Platelet Indices in Renovascular Thrombosis After a Renal Transplant

Ercan Varol

Dear Editor

I recently read with a great interest the article by Sakalli and associates.¹ They compared plasma levels of mean platelet volume (MPV) before and after renal transplant to investigate the possible role of determining renovascular thrombosis. In their study, no patients had any thrombotic events and/or renal allograft loss. Because of lack of a second group (composed of patients with renovascular thrombosis after transplant), the authors had no way of comparing the MPV levels of each group. However, they did find that the MPV levels were significantly decreased when compared with pretransplant levels; this is interesting. However, we would like to make a minor criticism about the study from a methodologic standpoint.

First, in Methods section, the biochemical analyses are not clear. In their study, blood was collected into a Vacutainer tube, containing ethylenediaminetetraacetic acid for measuring the MPV. However, they did not mention the time between blood sampling and blood analyses. This is important for the tubes containing ethylenediaminetetraacetic acid. As we know, platelets exhibit a time-dependent swelling when blood samples are anticoagulated with ethylenediaminetetraacetic acid, while this swelling does not occur in the presence of citrate.² With impedance counting, the MPV increases over time, as platelets swell in ethylenediaminetetraacetic acid; increases of 7.9% within 30 minutes have been reported, and overall increases of 13.4% over 24 hours (although most of this increase occurs within the first 6 hours²). The recommended time for measuring the MPV is 120 minutes after venipuncture.³ To reliably measure the MPV, the potential influence of an anticoagulant on the MPV must be carefully controlled, using either an alternate anticoagulant (such as citrate) or standardizing the delay between sampling and analyses (less than 2 hours). This was not made clear in the study.

Second, significant associations were made between MPV and diabetes mellitus, prediabetes, smoking, hypertension, hypercholesterolemia, obesity, the metabolic syndrome, and some antihypertensive use.⁴ These factors can influence the MPV values. The authors did not mention these factors in the patients, either before or after, the renal transplant. After a renal transplant operation, patients may lose weight, blood pressure values may change, and glucose and lipid levels also may change. It also has been reported that decreases in blood pressure and body weight can decrease the MPV values.⁵ Additionally, although there is no study on the subject currently, using immunosuppressive drugs after a renal transplant also may influence the MPV levels. As a result, a decrease in the MPV after a renal transplant may be attributed to these factors.

References