Nephrotoxicity of Low Osmolar Radiocontrast Agents in Patients with Chronic Renal Failure

P.		Cacoub
G.		Deray
A.		Baumelou
C.		Jacobs

Department of Nephrology, Hôpital Pitié-Salpêtrière, Paris, France

Dr. P. Cacoub, Department of Nephrology, Hôpital Pitié-Salpêtrière, 47-83, boulevard de l'Hôpital, F-75651 Paris Cédex 13 (France)

Dear Sir,

Acute renal failure has long been recognized as a potential hazard of radiocontrast administration, especially in patients with preexisting renal failure [1]. Recently developed low osmolar agents have been considered less nephrotoxic, but some studies indicate that these agents can also cause renal damage [2]. However, these studies did not compare the various renal toxicities between low and high osmolar radiocontrast media.

We retrospectively studied 26 patients with mild to severe chronic renal failure (creatinine clearance 20–70 ml/min) who were given an intravascular contrast agent. Acute deterioration of renal function (ADRF) was defined as an increase of at least 20% in the baseline serum creatinine concentration, 1–5 days after injection of the contrast agent. Patients were divided into two groups according to the type of administered radiocontrast: group A (n = 14) received ioxaglate (Hexabrix®), group B (n = 12) ioxitalamate (Telebrix®). The two groups were matched for, age, sex, weight, size, hydration status (appreciated on clinical features, hematocrit, plasma protein) serum creatinine, urea nitrogen, blood bicarbonate and glucose concentration, urine volume and urinary sodium excretion. Doses of iodine were 19 g for patients of group A and 38 g for those of group B. Evolution of renal function following radiocontrast injection is summarized in table 1: 35% of the patient (9/26) developed an ADRF following injection of radiocontrast material. Fifty percent (7/14) of the patients who received ioxaglate and 17% (2/12) of those who received ioxitalamate

Table I. Evolution of renal function following radiocontrast injection

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developed an ADRF. From these data it can be concluded that low osmolar radiocontrast agents do not seem to have eliminated the risk of nephrotoxicity and that the incidence of ADRF is at least comparable to the one induced by high osmolar agents. Interestingly, 5/7 patients in whom ioxaglate was injected into the renal artery developed ADRF. Animal studies have shown a less pronounced renal vasoconstriction with low osmolar radiocontrast agents [3]. We suggest that

these experimental results might not be relevant in man and do not preclude for the potential nephrotoxicity of such contrast media.

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