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Single Center Randomized Controlled Study for the Evaluation of the Cost Effectiveness of Coronary CT in the Chest Pain Unit – Interim Analysis

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Introduction:

Multiple studies have shown that normal findings on coronary CT angiography (CCTA) have a very high negative predictive value for ruling out acute coronary syndromes. However, CCTA might lead to further unnecessary testing increasing the cost of standard evaluation. The aim of this study was to compare the cost and utilization of diagnostic studies between patients evaluated with and without CCTA in the ER.

Methods:

Patients aged 30-65 years with acute chest pain, ECG and troponins negative for ischemia were randomized to either CCTA versus standard care. Patients with known coronary disease were excluded. CCTA was performed during day time in working days. Patients were followed up for six months.

The primary endpoint is length of stay in the hospital and number of diagnostic procedures during 6 months. Secondary outcome include evaluation costs and number of coronary interventions.

Results:

The study is ongoing and designed to recruit 200 patients. 24 patients were included between October and December 2012. 11 patients underwent CCTA and 13 standard evaluation.

Mean hospital stay was 50 hours for patients who underwent CCTA (group 1) Versus 57 hours for those who underwent standard evaluation (group 2). At one month, the number of procedures performed was 2 for group 1 versus 5 for group 2. In group 1 the two procedures were coronary catheterizations, of which one patient underwent PCI to the RCA. One patient from group 2 underwent coronary bypass graft operation.

Conclusion:

CCTA is safe and shorten the duration of hospital stay for patients evaluated for acute chest pain. However with the small number of patients recruited so far we have failed to demonstrate any difference in number of the diagnostic procedures perfomed, in particular coronary catheterizations.

	CCTA arm (11)	Standard evaluation (13)
Age (years)	54.7	51.9
Gender (male)	7	11
Number of risk factors	3.2	3.1
Number of patients on Aspirin at home	2	3
Aspirin treatment in hospital	8	7
Clopidogrel	4	3
Enoxaparin	4	2
Number of stress tests performed in ER	0	9
Number of catheterizations performed	2	1
Number of revascularization procedures performed	1	1
Total number of procedures performed at one month	2	5