

Pacritinib and its use in myelofibrosis associated thrombocytopenia

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Madam,

Myelofibrosis is a disorder that impedes blood cell production in the bone marrow. It can be further classified into two types, primary when it arises on its own or secondary when it develops from another bone marrow disorder. Irrespective of its type, it causes extensive marrow fibrosis, leading to severe anaemia and thrombocytopenia, increasing the bleeding risk. Often, this disease can result in an increased size of the spleen, a condition called splenomegaly.¹

F.D.A. approved Pacritinib (Vonjo) in February 2022 to treat adults with myelofibrosis with thrombocytopenia and a platelet below 50,000/ μ L.¹ Pacritinib is a JAK2, FLT3, and IRAK1 inhibitor, which has demonstrated the ability to impact MF-associated splenomegaly and is associated with a reduction of symptoms while having limited myelosuppression with manageable gastrointestinal toxicity.² According to a randomized clinical trial in patients with myelofibrosis and thrombocytopenia, including those who were previously treated with anti-JAK therapy, Pacritinib was given twice daily and was found to be more effective than the Best Available Therapy (B.A.T.), including Ruxolitinib, for reducing splenomegaly and symptoms.³ Ruxolitinib is an orally available JAK1 and JAK2 inhibitor. It is the only J.A.K. inhibitor currently approved for treating intermediate and high-risk myelofibrosis in the United States and Europe.⁴

The most common side effects of Pacritinib in patients included diarrhoea, nausea, and vomiting. The most common haematologic adverse effects, which were most noted in this thrombocytopenic population among Pacritinib-treated patients, included anaemia and

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thrombocytopenia. Although more frequently seen than haematologic side effects, the G.I. side effects rarely led to dose reduction or discontinuation.⁵

Pacritinib is a novel introduction that can help treat thrombocytopenia in patients with myelofibrosis. However, it requires larger population-based studies to further solidify its efficacy and safety and demonstrate its impact on the long-term survival of patients with myelofibrosis.

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References

1. U.S. Food and Drug Administration. 2022. FDA approves drug for adults with rare form of bone marrow disorder. [Online] [Cited 2022 Sep 14]. Available from: URL: <<https://www.fda.gov/drugs/news-events-human-drugs/fda-approves-drug-adults-rare-form-bone-marrow-disorder#:~:text=FDA%20has%20granted%20accelerated%20approval,%20levels%20below%2050%2C000%2F%2C%25B5L.>>>
2. Diaz AE, Mesa RA. Pacritinib and its use in the treatment of patients with myelofibrosis who have thrombocytopenia. *Future Oncol* 2018; 14: 797-807.
3. Mascarenhas J, Hoffman R, Talpaz M, Gerds AT, Stein B, Gupta V, et al. Pacritinib vs Best Available Therapy, Including Ruxolitinib, in Patients With Myelofibrosis: A Randomized Clinical Trial. *JAMA Oncol* 2018; 4: 652-9.
4. Verstovsek S, Komrokji RS. A comprehensive review of pacritinib in myelofibrosis. *Future Oncol* 2015; 11: 2819-30.
5. Verstovsek S, Mesa R, Talpaz M, Kiladjian JJ, Harrison CN, Oh ST, et al. Retrospective analysis of pacritinib in patients with myelofibrosis and severe thrombocytopenia. *Haematologica* 2022; 107: 1599-607.