Effect Of Statins In Contrast-induced Nephropathy After Coronary Angiography

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Background: Contrast-induced nephropathy (CIN) is a frequent complication after coronary angiography. In the exclusion of saline hydration, the effectiveness of other means of prevention remains unclear, and almost poor. Thanks to its pleotropic effects, statins have been used in CIN prevention, but data remains controversial.

Objective: To evaluate the benefit of statins in the prevention of CIN after coronary angiography.

Methods: We used the database of a randomized controlled trial conducted in the Cardiology B department of Monastir’s Hospital during the period March to November 2010 to study the effectiveness of ascorbic acid in the prevention of CIN. Patients undergoing coronary angiography were randomly assigned to a saline hydration prevention protocol or a saline hydration associated to ascorbic acid protocol. The primary endpoint was the occurrence of CIN defined as a creatinin arise of more than 25% the baseline level during the following 48 to 72 hours. The relationship between statin intake at baseline and CIN incidence was retrospectively evaluated using a Chi-square test.

Results: Among the 202 patients included, 126 (62.3%) were treated with statins. There was no significant difference between the two groups concerning the baseline characteristics, particularly in ascorbic acid treatment (p=0.94). CIN incidence dropped from 20.8% in the patients not taking statins to 11.7% in those treated with statins. This resulted in a tendency (p=0.08) but difference wasn’t statistically significant, probably due to the small sample of the population.

Conclusion: In our study, treatment with statins led to a trend to reduce CIN incidence. The small sample of the population couldn’t allow stronger conclusion. Statins seem to be promising but larger trials are needed.

Prevention Of Contrast Induced Nephropathy In Patients Undergoing Coronarography With Ascorbic Acid

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Background: Contrast induced nephropathy (CIN) is an increasing problem in cardiology invasive imaging, limited by the absence of treatment and few prevention methods. Anti oxidant benefits of ascorbic acid have been reported by small series but evidence remains poor.

Aim: To evaluate the effect of ascorbic acid administration in CIN occurrence in patients undergoing coronaryography.

Methods: Patients undergoing coronaryography between March and November 2010 were prospectively and blindly randomized to control group receiving a standard CIN prevention protocol or a saline hydration protocol associated to ascorbic acid (3g 2 hours before the procedure then 2g the day after and next day). We excluded patients requiring hemodialysis, those with acute renal insufficiency, with cardiac failure with LVEF ≤ 40%, digestive resections, and previous contrast procedures. Previous contrast medium injection and aspirin or aspiric acid intake. Endpoint was occurrence of CIN defined as a 25% raise of creatinine level 48 to 72 h after coronaryography.

Results: Two hundred two patients were included, 95 in control group and 107 in ascorbic acid group. Mean age was 66 years and 60% were men. Baseline characteristics were similar between the two groups. Creatinin level before intervention was 98.6 ± 29 µmol/L and contrast medium administrated was 71.6 ± 25 ml. CIN occurred in 31 (15.3%) patients. It was significantly lower in ascorbic acid group (10.3% vs 21.1%, p=0.03).

Conclusion: Ascorbic acid showed to reduce CIN incidence in patients undergoing coronaryography compared with saline hydration alone.