SHORT COMMUNICATION

Smoking Cessation Decreases Mean Platelet Volume in Healthy Korean Populations

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SUMMARY

Background: Smoking is considered as a major modifiable risk factor for cardiovascular diseases. It has been shown that smoking cessation drops the risk of cardiovascular diseases such as myocardial infarction and also improves platelet function. Because mean platelet volume (MPV) is a simple and convenient indicator for platelet activation, we planned to investigate the effect of smoking status on MPV in healthy populations.

Methods: This study was conducted on 398 individuals who visited our hospital for regular medical check-ups and were confirmed not to have diabetes or hypertension. MPV was measured using EDTA blood on an Advia 2120 (Siemens Healthcare Diagnostics Inc., Tarrytown, NY, USA) within 2 hours.

Results: Present smokers showed higher MPV levels than present non-smokers. When MPV was compared by taking previous smoking history and present smoking status into account, the smoking cessation group showed significantly lower MPV levels than other groups.

Conclusions: Because this finding was significant only in the female group, the change in MPV according to smoking status was found to be different by gender. We carefully suggest that smoking cessation can lower the risk of cardiovascular diseases through the change in MPV, which can be more effective for women than men.


KEY WORDS
mean platelet volume, smoking cessation, gender

INTRODUCTION

Mean platelet volume (MPV) is one of the most popularly used laboratory parameters of platelet function [1-4]. MPV is derived from an automated hematologic analyzer as part of a common blood count and considered to be a highly convenient and economic index since there is no need for additional sampling and costs. Because larger platelets are more active than smaller ones, increased MPV is related with inflammatory and thrombotic diseases [1,5,6]. Recently, MPV has been actively studied in cardiovascular, diabetic, hypertensive, and metabolic disorders while it was also investigated in special conditions such as a patient’s smoking status [5,7-11]. Smoking is considered a major, modifiable risk factor for cardiovascular diseases [7]. There were several previous reports investigating the relationship between smoking status and MPV [7-9,12-14]. It has also been shown that smoking cessation drops the risk of cardiovascular disease such as myocardial infarction and also improves platelet function [14-16]. Because MPV is a simple and convenient indicator for platelet activation, we planned to investigate the effect of the history and the present status of smoking on mean platelet volume in healthy populations.

MATERIALS AND METHODS

A total of 40 individuals were randomly selected every month out of about 7000 medical check-ups at our hospital from January 2011 to December 2011. Clinical information was collected through extensive medical chart reviews. Because 82 patients who had hypertension or diabetes were excluded in this study, 398 individuals were finally enrolled. According to information from extensive medical chart reviews, we found that