Lancet Haematol. 2022 Mar;9(3):e168-e169 Epub 2021 Nov 20

PMID: 35240068 DOI: 10.1016/S2352-3026(22)00030-8

Thrombopoietin receptor agonist in chemotherapy-induced thrombocytopenia

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Abstract

Chemotherapy regimens for cancer treatment are designed to deliver maximum dose intensity while making treatment tolerable to most patients. Unfortunately, desired dose intensity is often limited by myelotoxicity, resulting in dose reduction, prolonged intervals between cyles, or moving to less-intensive regimens with the risk of decreasing response rate and overall survival. Blood transfusion and growth factors can help to reduce anaemia and neutropenia. Concerns about erythropoiesis stimulating agents increasing tumour progression and deaths in some types of solid tumours1 preclude their use to mitigate anaemia. Unlike erythropoietin receptor, the thrombopoietin receptor is expressed at very low or undetectable levels in cancer cells.2 Therefore, with the advent of the first modern thrombopoietin receptor agonists (eg, romiplostim and eltrombopag) about 10 years ago, these drugs were postulated for their potential to eliminate thrombocytopenia as additional limiting factors to the desired dose intensity.