Uric Acid Handling, Pregnancy and Ciclosporin in Renal Transplant Women

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Dear Sir,

Pregnant renal transplant women under azathioprine immunosuppression show a normal physiologic increment in uric acid clearance [1]. Because ciclosporin can induce hyperuricemia [2], contrary the effect of pregnancy on uric acid handling, we studied the changes on urate clearance in our pregnant transplant women.

Seven pregnancies in 6 women (X age 30 years, range 21–36) were studied. All had received kidney grafts from cadaveric donors between 7 and 27 months before. Previous creatinine clearance was 76.6 ml/min (X, range 60.8–90). Four women with 5 pregnancies, were on ciclosporin with a dose of 4.3 mg/kg daily (X), and the other 2 received azathioprine with a dose of 1.5 mg/kg daily (X). Also, all were taking prednisone 10 mg daily (X). In 3 women, 2 under ciclosporin and 1 under azathioprine treatment, therapeutic abortions were performed because of pregnancies in the early posttransplant period, severe liver disease and hereditary disease. At the 6th month of pregnancy, 1 women treated with ciclosporin with previous arterial hypertension suffered fetal death. The remaining pregnancies were uncomplicated, and 4 babies, 1 pair of twins in a ciclosporin patient [3], were delivered. In all patients in the first trimester, an increase in creatinine clearance to 106 ml/min (X, range 68–175) was observed. Changes in uric acid handling are showed in figure 1. Urate clearance increased only in 4 cases, in the 2 women treated with azathioprine and in the single patient under ciclosporin immunosuppression, with two pregnancies. By contrast, the other 3 ciclosporin patients failed to improve urate clearance in spite of renal function improvement: previous creatinine clearance was 65.8 ml/min (X, range 60.8–71), and in the 2nd month of pregnancy it was 80 ml/min (X, range 79–93). While the first ciclosporin patient never suffered nephrotoxicity, the other patients showed frequent episodes of ciclo-

Fig. 1. Uric acid handling in our renal transplant patients.

■ = Azathioprine patients; ○ = ciclosporin patients; □ = fetal death; ▨ = abortion; PP = postpartum. a Uric acid concentration.

b Uric acid clearance.

sporin-induced transient renal disfunction. So, after pregnancy these 3 patients were switched to azathioprine immunosuppression.

Our results indicate that, as in normal women, in pregnant renal transplant patients renal function improves irrespective of immunosuppressive therapy. Moreover, pregnant women treated with ciclosporin could exhibit two different patterns of uric acid handling.

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So, in some ciclosporin patients, uric acid clearance increased. They could represent a group of patients without nephrotoxicity or hyperuricemia induced by ciclosporine. By contrast, other ciclosporin patients did not show any increment of uric acid clearance in spite of renal function improvement. Possibly, this phenomenon could be indicative of ciclosporin toxicity influencing uric acid handling, because it antagonizes the expected increase in urate clearance induced by pregnancy. So, in some women immunosuppressed by ciclosporin, the presence of hyperuricemia in the last trimester, in the absence of proteinuria and arterial hypertension, could not be a marker of preeclampsia but only an expression of ciclosporin renal tubular toxicity. In this way, the presence of hyperuricemia in the first trimester in women under ciclosporin treatment could predict early that this parameter would not be a useful marker of preeclampsia.

References

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