P1353 EFFICACY OF SARS-CoV2 VACCINATION IN PATIENTS UNDERGOING AUTOLOGOUS STEM CELL TRANSPLANTATION. A MULTICENTER EXPERIENCE

**Topic:** 22. Stem cell transplantation - Clinical

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**Background:**

COVID-19 disease have strongly hit patients with hematological diseases and the ones receiving haematopoietic stem cell transplantation (HSCT) are a particularly vulnerable group. However, the effectiveness of vaccination in self-transplanted patients seems to be variable. The article by Chiarucci et al compared serological data of 38 autologous recipient and 45 healthy subjects, collected 30 days after their vaccination against SARS-CoV-2. In patients receiving high-dose therapy and auto-HSCT, prior administration of Rituximab was associated with a lower rate of immunization against SARS-CoV-2 (54%) and a significantly lower IgG antibody.

**Aims:**

Confirm and implement the data found out by Chiarucci et al. with a wider database derived from our four centers.

**Methods:**

This multicenter retrospective observational study included 82 patients who underwent aHSCT from January 2020 to October 2021, with 58 vaccinated after the autologous procedure (group A) and 24 patients before getting transplantation (group B). We divided patients of group A in 2 subgroups according to the hematological disease: 29 patients affected by plasma cell neoplasms (28 multiple myeloma MM and 1 plasma cell leukemia) and 29 affected by lymphomas (26 non Hodgkin lymphoma, NHL, and 3 Hodgkin lymphoma, HL). Then, we compared patients according to the conditioning regimen and the previous treatment. In group B, twelve patients were tested the first day of hospitalization, the day of discharge and one month after the transplantation.

**Results:**

In group A, 39 (67%) patients had a positive serology and 19 (33%) did not develop any antibody response. In particular, we noticed that the rate of positivity increased with the distance from the aHSCT. When vaccinated within 6 months after the procedure, only 57% of patients were positive, but it increased to 89% after 12 months. The subgroup of patients affected by lymphomas had a lower rate of positivity (52%). In this group, indeed, the distance from the aHSCT was particularly significant in terms of response: in fact, the positivity registered was 30% when the vaccination was done within 6 months, 54% after 6 and within 12 months and 83% after 12 months. When considering NHL the distance from the administration of RTX had a particular impact on the vaccination response: patients receiving the monoclonal antibody within 6 months had a poorer response to the vaccination (13% of positivity) than those who were treated with RTX after 6 and within 12 months (50%) and after 12 months (87%). This result was statistically significant (p ≤ 0.01). In the plasma cells neoplasms subgroup, the rate of positivity was higher (83% overall) and it was not particularly affected by the distance from the transplant. In group B, 15 (63%)
were positive at least 1 month after the procedure, while 9 (37%) were negative. We also noted that, in the subgroup of patients tested also at the hospitalization and at the discharge, no initially positive patient became negative after the transplantation.

**Summary/Conclusion:**

Our data on 82 patients affected by lymphoproliferative disorders who underwent aHSCT confirmed the role of rituximab as negative predictor of response to anti-SARS-CoV-2 vaccination, as already reported by Chiarucci et al. We therefore showed the scanty importance of conditioning and transplantation procedure to the response of vaccination. According to this data, it would be more fruitful consider the vaccination at least 6 months from the last rituximab administration, even though it’s necessary to take into account patient conditions and the epidemiological context.