

Non-Invasive Assessment of Drug Effects on the Cardiovascular System

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The assessment of cardiovascular effects by a new clinically untested drug can be made in vast majority of subjects with a careful history and physical examination, followed by selected confirmatory and quantitative noninvasive and invasive techniques.

The measurements of heart rate (electrocardiographic monitoring) and blood pressure (indirect method with sphygmomanometry and cuff system) form the basis of screening the effects of compounds in man for cardiovascular activity and for the safety reasons.

Noninvasive assessments of cardiovascular functions are attractive when assessing whether a new untested chemical entity affects the activity of the heart. Electrocardiogram, pulse tracing, echocardiogram with or without Doppler studies, radionuclide angiogram, etc. produce little discomfort for the subject and repeated measurements can be made over a period of time after dosing. However, these methods need equipments with sophisticated technology, well trained personnel with sufficient experience, and certain critical criteria to allow interpretation of the measurements as sufficiently meaningful to permit decisions about the effects of untested compounds.