

Background: numerous invasive and noninvasive diagnostic tests with different cost and effectiveness exist for the detection of coronary artery disease. This diversity leads to unnecessary utilization of health services. This study focused on the cost effectiveness analysis of diagnostic strategies for coronary artery disease from the perspective of the health care system with one-year time horizon.

Methods: In this study to carry out the cost effectiveness, cost utility and sensitivity analysis, a decision tree model was conducted which compare nine strategies for the diagnosis coronary artery disease. For cost effectiveness analysis in order to have an approximately real result, cost information is obtained from patients' records in two Iranian hospitals and effectiveness is measured by the number of cases who are correctly diagnosed and for cost utility cost information is obtained from patients' records in two Iranian hospitals and utility is obtained from other study.

Results:

In cost effectiveness analysis ICER of all strategies are less than the threshold except for the ECG-CTA-CA strategy, and in cost utility analysis ICER of all strategies are less than the threshold. cost of the C MRI based strategy is higher than the cost of all strategies. Also, QALY and the number of correct diagnosis in the ECG-CA strategy is higher than the other strategies, its incremental cost effectiveness ratio(ICER) is 15.197 dollars per additional correct diagnosis and 87.65 dollar per QALY. Moreover, the sensitivity analysis found that the probability of MRI and sensitivity of the EX-ECG and time horizon had impact on the results.

Conclusion: the most cost effective strategy for acute patient is ECG-CA strategy and for chronic patient, are ECG-SPECT-CA and ECG-EX ECG-CA strategies. Applying these strategies to patient in the same clinical setting may lead to a better utilization of resources.

Keywords: Coronary Artery Disease, Diagnostic tests, Diagnostic Strategies, Cost Effectiveness Analysis, Sensitivity Analysis.



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