

EL9. Clinical Experience with the Capintec-VEST for Ambulatory Cardiac Function Assessment

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Cardiac function assessment is traditionally performed using an ECG gated gamma camera and computer system. Although some forms of stress testing are possible, the size and configuration of the gamma camera restricts its use to the laboratory setting. With the Capintec-Vest (C-Vest) or similar device, which is comprised of a small gamma counter held in position to view the left ventricle by a semi-rigid plastic garment, and a portable ECG device, similar to a Holter monitor, continuous non-invasive monitoring of the cardiac blood pool may be accomplished, for up to six or more hours, while the patient carries out normal activities of daily living. Data is recorded on cassette tape which is analyzed by computer, at the conclusion of the study. Various cardiac function parameters, such as left ventricular ejection fraction, relative end diastolic and systolic volumes, stroke volume, relative cardiac output, and filling and emptying rates etc., may be displayed and correlated with ECG findings of ST depres-

sion, arrhythmias, etc., and with patient symptoms, interventions, and activities. Close correlation of C-Vest derived E.F.s and gamma camera results have been reported. A patient log book permits recording of the patient's activities, so that cardiac response during ambulation or sleep may be monitored, providing a more realistic assessment of functional status than during structured stress tests. An important finding is the prevalence of asymptomatic E.F. abnormalities, which may or may not correlate with ECG changes. Silent ischemia has significant prognostic implications. The C-Vest has been used in conjunction with a variety of non-traditional provocations, including the monitoring of cardiac function during mental stress, exposure to cold, positive pressure breathing, etc. This presentation will outline the technical aspects of the device, and review clinical studies from our institution, and other published reports.