

Summary

Clinical Application of Left Ventricular Volume and Ejection Fraction Derived from Gated SPECT Data

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Left ventricular (LV) volume and ejection fraction (LVEF) derived from ECG-gated myocardial SPECT data are reproducible and objective. Those quantitative values, however, interacted according to varied factors such as a frame number per R-R interval, tracers, and processing-algorithms. A decrease of frame number per R-R interval yields underestimation of end-diastolic volume and overestimation of end-systolic volume, resulting in underestimation of LVEF. Thus, it is important to change a frame number per R-R interval by the examination purpose. A good correlation of LVEF is usually obtained, independent of a

combination of tracer and processing-algorithm. On the other hand, LV volume does not always show linearity between combinations of tracer and processing-algorithm. An extraction of myocardial edge using QGS program is deteriorating in patients with small LV below 20 ml. It is crucial to assess LV functional values derived from ECG-gated SPECT data as clinical indices, taking the varied effects into consideration.

Key words: Gated SPECT, Left ventricular volume, Ejection fraction, Small heart.