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Editorial

# Risk factors Involved with Multiple Myeloma in the Patients During Covid Pandemic

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## EDITORIAL NOTE

People with multiple myeloma have a significantly higher risk of bacterial and viral infection, while patients with monoclonal gammopathy of uncertain significance have a two-fold greater risk of infection. In a survey, 167 (52%) of 322 patients with multiple myeloma said they had at least one infected phase in the year before commencing anti-myeloma medication, and 133 (43%) of 314 patients said they had at least one infectious period in the first six months after starting anti-myeloma therapy.

Multiple myeloma can cause significant immunosuppression by affecting virtually all immune effector systems, such as B cells, T cells, natural killer cells, dendritic cells, and the complement system, putting patients at risk for infections even before starting treatment. Proteasome inhibitors, dexamethasone, high-dose melphalan, monoclonal anti-CD38 antibodies, bi-specific T-cell engagers, and cellular treatments (eg, chimeric antigen receptor T-cell therapy) are among the most common medications used to treat multiple myeloma. Immunological impairment can be exacerbated by myeloma-related or treatment-related organ dysfunction, comorbidities, and, more commonly, immune senescence associated with advanced age, as well as T-cell fatigue following long-term therapy.

In December of this year, the first case of pneumonia with a new coronavirus as the suspected pathogen was reported. Patients with multiple myeloma and other monoclonal gammopathies have been at an increased risk for SARS-CoV-2 infection since this time, but exact data on the increase is still unavailable and depends on patient and treatment-related factors, as well as the disease's current state. Patients infected with SARS-CoV-2 have a longer course of infection and are more likely to die. 650 hospitalised patients with plasma cell abnormalities were included in the biggest series reported by the International Myeloma Society. Their median age was 69 years, and 617 (95%) of the 650 patients had multiple myeloma, with 331 (54%) of the 617 patients receiving first-line treatment. 203 (33%) of the patients died, with death rates varying from 27 percent to 57 percent depending on the country. Age, International Staging System stage 3 disease, high-risk cytogenetics, renal impairment, active or advancing disease, and one or more comorbidities were all risk factors for death. Importantly, certain therapy like autologous Haematopoietic Stem-Cell Transplantation (HSCT) and other treatments were not linked to a poor outcome. The result of 167 individuals with multiple myeloma and COVID-19 illness was reported by the Spanish Multiple Myeloma Cooperative group. When compared to age- and sex-matched individuals without cancer, those with multiple myeloma had a higher in-hospital mortality rate (56 patients; 34%). (38 patients; 23 percent). Age, male sex, active or progressing illness, and renal impairment were all independent risk factors for death. In a 2020 meta-analysis of individuals with SARS-CoV-2 infection and haematological malignancies, the subgroup of 412 patients with plasma cell abnormalities had a death rate of 33% (95 percent CI 25-41).

Multiple myeloma patients usually have significant immunological compromise, which puts them at risk for infections and infection-related death. The chance of contracting SARS-CoV-2 and dying as a result of infection is also higher, emphasising the significance of immunizing patients. Based on the available evidence, patients with multiple myeloma have an inadequate anti-SARS-CoV-2 immune response, implying that some patients are unprotected. Uncontrolled illness, immunosuppression, concurrent therapy, several lines of therapy, and CD38 antibody-directed and B-cell maturation antigen-directed therapy are all linked to poor response. These findings imply that monitoring the immune response to vaccination in patients with multiple myeloma may give useful information for clinical management, such as administering more doses of the same or another vaccine or, if possible, temporarily stopping treatment. Prophylactic treatment with neutralizing monoclonal antibody mixtures may be tried in people who do not respond well. Adherence to infection risk reduction strategies is especially important in patients who lack a SARS-CoV-2 immune response.

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