Acute Renal Failure due to Rifampicin Treatment

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Dear Sir,

In patients treated with rifampicin, acute renal failure may occur following influenzalike symptoms. Typical symptoms in these patients are chills, fever, lumbar pain, oligoanuria and hematuria. Serious side effects of rifampicin occur especially in patients on intermittent tuberculous therapy and irregular use of rifampicin [1-5]. We report 5 patients who developed acute renal failure following rifampicin intake.

Case 1: Male, 54 years old, treatment with antituberculous drugs was initiated because of pulmonary tuberculosis. Three months later the therapy was ceased by himself. On feeling worse after 2 months without therapy, he again started to use rifampicin on his own accord. After 2 h of 300 mg rifampicin intake he had chills, fever, nausea and vomiting. He was admitted to our hospital for 60 h of oligoanuria. On the fifth day 48-hour peritoneal dialysis therapy was performed because of acidosis. Polyuria was started on the 10th day and normal renal functions were achieved 8 weeks later.

Case 2: Male, 19 years old, antituberculous therapy was started for pulmonary tuberculosis. At the end of the second month, intermittent therapy was initiated. In the 3rd week of the intermittent therapy he had complained of dizziness and nausea 20 min after taking the antituberculous drugs. He was admitted to the hospital, providing the emergency conditions 300 mg single dose of rifampicin were given orally and after 15 min nausea, vomiting, facial edema, fever, dyspnea and hypotension occurred. Parenteral adrenaline, corticosteroids and antihistaminics were administered immediately and in 20-25 min the symptoms stabilized.

Thirty-six hours

of oliguria developed with acute impairment of renal function, polyuria started on the 4th day and 2 weeks later the renal function normalized without dialysis.

Case 3: A 48-year-old woman who was taking antituberculous therapy because of miliary tuberculosis was admitted to the hospital in the second month of the intermittent therapy period for chills, fever, nausea, vomiting and lumbar pain a few hours after the intake of the drugs. The acute impairment of renal function without any oliguric state followed a full recovery in 3 weeks.

Case 4: A 58-year-old male patient was admitted to the hospital because of fever, nausea and vomiting 30 min after the intake of antituberculous drugs on the first day of therapy. He had pulmonary tuberculosis recognized 8 years ago and antituberculous therapy was initiated for reactivation of pulmonary tuberculosis. He was oliguric and severe acute renal failure developed and required dialysis because of hyperkalemia. After 8 days of oliguria, diuresis was observed and restoration of normal renal function took place in 4 weeks.

Case 5: A 42-year-old male patient was on the first month of intermittent tuberculous therapy and developed influenza-like symptoms an hour after the use of the drugs. Laboratory data revealed an acute impairment of renal function without an oliguric phase. Recovery of renal function took place after 5 days and became normal on the 16th day.

The laboratory tests for liver function, glucose, lipids, serum electrolytes, LDH, and complement were within the normal limits in all patients. Coagulation was normal and antinuclear antibodies, cryoglobulins, HBs

Table 1. Clinical details of the patients

Cases	Age/sex	Plasma Cr mg/dl	BUN mg/dl	Urine volume 24 h/ml	Dialysis treatment time	Recovery days
140	+	54				
360		18				
700	-	22				
230	+	26				
1150		16				

Ag, and Coomb's test were negative. Hematologic parameters were normal except for slightly increased WBC count in all patients. High levels of plasma creatinine and BUN were observed (table 1) and uric acid levels were increased in all patients. Urinary examinations showed mild or moderate protein-uria and red and white blood cells with tubular cell casts. Renal ultrasound studies of the patients were normal. Renal tissue was obtained from 2 patients (cases 1 and 4). Histo-pathologic examination showed consistent findings of interstitial nephritis and tubular necrosis without any evidence of vascular or glomerular pathology.

We were not able to perform the tests for anti-rifampicin antibodies, but the low dose drug history, flu-like symptoms and clinical findings support the diagnosis of rifampicin-induced acute renal failure of immunoallergic mechanism [4]. The adverse effects of rifampicin occur especially in patients on intermittent tuberculous therapy or irregular use of the drug as in our patients. Do we have to leave out the intermittent therapy regimen? Of the 4,800 patients who were given intermittent tuberculous therapy, we saw acute renal failure in only 5 (0.1%) since 1978 and all showed recovery of renal function without any complication after discontinuation of the drug and therapy of acute renal failure. As rifampicin is still one of the most effective drugs in tuberculous infections, we conclude that an intermittent therapy regimen should not be given up considering the cost benefits, rarity and reversible nature of rifampicin-induced acute renal failure.

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