Partial Splenic Embolization in Patients with Myelodysplastic Syndrome and Myelofibrosis

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INTRODUCTION

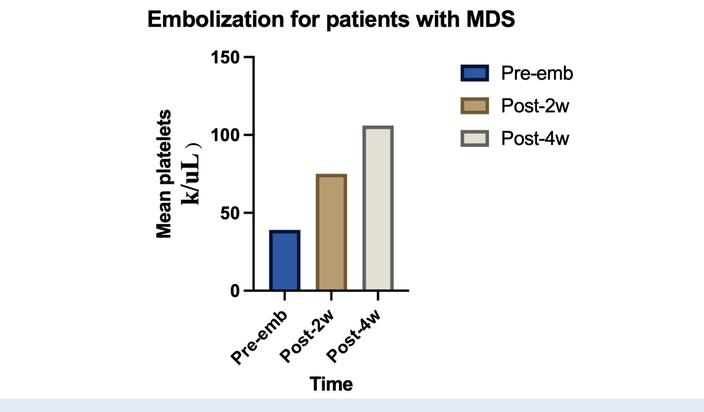
- Patients with myelodysplastic syndrome (MDS) and myelofibrosis (MF) often develop severe refractory thrombocytopenia during the course of the disease.
- Splenomegaly in MF patients can be challenging after JAK-2 inhibitors failure and often leads to portal hypertension.
- Splenectomy is associated with major comorbidity and mortality and the splenic radiation effect is temporarily complicated by profound cytopenia.
- We hypothesize that a selected group of patients might benefit from partial splenic embolization to mitigate splenomegaly and improve platelet counts.

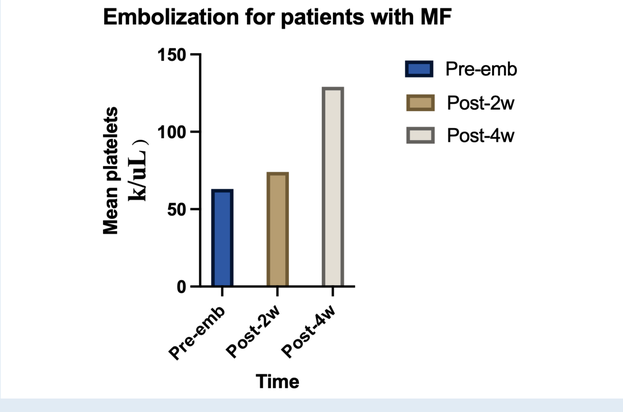
METHODS

We conducted a single-center, retrospective study that was approved by our Institutional Review Board to assess the benefit of splenic embolization among patients who underwent the procedure.

RESULTS

- We included 15 patients who underwent splenic embolization procedures between 2014 and 2021.
- The primary indication for splenic embolization in MDS patients (n=5) was thrombocytopenia and in MF patients (n=10) was splenomegaly, which was associated with abdominal pain (n=6), portal hypertension (n=3), and ascites (n=1).
- Eighty percent of MDS patients received prior hypomethylating agents (HMA). All MF patients received prior ruxolitinib, and 70% had received additional therapy (lenalidomide or thalidomide).
- For MDS patients, the mean pre-embolization platelet count was 39 k/uL. The post-embolization mean platelet count was 75 k/uL at 2 weeks and 106 k/uL after 4 weeks, with 60% of MDS patients (n=3) having hematologic improvement in platelets (HI-P) based on the 2006 IWG response criteria
- For MF patients, mean platelets count was 63, 74, and 129 k/uL for pre, 2 weeks, and 4 weeks respectively.
- The mean pre-embolization splenic volume was 3,804 cm^3 and 3,740 cm^3 at the first follow-up in 2–4 weeks after the procedure with a splenic infarct volume percent of 57%. For MF patients with splenomegaly-associated abdominal pain, 4 out of 6 had symptomatic improvement at the first follow-up.
- The median overall survival was 9.5 months for MDS patients and 3.7 months for MF patients. The 30-day mortality was 20%; 2 patients died from sepsis, and 1 died due to visceral bleed.





Conclusion:

Partial splenic embolization might provide clinical benefit in a selected group of MDS/MF patients with thrombocytopenia and splenomegaly-associated abdominal pain refractory to medical therapy.

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