

Improved accuracy in estimation of left ventricular function parameters from QGS software with Tc-99m tetrofosmin gated-SPECT: a multivariate analysis

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The purpose of this study was to verify whether the accuracy of left ventricular parameters related to left ventricular function from gated-SPECT improved or not, using multivariate analysis. **Methods:** Ninety-six patients with cardiovascular diseases were studied. Gated-SPECT with the QGS software and left ventriculography (LVG) were performed to obtain left ventricular ejection fraction (LVEF), end-diastolic volume (EDV) and end-systolic volume (ESV). Then, multivariate analyses were performed to determine empirical formulas for predicting these parameters. The calculated values of left ventricular parameters were compared with those obtained directly from the QGS software and LVG. **Results:** Multivariate analyses were able to improve accuracy in estimation of LVEF, EDV and ESV. Statistically significant improvement was seen in LVEF (from $r = 0.6965$ to $r = 0.8093$, $p < 0.05$). Although not statistically significant, improvements in correlation coefficients were seen in EDV (from $r = 0.7199$ to $r = 0.7595$, $p = 0.2750$) and ESV (from $r = 0.5694$ to $r = 0.5871$, $p = 0.4281$). **Conclusion:** The empirical equations with multivariate analysis improved the accuracy in estimating LVEF from gated-SPECT with the QGS software.

Key words: QGS, Tc-99m tetrofosmin, multivariate analysis, ejection fraction