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Assessment of Significance of Attenuation Correction in Myocardial Perfusion SPECT on Visual Analysis

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Purpose:
To assess the significance of attenuation correction on sensitivity, specificity and diagnostic accuracy of myocardial perfusion SPECT.

Methods:
102 patients referred for MPI were divided into two groups; 42 patients (mean age: 54.6 ± 12.6) were enrolled in the group A, who had undergone coronay artery angiography, within three months of the scan. 60 patients (mean age: 49.79 ±11.3) were placed in the group B who had a <15 % pretest likelihood of CAD. Both non-corrected (NC) and attenuation corrected (AC) images were visually analyzed according to 17- segment model of the left ventricular cavity. Visual assessment derived sensitivity, specificity and diagnostic accuracy of NC and AC sets of images was compared using McNemar test.

Results:
Sensitivity, specificity and diagnostic accuracy for detection of coronary artery disease was found to be 100%, 11% and 79% respectively for NC images and 66%, 78% and 68% for AC images. The p value was found to be significant in only the RCA territory. Normalcy rates in the group B population were 19% for NC image set and 74% for the AC image set. No significant difference on basis of BMI was observed in either gender.

Conclusion:
This study demonstrates that CT based attenuation corrected Tc-99mm sestamibi SPECT myocardial perfusion imaging demonstrate significant improvement in specificity in the RCA territory compared with non attenuation corrected Tc-99mm sestamibi SPECT myocardial perfusion imaging in both genders irrespective of BMI.

Country or International Organization

Pakistan

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