

Platelet Function Testing in Stroke Prevention: Is it Necessary?

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Introduction

Dear Editor,

We use antiplatelets in stroke prevention day in and day out, but are we confident enough about their expected effects on the human body? On many occasions, they do not produce the best results as antithrombotic measures, and they also cause unexpected bleeding manifestations. Can we take steps to ensure its maximum effectivity and avoid catastrophe? There is interindividual variability in the pharmacodynamic response to antiplatelet medications. Even when patients take the recommended amounts of antiplatelet drugs, they often show high on treatment platelet reactivity during platelet function testing. This means that the drugs are not effectively blocking platelets, which can lead to unexpected thrombotic events. Conversely, studies have linked a higher bleeding risk to low on-treatment platelet reactivity or an enhanced response to antiplatelet medications [1]. The recent advancements in platelet function testing using artificial intelligence, improved sensors, communication technologies, and microfabrication have made these tests more accurate, fast, and cost-effective. The new wearable devices hold another promise in thrombotic disorders management [1]. These functional tests, combined with a genetic study of the platelets, can help determine how functional the platelets are (regardless of count), how well an antithrombotic is working, how likely someone is to bleed, and whether cancer is present or has a chance in the future [2]. Therefore, it could assist in selecting appropriate antiplatelets, forecasting potential bleeding risks, and subsequently implementing precautionary measures, particularly in cases of acute stroke requiring thrombolysis or thrombectomy. Thus, it may

detect hematological disorders long before there is a clinical manifestation. In situations where we have to balance between the risk of bleeding and the chance of thrombosis, the detailed knowledge about platelet functions will give us additional information and help in decision-making. We already know "Bengal macrothrombocytopenia" is prevalent in India (mostly in the eastern part of the country), but probably not all cases are benign, and a considerable number of patients have an increased mild to moderate bleeding tendency [3]. If we perform these tests on a regular basis, we can easily identify other regional and genetic variations of platelet number and function. So, screening these patients beforehand (potential cases with a chance of a vascular event) is necessary so that we do not lose time during the urgent treatment process. Patients who have/had any vascular event should undergo routine platelet function testing. We also need to make sure that these tests are widely available in a cost-effective way.

References

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