

The Actual Role of LDH as Tumor Marker, Biochemical and Clinical Aspects

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Abstract

Lactate dehydrogenase (LDH) among many biochemical parameters represents a very valuable enzyme in patients with cancer with possibility for easy routine measurement in many clinical laboratories. Previous studies where mostly based on investigated LDH in serum of patients with cancer with aims to estimate their clinical significance. The new directions in investigation of LDH where based on the principle that tumor cells release intracellular enzymes through damaged cell membrane, that is mostly consequence in intracellular mitochondrial machinery alteration, and apoptosis deregulation. This consideration can be used not only in-vitro assays, but also in respect to clinical characteristics of tumor patients. Based on new techniques of molecular biology it is shown that intracellular characteristics of LDH enzyme are very sensitive indicators of the cellular metabolic state, aerobic or anaerobic direction of glycolysis, activation status and malignant transformation. Using different molecular analyses it is very useful to analyze intracellular LDH activity in different cell line and tumor tissues obtained from patients, not only to understanding complexity in cancer biochemistry but also in early clinical diagnosis. Based on understandings of the LDH altered metabolism, new therapy option is created with aims to blocking certain metabolic pathways and stop tumors growth.

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