

Assessment of Mean Platelet Volume in Acromegaly and its Relation With Disease Outcome

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Objectives:

Acromegaly is associated with increased risk of coronary atherosclerosis and cardiovascular mortality. Changes in coagulation and fibrinolysis markers in acromegalic patients have been shown to indicate increase in the risk of developing cardiovascular disease. Mean platelet volume(MPV) is a marker of platelet function and activity, and increased MPV is an independent risk factor of myocardial infarction and thrombotic events. In this study, we examined the levels of MPV in acromegalic patients before and after treatment and also compared with a control group

Methods:

A total of 80 patients (24 were diabetic) treated in our clinic with the diagnosis of acromegaly between 2009 and 2014 and 65 (23 were diabetic) age- and gender-matched nonacromegalic controls were reviewed retrospectively. Demographic data of all subjects, and postoperative cure and remission with medical management among acromegalic patients were recorded. Preoperative and postoperative MPV values as well as MPV values after controlled disease in patients with medical treatment were compared. In both groups HbA1c levels and their relationship with MPV were also evaluated

Table 1. Comparison of demographic data and MPV values between groups

	Acromegaly (n=80)		Control (n=65)		P Value
Gender (F/M)	37/43		33/32		0,32
Age	46(± 11)		48(± 11)		0,24
MPV	8,62(± 1,48)		7,77(± 0,85)		<0,001
HbA1c % (for diabetics)	7,1(± 2,8)		6,9(± 1,1)		0,64
	DM	nonDM	DM	nonDM	
MPV	8,5 (± 1,40)	8,68 (± 0,78)	7,65 (± 1,50)	7,83 (± 0,90)	<0,05 *

* There is no significant differences of DM and nonDM between groups

Table 2. Evaluation of outset MPV and post-treatment MPV of acromegaly patients

	Preop MPV	Postop MPV	MPV after surgery+medical treatment	P value
All acromegaly group	8,62(± 1,48)	8,1(± 1,50)	7,5(± 1,90)	<0,000*
The group which is curing provided after surgery	8,52(± 1,46)	7,5(± 1,02)	-	<0,000
The group which is under control with surgery+medical treatment	8,66(± 1,56)	8,02(± 1,36)	7,38(± 1,03)	<0,000*
The group which is uncontrolled with surgery+medical treatment	8,26(± 0,86)	8,05(± 0,8)	7,38(± 0,63)	0,64-0,32 respectively

* There is significant differences between all MPV values

Results:

MPV values were significantly higher in both the diabetic and non-diabetic acromegaly patients compared with the control subjects. Postoperative MPV values were significantly reduced compared to preoperative values in patients cured after surgery. Patients who achieved disease control with medical therapy after the failure of surgical intervention demonstrated MPV values similar to those reported in patients cured with surgery. When MPV values at presentation were evaluated in the acromegaly and control groups, it was shown that age, gender and presence of diabetes mellitus, had no effect on MPV values.

Conclusions:

MPV can be considered as a marker for atherothrombotic process and prognosis in acromegaly. Our findings suggested MPV would be a beneficial prognostic marker of cardiovascular complications in patients with acromegaly

References:

- 1) Kartal I, Ofiaz H, Pamukcu B, et al. Investigation of early atherosclerotic changes in acromegalic patients. Int J Clin Pract. 2010;64(1):39-44.
- 2) Brevetti G, Marzullo P, Silvestro A, et al. Early vascular alterations in acromegaly. J Clin Endocrinol Metab. 2002;87(7):3174-3179
- 3) Erem C, Nuhoglu I, Kocak M, et al. Blood coagulation and fibrinolysis in patients with acromegaly: increased plasminogen activator inhibitor-1 (PAI-1), decreased tissue factor pathway inhibitor (TFPI), and an inverse correlation between growth hormone and TFPI. Endocrine. 2008;33(3):270-276

