Peer Review File

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Review Comments

Reviewer A

Comment: *Interesting commentary. However, I suggest reviewing some papers on myeloproliferative neoplasms and COVID-19. In particular, a series of original observations by Barbui T et al. One of these articles deals with the role of thrombocytosis associated with severe pulmonary problems and venous thrombosis.*

Response: We have reviewed the literature on myeloproliferative neoplasm and COVID-19 and have included three publications by Barbui T et al. (references 14, 15 and 22). We have added the following text on page three, line 24 "Particularly, among the phenotype of myeloproliferative neoplasms with increased platelet count called essential thrombocythemia (ET), there was an increased susceptibility of ET associated thrombosis in ET patients with COVID-19 (14). Similarly, a high risk of hospitalization was seen in a subset of MPN patients with COVID-19 diagnosis that displayed heightened inflammatory state like increased neutrophil to lymphocyte counts (NLR) (15)." We have added the following sentence on page 4, line 14 as "Indeed, Barbui et al. recently reported that COVID patients with myeloproliferative neoplasms had an alarming mortality rate (24%) after ruxolitinib was withdrawn (22)."

Reviewer B

Comment: *My only suggestion is to better define the group of patients with Hematologic Malignancy. In the discussion, it seems to this reviewer that it is unclear if the authors are discussing all patients with a diagnosis of hematologic malignancy or patients with active disease that are undergoing treatment. Are you discussing all patients with a diagnosis or those with active disease? Also, clearly some patients will be in a state of active disease and in different stages of the disease, treatment and even those in remission. Please be more specific and clear up in the discussion if this is a limitation of the study or if these differences exist.*

Response: The original population based retrospective study utilized linked administrative database and identified 39,880 individuals with diagnosis of hematological cancer within 10 years of the index date. Among these, 24% of patients received active chemotherapy and 5.6% received anti-CD20 therapy. Therefore, the first half of our discussion of the paper reflects hematological cancer at diagnosis. Accordingly, on page 2, line 38 in we added " Of the 39,880 patients with hematological cancer in the study, a vast majority (~70.4%) represents individuals with a diagnosis of either leukemia, myeloproliferative neoplasm, myelodysplastic syndrome, lymphoma, or multiple myeloma based on the International Classification of Diseases (ICD) codes in the Ontario Cancer Registry with 10 years of the index date. Why such preexisting diagnosis of hematological cancer increased the severity and worsened the outcome of COVID-19 is yet to be fully understood."

On the second half of the discussion, on page 3 we address the potential link between anti-CD-20 therapy with platelet and neutrophil activation that trigger inflammation, and thrombosis.

Lastly, the granular details like the stage of disease, nature of the treatment, remission or active diseases remain unclear. Therefore, we have added the following text on page 4 line 9 to highlight

the limitations of the study. “ The study by Gong et al. has intrinsic limitations in part due to its reliance on a linked administrative database. Primarily, there is a lack of granular clinical data on hematological cancer including the stage of disease, whether the patients exhibit a degree of remission or relapse, the use of therapy other than anti-CD20 antibody and whether any of the anti-cancer therapy was withdrawn in the context of COVID-19. Indeed, Barbui et al. recently reported that COVID patients with myeloproliferative neoplasms had an alarming mortality rate (24%) after ruxolitinib was withdrawn (22).”