Acute Renal Failure and Rhabdomyolysis following Cocaine Abuse

F.		Ahijado
S.G.	Garcia	de Vinuesa
J.		Luño

Servicio de Nefrología, Hospital General 'Gregorio Marañón', Madrid, Spain

F. Ahijado, Servicio de Nefrología, Hospital General Gregorio Marañón, Dr. Esquerdo, 46, E-28007 Madrid (Spain)

Dear Sir,

Nontraumatic rhabdomyolysis is a well-recognized cause of acute renal failure since the report by Grossman et al. [1] 14 years ago. Reported causes for rhabdomyolysis at present are diverse, alcoholism and drug abuse being the most commonly identified [2].

In the last years, acute renal failure associated to rhabdomyolysis has increasingly been reported in relation to cocaine abuse [3–9]. The recent paper by Singhal et al. [9] regarding myoglobinuric acute renal failure following cocaine intoxication has aroused our interest. Neither hepatic damage nor disseminated intravascular coagulation (DIC) has been observed by Dr. Singhal and colleagues, with a good outcome and total recovery of renal function in all of their 3 patients, which is in contrast to previous observations reported by Roth et al. [6]. Six out of 13 patients with cocaine-related acute renal failure and rhabdomyolysis in the series of Roth et al. died. All of them had severe hepatic dysfunction and developed DIC. The patients who survived showed impaired renal function at discharge.

We have studied 8 patients admitted to our hospital with renal failure and rhabdomyolysis following drug abuse: cocaine in 3 and heroin in 5 patients. We were not able to demonstrate hepatic damage in any of our patients and DIC developed only in 1 patient with a heroin overdose. Renal function was more depressed in heroin abusers (4 of them requiring dialysis; with a larger increase in serum creatinine levels; 8.2 ± 1.85 mg/dl) than in cocaine abusers (3.6 ± 11.47 mg/dl). Not surprisingly, rhabdomyolysis was also more severe in the heroin as compared to cocaine group: the mean highest serum creatine kinase levels being $69,720 \pm 22,390$ U/l versus $26,000 \pm 11,270$ U/l. However, no difference was seen in the outcome between both groups: no one of our patients died and total recovery of renal function at discharge was observed in all of them.

In summary our experience is certainly similar to that reported by Singhal et al. and others [7]. Although more experience is required, these data suggest that cocaine abuse is not an additional risk factor in the severity and prognosis of renal failure due to rhabdomyolysis and that it would depend principally of the extension in the muscle injured area.

References

- Grossman RA, Hamilton RW, Morse BM, Penn AS, Goldberg M: Nontraumatic rhabdomyolysis and acute renal failure. N Engl J Med 1974;291:807–811.
- Gabow PA, Kaehny WD, Kelleher SP: The spectrum of rhabdomyolysis. Medicine 1982;61:141–152.

Merigian KS, Roberts JR: Cocaine intoxication: hyperpyrexia, rhabdomyolysis and acute renal failure. *J Clin Toxicol* 1987;25:135–148.

Krohn KD, Slowan-Kovacs S, Leapman SB: Cocaine and rhabdomyolysis. *Ann Intern Med* 1988;108:639–640.

Barrido DT, Joseph AJ, Rao TKS, Friedman EA: Renal disease associated with acute and chronic 'crack' abuse (abstract). *Kidney Int* 1988;33:181.

Roth D, Alarcon FJ, Fernandez JA, Preston RA, Bourgoigne JJ: Acute rhabdomyolysis associated with cocaine intoxication. *N Engl J Med* 1989;319:673–677.

Kothur R, Posner GL: Acute rhabdomyolysis associated with cocaine intoxication (letter). *N Engl J Med* 1989;320:667.

Herlich BC, Arsura EL, Pagala M, Grob D: Rhabdomyolysis related to cocaine abuse. *Ann Intern Med* 1988; 109:335–336.

Singhal P, Horowitz B, Quinones MC, Sommer M, Faulkner M, Grosser M: Acute renal failure following cocaine abuse. *Nephron* 1989;52:76–78.