Summary

Cost-Effectiveness of Exercise ²⁰¹Tl Myocardial SPECT in Patients with Chest Pain Assessed by Decision-Tree Analysis

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To evaluate the potential cost-effectiveness of exercise 201 Tl myocardial SPECT in outpatients with angina-like chest pain, we developed a decision-tree model which comprises three 1000-patient groups, i.e., a coronary arteriography (CAG) group, a followup group, and a SPECT group, and total cost and cardiac events, including cardiac deaths, were calculated. Variables used for the decision-tree analysis were obtained from references and the data available at our hospital. The sensitivity and specificity of 201 Tl SPECT for diagnosing angina pectoris, and its prevalence were assumed to be 95%, 85%, and 33%, respectively. The mean costs were 84.9 × 10⁴ yen/patient in the CAG group, 30.2 × 10⁴ yen/patient in the followup group, and 71.0×10^4 yen/patient in the SPECT group. The numbers of cardiac events and cardiac deaths were 56 and 15, respectively in the CAG group, 264 and 81 in the follow-up group, and 65 and 17 in the SPECT group. SPECT increases cardiac events and cardiac deaths by 0.9% and 0.2%, but it reduces the number of CAG studies by 50.3%, and saves 13.8 $\times 10^4$ yen/patient, as compared to the CAG group. In conclusion, the exercise 201 Tl myocardial SPECT strategy for patients with chest pain has the potential to reduce health care costs in Japan.

Key words: Decision tree analysis, Cost-effectiveness, ²⁰¹Tl, Myocardial SPECT, Chest pain.