

PREVENTION OF CONTRAST-INDUCED NEPHROPATHY WITH QUERCETIN. EVALUATION OF THE ASSOCIATED RISK FACTORS.

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Introduction

The study conducted in our laboratory showed that quercetin improved renal function in patients undergoing cardiac catheterization, who received iodinated contrast media. Specifically, it was observed lower incidence of contrast-induced nephropathy (CIN) in patients who were given quercetin (p.o., 500 mg/three times a day, -24, 24 and 48 h with respect to contrast administration), compared to a group of patients who did not take quercetin but received contrast media.

Objective

Evaluate the protective capacity of quercetin against kidney damage associated with each one of the risk factors (hypertension, diabetes mellitus, dyslipidemia, smoking and volume of contrast media greater than 350 mL).

Methods

Phase II clinical study with patients from the Cardiology Service of the University Hospital of Salamanca, who were given a contrast media (CM).

Patients were divided into two groups, those who only received the contrast media (CM group) and those who in addition to the contrast media were given quercetin (CM + Q group).

The calculation of the relative risk to suffer CIN with each one of the risk factors was made in both groups.

Results

	Group	
	CM group	CM+Q group
Anthropometric characteristics		
Men (%)	77.6	67.3
Women (%)	22.4	32.7
Age (mean±SEM) (minimum-maximum)	71.4±1.1 (39-91)	68.5±1.4 (46-88)
BMI (mean ±SEM)	27.6±0.4	31.8±3.7
Risk factors		
Diabetes mellitus (%)	27.6	31.0
Dyslipidemia (%)	44.0	51.7
Arterial hypertension (%)	56.7	53.4
Smoking (%)	20.1	36.2
Type of contrast agent		
CM administered (%) / Volume (mL) (mean±SEM)		
IODIXANOL	70.1 295.0±15.0	63.8 274.1±18.7
IOHEXOL	22.3 260.0±21.7	25.9 308.4±28.0
IODINE (not specified)	0.8 100.0±0.0	3.5 600.0±0.0
Without data	6.7	5.2

Table 1. Patients of both groups showed very similar anthropometric characteristics, risk factors and contrast media type.

Risk Factor	CM group	CM+Q group
Arterial hypertension	1.19	0.87
Diabetes mellitus	1.15	0.74
Dyslipidemia	0.93	1.56
Smoking	1.17	1.06
Contrast media volume >350 mL	1.83	0.80

Table 2. Relative risk to suffer CIN as a consequence of each of the risk factors considered.

Conclusion

This data suggests that quercetin may reduce the CIN produced by the administration of high CM volume, and does not seem to protect against kidney damage associated with other risk factors. Although more studies are needed, it could be suggested that the use of quercetin would allow to manage larger volumes of CM, in diagnostic or surgical interventions, without increasing the risk of CIN.