Cardiac enzymes or cardiac biomarkers are blood tests that are used to detect damage to heart muscle. When heart muscle cells are stressed by lack of oxygen they release substances called cardiac enzymes into the blood stream. Increased levels of these biomarkers tells us that something is wrong with a heart. Troponin I is cardiac specific enzyme and when elevated it means possible myocardial infarct. Normal level of troponin I is < 0.03 ng/mL. Onset of troponin I elevation after myocardial infarct is after 4-6 hours, peak is at 10-12 hours and duration is up to 10-15 days. Creatine kinase is another cardiac enzyme that indicate myocardial damage if elevated. More specifically it is CKMB. There are other creatine kinases like CKMM and CKBB, but those are specific for skeletal muscle and nerve tissue damage. Normal findings for CKMB are 20-200U/L. Creatine kinase start to rise in blood after 3-6 hours after myocardial damage, and stays present in blood up to 12-48 hours. Another cardiac biomarker is myoglobin. This substance is the first to appear in the blood stream after the heart damage. It is already measurable 2 hours after the first symptoms and stays in blood up to 24 hours. Normal findings for myoglobin are <90mcg/L. Lactic acid dehydrogenase LDH is not specific biomarker for the heart muscle damage, because this is an enzyme present in every cell in the body. It is elevated when any tissue is damaged like muscle, kidneys, lungs, pancreas. But when we suspect MI, the high level of LDH still can be used with other cardiac biomarkers in order to confirm that there is a problem with the heart. Normal levels for LDH are 100-190 units/L.

## References


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