Systemic lupus erythematosus in a patient with beta-thalassemia major

Sirs,

Systemic lupus erythematosus (SLE) is an autoimmune disease while beta-thalassemias are common hereditary disorders which result in reduced or absent beta-globin chain synthesis. Although the coexistence of sickle cell disease and SLE has been described (1), we report the first occurrence of SLE and beta-thalassemia major in a single patient.

Physical examination revealed moderate hepatomegaly, arthritis of the knees and wrists, and icteric conjunctiva. Laboratory results showed Hb 7.4 g/dl, erythrocyte sedimentation rate: 131 mm/hr, creatinine 2.2 mg/dl, urea 99 mg/dl, total bilirubin 3.1 mg/dl (direct 0.74 mg/dl), and direct Coombs positive. Twenty-four hour urine protein was 648 mg. The immunologic evaluation showed positive antinuclear antibodies (ANA) (titre: 1/420, homogenous pattern), positive anti-dsDNA antibodies: 79 IU/ml (negative < 10 IU/ml), C3: 75 mg/dl (range 79-181 mg/dl), and C4: 5 mg/dl (range 16-64 mg/dl). Transfusions of red packed cells and hydration were administered. Renal biopsy showed membranous glomerulonephritis type II. Thus, SLE was diagnosed according to the American College of Rheumatology revised criteria (4).

The patient was treated with methylprednisolone (60 mg/day) followed by tapering and remission 6 months later. In addition, lymphocytosis characteristic revealed a low CD3+,CD4+,CD8+ ratio of 0.71 and the HLA typing was 2A, 30B, B14, B18, CW2, CW8, DR1, DR16, DQ5 and DQ51. In November 2004, the patient had normal renal function and no arthritis. The Coombs test was negative, C3 and C4 had returned to normal while anti-dsDNA and ANA remained positive.

Current treatment includes small doses of steroids, folate acid, calcium and vitamin D supplementation.

The coexistence of SLE and beta-thalassemia is extremely rare. To date, only two cases of sickle cell/beta-thalassemia with SLE have been described (2, 3). In addition, SLE patients with beta-thalassemia trait have been reported (5), while osteonecrosis in a patient with hemoglobin E/b-thalassemia has been recently published (6). At the best of our knowledge this is the first report of the coexistence of SLE and beta-thalassemia major.

The relationship between the two diseases remains unclear. Genetic factors may contribute to their pathogenesis. Our patient had gene mutation resulting in abnormal beta-globin chain synthesis and HLA typing: B18, DR16 that have been associated with lupus. Furthermore, multiple transfusions may alter the immunologic response of thalassemia patients. Experimental transfusion of plasma containing alloantibodies has been shown to lead to autoantibody formation. Therefore, the immune status of the patient as well as the effect of multiple allo gene blood transfusion can induce antibody formation.

Antithusin antibody formation can result from the continuous stimulation of the immune system. Autoantibody production has been described in thalassemia patients (7) with variable clinical significance. They may exhibit the characteristics of natural autoantibodies or, under unclear circumstances, they may become the pathogenic autoantibodies that are found in SLE. It is known that T cell subsets play a pivotal role in the pathogenesis of SLE. On the other hand, T lymphocytes from thalassemic patients are activated in vivo and they present several abnormalities. Thus, the lymphocyte background in thalassemic patients may under the influence of a triggering factor contribute to the development of SLE. Our patient had a low CD4+/CD8+ ratio, which has been described in lupus nephritis patients (8). In addition, desferrioxamine, which modifies T-cell-mediated immune responses, may also play a role in SLE expression (9, 10).

In conclusion, we described a patient with beta-thalassemia major and SLE. Further studies will clarify whether the association of these two diseases is real or if it constitutes an occasional coexistence.

References