Evaluation of Lactate Dehydrogenase Isoenzymes (LDI)

Increased Lactate Dehydrogenase (LDH)

Exclude *in vitro* haemolysis
Perform Isoenzymes (if cause of LDH elevation is unclear)

Elevation of LD1

Myocardial infarction
Red blood cell diseases (e.g. haemolytic anaemia), B12 deficiency (↑ MCV)
In vitro haemolysis
Some muscle dystrophies (e.g. Duchenne muscular dystrophy)
Kidney disease
Kidney transplant rejection
Testicular/Germ cell tumours/rare neuroendocrine tumours
Intense exercise training

Elevation of LD2

Infections
Lung diseases (LD 2 & 3)
Congestive heart failure
Lymphocyte turnover (e.g. lymphomas/EBV) (LD 2 & 3)

Elevation of LD3

Skin (psoriasis)
Lung disease/injury
Lymphocyte turnover (e.g. lymphomas/EBV)
Splenic disorders (infarct)
Platelet destruction

Elevation of LD4

Placenta disorders

Elevation of LD5

Liver diseases: hepatitis, toxins (paracetamol)
Skeletal muscle diseases/injuries
Some intestinal problems
Pleural fluid: neturophils (LD 4 & 5)

Elevation of multiple LDIs

Elevation of LD1, LD2, and LD5 may be caused by strenuous exercise.
Elevation of all the LDIs may be caused by injury to multiple organs (e.g. congestive heart failure, advanced cancers, autoimmune diseases, or shock).

Increases in Midzone Levels

Malignant pattern (crescendo-decrescendo pattern)

Storage

Marked LD4/LD5 decrease occurs if sample stored below room temperature. If liver/skeletal muscle LDI is suspected, a fresh specimen is recommended.

Extra isoenzyme bands

Macrocomplex (usually benign)

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