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Short Report

Geotrichum clavatum infection in the hematological patient undergoing allogenic transplant: Case report

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Introduction

Invasive fungal diseases (IFD) are frequent infectious complications of hematopoietic stem cell transplantation (HSCT). Risk periods for IFD include:

- The pre-engraftment period when neutropenia and mucosal damage are most profound.
- The early post-engraftment period when patients are at highest risk for acute GvHD and viral reactivations due to defective T-cell immunity.
- The late post-engraftment period (beyond day +100) complicated by chronic GvHD and delayed immune reconstitution [1,2].

We reported a case of IFD with CNS localitation in the pre engrafment period in a patient undergoing HSCT from Match Unrelated Donor (MUD)

Case report

61-year-old man, in good general condition and overweight, diagnosed with MDS-evolved AML after two courses of hypothemephilating therapy with azacitidine. It was therefore decided to subject the patient to induction therapy with Vyxeos and subsequent HSCT. During the treatments performed pre HSCT, antifungal prophylaxis with posaconazole was maintained. Induction therapy was well tolerated with no emerging disturbances in the long phase of aplasia.

We therefore proceeded with subsequent conditioning therapy for allogeneic transplantation (MUD 10/10: caratteristiche graft). The therapy was started on 01/02/2021 according to the TBF scheme (dosaggio farmaci). This was associated with GVHD prophylaxis with ATG 6 mg/kg on four days, initiation of cyclosporine on day -1 at the standard dosage of 2 mg / kg and administration of MTX on day + 1,+3, + 6,+11 (last reduced dose for severe mucositis).

In the following days after transplantation, there was the development of severe mucositis in the oral cavity and gastrointestinal tract, as well as febrile phenomena with isolation from the blood cultures of Geotrichum Clavatum. Theraphy with amphotericjna b liposomial was started. The clinical conditions worsened with the progressive development of neurological deficits for which the patient appeared drowsy, unresponsive and with clones in the upper limbs. Brain CT and MRI were therefore performed, which documented the presence of lesions compatible with possible infectious foci at the level of the basal nuclei, without signs of leukoencephalopathy. The

microbiological analysis on liquor made it possible to isolate G.Clavatum here too. Isavuconazole therapy was started immediately. On day +17, three days after the start of antifungal theraphy, granulocyte engraftment was also documented. The patient passed away the same day.

Conclusion

Out clinical case documents a rare infectious complication in the pre-engrafment phase. The prolonged previous aplasia, despite the antifungal prophylaxis performed, certainly contributed to the development of this infection. G. Clavatum is considered to be a rare but emerging opportunist responsible for invasive infections in the haematological patient [1,2].

It is not clear, however, whether the scarcity of reports is a consequence of diagnostic difficulties and misidentifications with other fungal species or whether it is indeed rare.

There is no optimal treatment for Geotrichum infections but based on existing data guidelines recommend amphotericin B with or without co-administered flucytosine or with voriconazole showing good in vitro susceptibility [1].

Mortality associated with Geotrichum-related infections is high, ranging from 57% to 80% [1].

References

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2. The EBMT Endbook 2019.