Editorial

Autoimmune Hemolytic Anemia after Solid Organ Transplantation: An Uncommon but Fatal Complication

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ABO minor mismatch associated hemolytic anemia can occur after solid organ transplantation. This uncommon clinical problem usually occurs few days after a successful transplantation and hence the diagnosis may be difficult. In this volume, Chiewsilp, et al, reported a near fatal case of immune hemolytic anemia after a successful living related kidney transplantation. For a proper management, prompt recognition and investigation for a definite diagnosis are essential.

The mechanism of hemolysis after ABO minor mismatched organ transplantation is not fully known. The presence of direct antiglobulin test (so called Coombs' test) at the time of hemolysis suggested an immune basis of hemolysis. The presence of anti-A antibody in this study case confirmed that antibody is targeted against recipient's RBC. This led to a notion that donor's type passenger B lymphocyte may be the source of (recipient's RBC) antibody. The production of RBC antibody may thus be considered a form of graft versus host disease. The majority of ABO minor mismatch associated immune hemolytic anemia involves group O donor-group A recipient, while the minority involves group O donor-group B recipient and non AB donor-AB recipient[1]. The involved patients usually were receiving cyclosporin and prednisolone as basic immunosuppression. Some earlier study suggested that hemolysis usually improved after switch from cyclosporin to azathioprine and prednisolone[2]. The observation that RBC antibody occurred despite cyclosporin administration suggests that the antibodies are generally resisted to cyclosporin. This phenomenon clearly demonstrates a selective effect of cyclosporin on T cell of the immune response in the early phase of administration. This is compatible with the finding that hemolysis usually occurs in the early period after transplantation (median time for hemolysis was 2, 10, 7, 8, and 17 days for spleen, kidney, liver, heart-lung and heart transplantations respectively). In the early phase of cyclosporin administration when the effect on

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B cell is not so potent, proliferation of donor's B cell may not be adequately suppressed. In the opposite view, cyclosporin may act as a very potent immunosuppression. This can effectively suppress the function of recipient's type cytotoxic T cell and make it unable to target donor's type B cell. By critical reappraisal of the time-sequence of minor ABO mismatch associated hemolytic anemia, an optimum immunosuppressive regimen should be carefully prescribed. Total switch from cyclosporin and prednisolone to azathioprine and prednisolone can increase the chance of acute rejection and may be hazardous. Addition of azathioprine (or cyclophosphamide) to the cyclosporin-prednisolone regimen is an appropriate prescription. The cyclosporin level should be kept in the lower range of therapeutic window to avoid overimmunosuppression. This practice will result in slightly reduction of cyclosporin dosage.

In the presence of high titer of RBC antibodies, hemolysis may be fatal. Further attempt to reduce antibodies may be managed by graft irradiation[3], plasma exchange[4], or graft removal. This aggressive management should be considered in the event of fulminating hemolytic crisis. The later may be found in transplantation of lymphoid rich solid organ such as spleen and liver transplantation.

The differential diagnosis of ABO minor mismatch associated hemolytic anemia includes other possibilities of recipient RBC antibodies such as ABO unmatched blood transfusion and the use of antilymphocyte globulin. Other causes of hemolytic anemia associated with cyclosporin should be aware. These include cyclosporin induced Coombs' positive hemolytic anemia[5] and cyclosporin induced hemolytic uremic syndrome[6]. Once, the diagnosis of ABO minor mismatch associated hemolytic anemia is suspected, identification of RBC antibodies should be done for a definite diagnosis. The physician should be aware that transfusion of RBC of recipient type may aggravate further hemolysis. If blood transfusion is required, RBC of donor type should be used.

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