Case Report

AmBisome® treatment of fungal sinusitis in severe immunocompromised patient with acute lymphoblastic leukemia relapsed after autologous peripheral blood transplantation

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Abstract. This report describes the case of fungal sinusitis in severely immunocompromised 32-year-old male with common- type acute lymphoblastic leukemia who relapsed after autologous peripheral blood transplantation. Empirical therapy with antibiotics and conventional amphotericin B failed to resolve the infection. Following therapy with AmBisome® his symptoms abated and significantly improved scan picture was seen. (www.actabiomedica.it)

Key words: Fungal sinusitis, immunocompromised patient, AmBisome®

Case report

A 32-year-old male was admitted to our hospital for the treatment of relapse of common-type acute lymphoblastic leukemia after previous autologous bone marrow transplantation and reinduction chemotherapy composed of Idarubicin and HD Ara-C. Since he had clinical symptoms suggestion acute sinusitis confirmed in CT scan, and the nasal discharge was positive for *Streptococcus pneumoniae*, the amoxycillin and clavulanic acid with amphotericin B 75 mg per day treatment was started. Tests for Aspergillus antigen galactomannan, which were performed many times (ELISA Platelia Aspergillums; Sanofi Daignostics), were negative.

A follow-up computed tomography scan was performed one month later without any improvement. Because of the lack of efficacy of previous antifungal treatment and in order to treat a profound pancytopenia after chemotherapy reinduction in the patient with subfebrile status (microbiological and fungal tests were negative), AmBisome ®4 mg/kg/day was started.

The bone marrow biopsy was consistent with an aplastic picture without blast, which was interpreted as a completed remission. The institutional transplantation board decided to perform the allogeneic cord blood transplantation because of lack of donor for the patients. Treosulfan (12 g/m^2) was given from the -6, -5, -4, cyclophosphamid (60 mg/kg) on days -3,-2 and melfalan (140 mg/m^2) the day -1 as a conditioning therapy. On the day of transplantation the patient was given three units of partially matched cord blood cells (4/6 HLA loci) with total NC 3,1 x 10^7/kg of body weight. On the day +11th was diagnosed bacteriemia of *Staphylococcus epidermidis*. Vanomycin therapy was started. A follow-up sinus CT scan performed which showed a major radiological improvement and AmBisome® treatment was stopped. Voriconazol (3 mg/kg) was given intravenously as a antifungal prophylaxis.

Symptoms of bone marrow regeneration after cord blood transplantation were noted on day + 36 after transplant at; it was 700 polynuclear cells/mm^3 in a peripheral blood.

During the next few days, CMV reactivation was detected by PCR and the gancyclovir (5 mg/kg twice daily) was implemented. However, life threatening pneumonitis developed and ARDS syndrome was also diagnosed. Sepsis of *Enterococcus fecalis* and *Pseudomonans putide* was detected. The patient died due to severe respiratory insufficiency, despite the very intensive treatment by large-spectrum antibiotic therapy, AmBisome® 4 mg/ kg/ body weight, IgG IV infusion and intensive respiratory care.

Discussion

Aspergillosis and zygomycosis are recognized as infections of the paranasal sinuses. Fungal sinusitis may be a life threatening disorder, especially for immunocompromised patients. Demonstration of invasive disease due to these organisms requires growth from a specimen obtained from normally sterile site or from the identification of fungal elements within tissue as colonization. In severe immunocompromised patient, clinical symptoms might not be fully clinically expressed and diagnosis confirmation remains difficult (1, 2).

This case highlights the necessity of empirical treatment in immunosupressed patients with the picture of computed tomography consistent with sinusitis. The etiology of sinusitis was not found but the probability of fungal infection was very high. We decided to use classical amphotericin B treatment considering a hypothesis of a Zygomycete infection, which is resistant to triazole compounds. Moreover, amphotericin B remains the "gold standard" of antifungal therapy. The primary treatment was not successful so we implemented liposomal amphotericin B – AmBisome®, which is safer and more effective (3-5). The tolerability of both drugs was good.

Our experience indicates that AmBisome® is a very effective drug in empirical treatment of sinusitis in immunocompromised patients.

References

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