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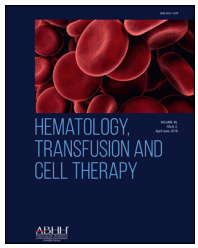

Scientific Comment

COVID and hematology: special considerations regarding patient safety, gold standard therapies and safety for health care professionals

Marcia Garnica [a,*], *Angelo Maiolino* [b]

[a] *Complexo Hospitalar de Niterói, Niterói, RJ, Brazil*
[b] *Faculdade de Medicina, Universidade Federal do Rio de Janeiro =, Rio de Janeiro, Brazil*

All the world is facing a severe crisis, regarding a new type of Coronavirus. The SARS-CoV-2 has already spread to all continents. On March 11, 2020, the WHO declared the outbreak of a pandemic, which possibly will infect more than 50% of the global community.[1]

The disease caused by SARS-CoV2, named COVID-19, is of hugely variable intensity, from the asymptomatic to septic patients. The clinical presentation in the majority of the cases is not only with fever (87-98%), cough (55-80%), dyspnea (30-50%), sputum production (30%), chest oppression (20%), myalgia (30-45%), diarrhea (3-14%) and headache (15%), but also with anosmia and hyposmia.[2–4] Severe outcomes, including intensive care necessity, mechanical ventilation and death, have been strongly associated with the elderly and the presence of comorbidities, such as diabetes and chronic cardiac, renal or pulmonary diseases.

Despite the lack of clinical data, patients with oncological or hematological diseases have also been considered at high risk for severe COVID-19 by some specialists.[5] There are some reasons for this: intense immunosuppression due to hematological diseases or their treatment, corticosteroids, frequent exposure to medical institutions (hospitals or clinics), high exposure to other patients and, in some scenarios, also advanced age.

Few reports have addressed the cancer population. The first, from the China outbreak, reported the clinical presentations and outcomes of 18 patients with cancer, compared to those without the disease. Patients with cancer were observed to have a higher risk of severe events, compared to patients without cancer. Moreover, cancer patients who underwent recent chemotherapy or surgery had a higher risk of clinically severe events than those who did not receive treatment in this series. Only one patient in the group had a hematological malignancy (a 47-year-old male with a diagnosis of lymphoma) and the resolution of COVID-19 without complications.[5] Several concerns about this study have been made, mainly due to the small sample size and heterogeneity of diseases and therapies among patients. None had been treated with immunotherapy.

Diseases, such as multiple myeloma, for example, are for the most part diagnosed in elderly patients with several comorbidities, requiring corticosteroids as part of the therapy in 100% of the cases. The risk of severe COVID-19 in this patient is probably higher than that of a healthy young individual with no comorbidities, but until now, no data is available to confirm this hypothesis. There are some data from the International Myeloma Foundation.[6] The Asian reports from sites in Beijing, Shanghai, Korea, Singapore and Japan (through the

* *Corresponding author at*: Department of Internal Medicine, Universidade Federal do Rio de Janeiro, Rua Professor Rodolpho Paulo Rocco, 255 Sala 4A 12, CEP 21941-913 Rio de Janeiro, RJ, Brazil. Tel.: +55 21 25622463.
E-mail address: marciagarnica@hucff.ufrj.br (M. Garnica).
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Japanese Myeloma Society) inform zero cases of COVID-19 in myeloma patients and no COVID-19-related deaths (reports up to March 26). On the other hand, there were more COVID-19 cases in Italy, Spain, and France, some of them resulting in death. Deaths have been reported in fragile elderly patients in end-stage myeloma. Up to March 25, 2020, two multiple myeloma patients in the US were diagnosed with COVID-19, but they are as yet the first cases.

The limited data on myeloma patients is an example of how little information we have about hematological patients. Exactly how susceptible they are to COVID-2 has yet to be established, but patients with compromised immune systems are thought to be particularly vulnerable.[7]

Regardless of all these concerns, new diagnoses of multiple myeloma, acute leukemia and lymphomas are still being made and hematological patients must receive state-of-the-art treatment, despite, or even during, the COVID pandemic.

Some necessary measures have been addressed to maintain safety for our patients and their therapy. First, the baseline disease must be treated as well as possible. Postponement of curative therapies is only acceptable if there are other choices with no detriment to the outcomes.

Some healthcare institutions worldwide, as well as medical associations in Brazil, such the NCCN, EBMT, ASCO, the Seattle Cancer Care Alliance, IFM, ABHH and SBTMO, for example, as are publishing recommendations.[8–12] This information is of great importance to guide institutions to make their organizational structures suitable, prepare medical staff and patients, provide diagnosis and care agility, thus intending to provide cancer treatment to patients in the face of uncertainty and rapid change.

We are summarizing some recommendations: 1. Implement a robust infection and environmental control; 2. Take educational measures: staff training, informative materials production and publications for patients and medical staff at all levels of care (outpatients, hospitals, clinics, others); 3. Decrease to a minimum the number of persons in cancer areas: postponement of non-urgent appointments, improvement in patient care, with the intention of reducing the stay in the care facilities, not allowing visitors and reorganizing the clinical staff to reduce the exposure of patients and staff to personal contacts; 4. Triage all for respiratory symptoms before entering the facilities: it is critical to reduce the exposure to other patients and staff. The number of staff members will probably be reduced; 5. Improve viral diagnosis, even if the level of suspicion is low; 6. Provide as many viable donors as possible for blood supplies; and 7. Choose wisely the moment for intensive therapies with high-risk complications and intensive care necessities.

Regarding intensive therapies, such as stem cell transplantation, several considerations have been addressed. Most of them are: safety in stem cell harvest in areas with a proven local circulation of SARS-CoV-2, the provision of blood products and the provision of secure installations and an ICU, if needed.[9,13] Transplant centers must maintain state-of-the-art care, but during the COVID pandemic, most of them will probably be unable to do so.

Some patients will not be able to postpone their therapies due to their baseline disease prognosis. In these cases, a clear discussion should be held to minimize the damage of the actual situation.

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