

Alternatives to prophylactic platelet transfusions

Prophylactic platelet transfusions are given to prevent bleeding when the platelet count is low

(<10x10⁹/L), or when the person has severe platelet dysfunction or thrombocytopenia and requires a procedure. (1, 2) However, despite prophylactic platelet transfusions a significant proportion of people with prolonged severe thrombocytopenia due to haematological malignancies have clinically significant bleeding.(3)

Thrombopoietin mimetics act by stimulating megakaryopoiesis resulting in increased thrombopoiesis. In immune thrombocytopenia they increased platelet counts but did not decrease the incidence of serious bleeding events.(4) In people with liver disease on antiviral therapies an increased risk of thrombosis occurred following thrombopoietin mimetic administration.(5) Use of thrombopoietin mimetics in the treatment of myelodysplastic syndrome has been shown to reduce the exposure-adjusted bleeding rate.(6) The administration of thrombopoietin mimetics for people with aplastic anaemia is of particular interest, as in addition to increasing the platelet count, they may also have a disease-modifying effect.(7)

Antifibrinolytics have been used to prevent bleeding in people undergoing surgery.(8) There is currently little evidence for their benefit in people with low platelet counts,(9) but there are three ongoing studies assessing the use of antifibrinolytics to prevent bleeding in people with haematological malignancies.(10-12)

Procedures with a low risk of bleeding, or bleeding that can be controlled easily by pressure at the procedure site may not require platelet transfusions. Vascular closure devices can also be used to reduce the risk of bleeding.(13)

Desmopressin promotes coagulation by stimulating factor VIII release from endothelial stores and increasing vWF activity.(14) One randomised trial has compared DDAVP to platelet transfusion for treatment of cirrhotic patients with platelet counts between 30-50x10⁹/L undergoing dental extractions. This trial was too small to demonstrate efficacy, as only a single bleeding event occurred.(15)

The limited efficacy, side effect profile and expense of Factor VIIa limits its use as an alternative to platelet transfusion.(16)

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