

Contrast-induced nephropathy (CIN)

Contrast-induced nephropathy (CIN), is also referred to as contrast-induced acute kidney injury. CIN represents a serious form of renal injury that can arise from the intravascular administration of contrast media utilized in angiographic procedures (eg, coronary angiography, percutaneous coronary intervention). CIN is defined as an absolute (0.5 mg/dL) or relative (>25%) increase in serum creatinine 48 to 72 hours following the exposure to contrast agents compared with baseline serum creatinine values, when alternative explanations for impairment of renal function have been excluded.

Cardiac troponin I (cTnI)

Cardiac troponin I (cTnI) is a cardiac-specific regulatory protein that is involved in controlling the calcium-mediated interaction between actin and myosin. The measurement of cTnI is highly sensitive and specific for identifying cardiac muscle damage, and is accepted as a standard biochemical marker for the diagnosis of myocardial infarction.

Fractional flow reserve (FFR)

Fractional flow reserve (FFR) is the ratio of maximum blood flow in the presence of a stenosis to the maximal blood flow elicited in response to maximal pharmacological vasodilation/hyperemia (eg, in response to adenosine). FFR is a lesion-specific index of stenosis severity that can be calculated via the simultaneous measurement of mean arterial, distal coronary, and central venous pressures.

Glutathione peroxidase

Glutathione peroxidase is a peroxidase found in cells that helps to prevent lipid peroxidation of the cell membrane. The function of glutathione peroxidase is to reduce lipid hydroperoxides to their corresponding alcohols and to reduce free hydrogen peroxide to water.

Instantaneous flow reserve (iFR)

Instantaneous flow reserve (iFR) is an index used to assess the severity of coronary artery stenosis. iFR is calculated by measuring the resting pressure gradient across a coronary lesion during the portion of ventricular diastole when microvascular resistance is low and stable. In contrast to FFR, iFR can be determined without the need to administer vasodilatory/hyperemic agents (eg, adenosine).

Malondialdehyde

Malondialdehyde is a small molecule that is released from larger molecules, such as lipids, during oxidative stress. Measurement of the release of this compound is often used as an index of the degree of free radical oxidative stress to which a cell or organ is being exposed.

Open-label trial

An open-label trial is a type of clinical trial in which both researchers and patients are aware of the treatment/intervention being administered.

Oxidative stress

Oxidative stress in general is the deterioration in normal redox state primarily due to an imbalance between pro-oxidants and antioxidants sufficient to induce modification/damage of macromolecules. This results in the production of peroxides and free radicals that are often toxic to cells via damaging DNA, lipids, and proteins.

Oxygen free radicals

Oxygen free radicals are oxygen groups that have an unpaired electron. These oxygen free radicals are unstable and can react with lipids, proteins, or DNA and RNA, which can result in tissue damage.

Pd:Pa ratio

The Pd:Pa ratio represents the resting distal coronary pressure to aortic pressure ratio, and is an index of the hemodynamic significance of a coronary artery stenosis.

Periprocedural myocardial infarction

Periprocedural myocardial infarction is the development of a myocardial infarction during revascularization procedures, as revascularization procedures that involve direct instrumentation and manipulation of the coronary vasculature (eg, coronary bypass graft surgery) can predispose the myocardium to ischemic events and cause myocardial necrosis.

Pretest probability

Pretest probability is the probability of the presence of a condition (eg, disease) in an individual prior to the diagnostic test.

Sham procedure

A sham procedure is often used as the control/placebo surgery where everything entailing the surgical procedure is performed, except the step that mediates the end outcome. For example, ligation of the left anterior descending (LAD) coronary artery is often utilized in preclinical studies to mimic a myocardial infarction, and the sham surgery mimics every step of the actual surgery, except that the suture used to ligate the LAD coronary artery is simply threaded underneath the vessel and then removed, versus being knotted to occlude the vessel.

Superoxide dismutase

Superoxide dismutase is an antioxidant enzyme that counteracts high levels of superoxide free radicals (O_2^-) by catalyzing the conversion of superoxide into either molecular oxygen (O_2) or hydrogen peroxide (H_2O_2).

T1 mapping

T1 mapping is a noninvasive cardiac magnetic resonance imaging technique that can be performed with or without contrast and is useful in characterizing myocardial tissue properties such as increased extracellular volume in conditions like hypertrophic cardiomyopathy and aortic stenosis. It can also non-invasively detect myocardial fibrosis.

Thiolase

Thiolase is an enzyme that breaks down either fatty acids or ketone bodies into acetyl CoA for the Krebs cycle. In the oxidation of fatty acids, 3-ketoacyl CoA thiolase shortens the fatty acid by two carbons (eg, stearoyl CoA to palmitoyl CoA + acetyl CoA) via releasing acetyl CoA from the fatty acid, whereas in ketone body oxidation, acetoacetyl CoA thiolase breaks down acetoacetyl CoA into two molecules of acetyl CoA.