The association of platelet indices with diabetic retinopathy: what's next?

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Continuous discoveries in the knowledge of diabetic retinopathy have led to a better understanding of this complex disease that has been dominating the ophthalmology fraternity for several decades. Generally, the concepts of micro-occlusion and micro-infarction have been seen to be of primary concern. Nevertheless, there are other important angles or pathological processes that must be emphasized to manage the condition optimally. Although some countries have progressed rapidly in the management of diabetic retinopathy, most countries still consider this disease an uphill challenge to battle against. Changing the approach from treating the end stage of the disease to proactive care could therefore help the health care system to approach the problem from a different angle.

The availability of various intravitreal anti-VGEF treatments have currently given us much hope in the treatment of diabetic macular oedema. Imagine the impact of a paradigm shift in health care if we were able to objectively measure the severity of a disease before it progresses and becomes more difficult to treat. In other words, even if we are not extremely successful with our comprehensive prevention efforts, we could potentially be able to address the increasing problems of diabetic retinopathy in our society with proactive management measures.

The association between ischemic heart disease and mean platelet volume as an important clinical biomarker has been well studied. The fact that platelet parameters are potentially associated with increased thrombotic phenomena has provided a sound basis for ophthalmic researchers to investigate potential similar associations with ocular microthrombi.[1] Identifying the most appropriate indicators and levels of corresponding biomarkers could prove ground-breaking for the clinical management of diabetic eye disease.

Mean platelet volume (MPV) is one of the platelet indices positively related to platelet adhesion and aggregation.[2] A higher MPV value means a higher adhesion and aggregation rate. This plays a very important role in the damaged microcirculatory system in diabetic eyes. Therefore, it is not surprising that we see a consistent relationship between platelet indices and severe diabetic retinopathy.[2,3] Furthermore,

adhesion and aggregation could accelerate thrombosis formation in the presence of persistent vascular endothelial damage in diabetic patients. Ongoing research into the relationship between sorbitol metabolism and platelet indices may also change our perspective in the management of diabetic retinopathy in the future.[4-6] Hopefully, as more relevant indices are identified in the future, this will help to increase the likelihood of predictors of severe diabetic retinopathy.

The research article by Pradipta *et al.* in this current issue is one of the long-awaited findings from our region that further support the strong correlation between platelet indices and severity of retinopathy.[7] It is interesting that the correlation becomes much clearer when it reclassifies groups of retinopathy. It is easy to understand that our clinical classification is based on the apparent signs. The final correspondence between laboratory values and clinical findings will be better defined with similar research in the future. We look forward to further publications on relevant topics from this part of the region, as diabetic complications are much more common in our population than in other parts of the world.

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