

## Simulation study of triple-energy-window scatter correction in combined Tl-201, Tc-99m SPECT

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In a quantitative SPECT study with multiple radionuclides, it is very important to eliminate the counts of scattered photons from planar images. In this paper, the triple energy window (TEW) method, which has developed to eliminate the counts of scatter photons in measured counts, was applied to a multiradionuclide SPECT study and its effect was examined in a simulation study. In the simulation, we used Tc-99m and Tl-201, and we assumed their photopeak energies to be 141 and 73 keV, respectively. For two different activity distributions in a cylinder phantom, simulation tests with Tl-201 and Tc-99m gave good agreement between the activity distributions reconstructed from primary photons and those from corrected data. The contrast of a cold spot area in images with and without correction improved around 70% to more than 96%.

**Key words:** scatter correction, single photon emission CT, multiradionuclide study