Acetylcysteine Protects Against Acute Renal Damage in Patients with Abnormal Renal Function Undergoing a Coronary Procedure.

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摘要

Abstract

OBJECTIVES: We sought to evaluate the efficacy of the antioxidant acetylcysteine in limiting the nephrotoxicity after coronary procedures. BACKGROUND: The increasingly frequent use of contrast-enhanced imaging for diagnosis or intervention in patients with coronary artery disease has generated concern about the avoidance of contrast-induced nephrotoxicity (CIN). Reactive oxygen species have been shown to cause CIN. METHODS: We prospectively studied 121 patients with chronic renal insufficiency (mean [+/-SD] serum creatinine concentration 2.8 +/- 0.8 mg/dl) who underwent a coronary procedure. Patients were randomly assigned to receive either acetylcysteine (400 mg orally twice daily) and 0.45% saline intravenously, before and after injection of the contrast agent, or placebo and 0.45% saline. Serum creatinine and blood urea nitrogen were measured before, 48 h and 7 days after the coronary procedure. RESULTS: Seventeen (14%) of the 121 patients had an increase in their serum creatinine concentration of at least 0.5 mg/dl at 48 h after administration of the contrast agent: 2 (3.3%) of the 60 patients in the acetylcysteine group and 15 (24.6%) of the 61 patients in the control group ($p < 0.001$). In the acetylcysteine group, the mean serum creatinine concentration decreased significantly from 2.8 +/- 0.8 to 2.5 +/- 1.0 mg/dl ($p < 0.01$) at 48 h after injection of the contrast medium, whereas in the control group, the mean serum creatinine concentration increased significantly from 2.8 +/- 0.8 to 3.1 +/- 1.0 mg/dl ($p < 0.01$). CONCLUSIONS: Prophylactic oral administration of the antioxidant acetylcysteine, along with hydration, reduces the acute renal damage induced by a contrast agent in patients with chronic renal insufficiency undergoing a coronary procedure.

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