitamin D replacement therapy can protect from cardiovascular risk.

