CASE REPORT: ALLOGENEIC HEMATOPOETIC STEM CELL TRANSPLANTATION OF A R/R T-ALL PATIENT GIVEN NELARABINE, 3 WEEKS POST MODERATE COVID-19 INFECTION IN THE LOCAL SETTING

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Abstract

The COVID 19 pandemic has been a trying period, with increased risk of infections and post-disease complications in patients with leukemia, particularly transplant candidates. **Not enough studies** have shown the effects of doing HSCT in recently treated COVID patients, nor the appropriate interval in which transplant can be safely done. We are then presented with a case of **Relapsed/Refractory T-ALL** in an adult patient, given in preparation for Allogeneic HSCT. In the interim **2 cycles of Nelarabine** of preparing for transplant, he incurred **COVID-19 Pneumonia** that was categorized as moderate. He was immediately admitted for **transplant within 3 weeks post recovery** from COVID, with successful engraftment and discharge on 26th day post-transplant. Although recent **NICE and EMBT guidelines** have recommended that transplant for recently recovered moderate or severe COVID-19 should be at **minimum 3 months post-recovery**, we have seen from this case that it is **possible to do HSCT post COVID-19 infection within a shorter interval** as that recommended. Compared also to patients who were treated pre-pandemic, the **protocol and complications experienced post-transplant did not differ** from this patient who was treated during the pandemic, recovered from post-COVID pneumonia

Keywords: Allogeneic HSCT, Nelarabine, COVID-19, T-cell ALL

Objectives

Questions in possible changes in treatment during HSCT due to the COVID-19 pandemic:

1.) Is there a specific minimum lapsed time as to when a patient can proceed with HSCT post COVID-19 infection?

2.) Are the pre-pandemic transplant protocols still applicable?

3.) Will there be different complications than those previously expected during pre and post engraftment of these patients?

4.) Are there new requirements prior to clearing the patient for transplant, who have been previously diagnosed with COVID-19 infection?

Case

This is the case of a **48 year-old male**, diagnosed case of **T-ALL**, who initially presented with right-sided facial weakness and loss of vision on the right eye.

He received a total of 3 different regimens (GMALL, S-HAM, Venetoclux + Decitabine + Dexamethasone), before eventually responding to **Nelarabine** and achieving **complete remission** as a pre-requisite to transplant.

He contracted **COVID-19, moderate-risk** during his remission; but was able to proceed into HSCT **25 days** post-COVID

Discussion

Nelarabine is a new drug that comes with increased risk for developing infections due to its side effect of **neutropenia**. The patient in this case received the recommended 2 cycles, reaping maximum benefits with minimal side effects.

Based on current guidelines, all patients who are candidates for transplant should be **negative for SARS-COV PCR prior** to starting the conditioning phase, regardless if asymptomatic. It is advisable to **defer the transplantation for at least 3 months**. But in patients with **high-risk of disease progression**, HSCT should be **deferred for a minimum of 14-21 days** until asymptomatic, with **3 new PCR tests at least 1 week apart** prior to starting the conditioning regimen due to risk of progression of the underlying disease. A repeat assessment of organ function must be repeated before transplant.

Immunosuppressives and prophylaxis treatment in transplant patients should still be **continued** as there is no current data supporting the idea to reduce immunosuppression.

There was **no significant difference** between the **overall and progression free survival** of allo-HSCT patients at **day 100** that were transplanted pre and during COVID, incidence of non-COVID 19 infections and febrile neutropenia, or GVHD.

Conclusion

It is possible to **proceed with Allogeneic HSCT within 3 weeks post mild to moderate-risk COVID-19 infection**, but it is important to take into account the multiple factors that were put into play in order for the patient to achieve remission. It is also safe to proceed and continuously provide treatment with HSCT during this pandemic but with extra precautions and to take into account the individual risks and benefits on a case-to-case basis.

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