Bone Marrow Transplantation for Hepatitis-associated Aplastic Anaemia: Case Reports and a Review of the Literature

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Abstract

Hepatitis-associated aplastic anaemia is a rare cause of bone marrow aplasia. The exact aetiology and the pathogenetic mechanisms involved are largely unknown. The marrow aplasia is usually progressive and severe. Mortality is high without treatment. We report two cases of severe hepatitis-associated aplastic anaemia treated successfully with matched sibling allogeneic bone marrow transplantation, followed by a brief review of the major case series in the literature. Immunosuppressive conditioning regimens usually result in rapid resolution of hepatitis without concomitant liver injury. Bone marrow transplantation for the treatment of hepatitis-associated aplastic anaemia appears to result in good recovery of blood counts with favourable outcome similar to other causes of severe aplastic anaemia. Allogeneic bone marrow transplantation should be considered a preferred option for treatment of severe hepatitis-associated aplastic anaemia when a matched sibling donor is available.

Key words

Aplastic anaemia; Bone marrow transplantation; Hepatitis

Introduction

Hepatitis-associated aplastic anaemia (HAAA) is a rare cause of marrow aplasia and is usually progressive and severe. Mortality is high without treatment. Allogeneic bone marrow transplantation (BMT) was reported to be effective in a few case series. We report two cases of severe HAAA treated with matched sibling allogeneic BMT and present a brief review of the literature.

Case Reports

Case 1

Patient 1 was a 6.5-year-old boy presented with pallor, jaundice and easy bruising for one week. He had no history of drug intake and his family history was unremarkable. He had pancytopenia (Hb 8.8 g/dL, WBC 2.2 x 10^9/L, Neutrophil 1.5 x 10^9/L, Platelet 13 x 10^9/L, Reticulocyte 1.0%). Bone marrow examination confirmed severe hypocellularity. Liver transaminases were increased with ALT 3040 U/L and AST 2840 U/L. Total bilirubin was 394 umol/L. Virology screening including HAV IgM, HBsAg, HCV Ab, parvovirus IgM, CMV and EBV serology were all negative. His blood counts deteriorated in the following weeks with neutrophil progressively falling to 0 and platelet declined to 4 x 10^9/L. Total bilirubin rose to a peak of 474 umol/L without improvement in ALT and AST.

He underwent bone marrow transplantation about eight weeks after the onset of the disease. His 11-year-old HLA-matched elder sister was the donor. He received a total of seven units of packed red cells and 72 units of random donor platelets before BMT. He did not receive any immunosuppressive therapy before conditioning for BMT. Conditioning regimen consisted of cyclophosphamide at a...