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WHEN PLATELET TRANSFUSION MIGHT NOT BE WISE.....

Dear Doctor,

Greetings !!!

Sharing with you an interesting updates....

ITP traditionally used to be called as "Immune Thrombocytopenic Purpura" or "Idiopathic Thrombocytopenic Purpura." And there's been a lot of discussion and debate about the name and currently, it has been renamed to simply being called as "Immune Thrombocytopenia". And the term "purpura" has actually been dropped because it's a bleeding symptom, but it's not present in all of the cases so it's not a defining feature. And so it's basically the International Working Group on ITP has renamed it simply as Immune Thrombocytopenia, although the word ITP still sticks around. As the nomenclature has been revised, also the classification of ITP has recently been revised, and now, "newly diagnosed" or "acute ITP" is ITP within the first 3 months, and 3 to 12 months, we call this "persistent ITP," and after 12 months it's called as "chronic ITP."

The presentation is variable. The children, most commonly having acute ITP, a single episode preceded by a viral infection, and then it typically resolves without needing a lot of intervention. In contrast, it's in the adult population, more so in the elderly that we see the chronic manifestation of ITP, and it's persistent and keeps recurring.

As we know that the primary pathophysiological mechanism is destruction of the antibody-coated platelets. Theoretically, the transfused platelets also tend to get coated with these antibodies, which are targeting primarily the glycoproteins. Just as the native platelets are susceptible, the transfused

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platelets are all also susceptible by the phagocytic action of the reticuloendothelial system cells or the macrophages. However, what that can lead to is a shortened survival and a rapid clearance of the transfused platelets as well. Irrespective of this, there is a role, potentially important role for emergency treatments of ITP.

ITP presents mostly with mucocutaneous bleeding, epistaxis, nose bleeds, purpura as we said, but rare bleeding, for example, internal bleeding, including GI hemorrhage, genitourinary hemorrhage, and very critically intracranial hemorrhage can happen as well. It can happen in children as well as in elderly, more tendency to happen in the elderly. If there is major life threatening bleeding, we have to bring in an emergency therapy, which will be platelet transfusions.

ITP or Immune Thrombocytopenia can present with extremely low platelets counts. Do not follow a number in taking a decision for an intervention like a platelet transfusion. It is a therapeutic option that is available, should the patient have a life threatening bleeding, or hemorrhage. Important to note that platelet transfusions may or may not work. They have shortened survival after transfusion. Institution of a concurrent alternative therapy while we are doing emergency platelet transfusions is important. There is more data supporting concurrent use of platelet transfusions with IVIG as bringing better increment in platelet counts and better resolution of bleeding.

Secondly, also to remember that there are other causes of thrombocytopenia or other platelet consumptive or destructive disorders like TTP or Thrombotic Thrombocytopenic Purpura and Heparin-Induced Thrombocytopenia(HIT), where because of the underlying pathophysiological mechanism, platelet transfusions may not help, but may actually be associated with significant adverse outcomes like arterial thrombosis, and higher risk of mortality. To sum it all, to know that platelets remain an important therapeutic alternative in managing some of these patients, but the decision making should be highly individualized. And if you do transfuse platelets, make sure to have a close monitoring for any adverse effects.

- Main article discussed, on transfusion in ITP: Goel R et al. Platelet transfusion practices in immune thrombocytopenia related hospitalizations. Transfusion 2019;59:169-176.
- MedPage Today Article: MedPage Today discussion of the above article regarding overuse of platelets in ITP.
- 2015 article outlining possible danger from platelet transfusion in TTP and HIT: Goel R et al. Platelet transfusions in platelet consumptive disorders are associated with arterial thrombosis and in-hospital mortality. Blood (2015) 125 (9): 1470–1476.
- 2019 American Society of Hematology ITP Treatment Guidelines: Neunert C et al. American Society of Hematology 2019 guidelines for immune thrombocytopenia. Blood Adv 2019;.