

**Usefulness of Duke criteria for chest pain stratification to select patients undergoing computed coronary tomography Angiography**

*Gutstein, A<sup>1</sup>; Shafir, G<sup>2</sup>; Mats, I<sup>2</sup>; Battler, A<sup>2</sup>; Zafrir, N<sup>2</sup>*

*<sup>1</sup>Rabin Medical Center -, Holon, Israel; <sup>2</sup>Rabin Medical Center, Petach Tikva, Israel*

Background: Duke criteria of chest pain is a useful tool to assess pretest likelihood of obstructive coronary disease during invasive angiography. However its correlation with computed coronary tomography angiography(CCTA) is unknown and may be helpful in patients selection for CCTA.

Objective: To assess correlation between Duke criteria and atherosclerotic burden on CCTA in a consecutive population hospitalized for chest pain.

Methods: One hundred fifty five patients without known coronary disease hospitalized with chest pain underwent CCTA. Duke pretest probability was calculated taking into account risk factors and the 3 chest pain categories as well as age and gender. The 3 categories of pre-test likelihood were defined as : low (<33.3%), intermediate (33.3%-66.6%) and high (>66.6%). CCTA findings were classified as normal (no atherosclerosis detected), non obstructive ( plaque with 0-50% luminal stenosis),and obstructive (>50% luminal stenosis).

Results: 88(56.8%) were male, aged 52.7±10.9 years, with a median coronary calcium score of 1 (0.0 to 5.3) and the mean Duke pretest likelihood was 29.0% (95% CI: 25.2 to 33.3%). According to Duke criteria, 79 patients (51.3%) were at low risk, 49(31.8%) at intermediate risk and 26(16.9%) at high risk. Normal , non obstructive and obstructive coronary disease were present in 50(63.3%), 21(26.6%) 8(10.1%) of the low risk group , in 18(36.7%), 15(30.6%) 16(32.7%) of the intermediate group and in 4(15.4%) , 12(46.2%) , 10(36.5%) of high risk patients (p=0.004 between 3 groups , p=0.13 between intermediate and high risk groups).

Conclusions: Duke criteria is especially useful and correct to recognize low risk patients: about 10% of them will have obstructive disease and will likely undergo invasive coronarography whereas another quarter will benefit from aggressive primary prevention for non obstructive coronary disease. In both the intermediate and the high pretest group, about one third will have obstructive disease.