

Relationship between LDH and Mg in Monitoring of Hematological and Non-Hematological Malignant Diseases [†]

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Abstract: Magnesium, the second most abundant into-cellular cation after potassium, plays a key role in regulating many cellular functions and enzymes, including ion channels, metabolic cycles, and signaling pathways. Were analyzed a cohort of patients (n = 75) comprising males (n = 36) and females (n = 39) with a mean age of 57 years who had cancer and were admitted to the oncology department. The biochemical parameters were measured running a Vitros 250 dry chemistry analyzer (Johnson & Johnson, USA) using the slides for multi-layer spectro-photometry measurements. In the cohort study, 12 patients (16%) displayed high levels of serum Mg (range = 2.6-3.27 mg/dL; mean value = 2.89 mg/dL). The levels of serum lactic dehydrogenase (LDH) were also evaluated in patients newly diagnosed with cancer and in patients with unfavorable responses to the cancer therapy (range = 240-1330 U/L; mean value = 787 U/L; SD = 1.33; p = 0.002; normal values 135-225 U/L). The serum Mg level was increased via Mg²⁺ release from malignant tissues in patients with malignant diseases before treatment with cytostatic drugs. The LDH levels remained elevated after initial cytostatic treatment until cancer remission. The number of chromosome copies in malignant tumors can be correlated with the total serum LDH values. LDH levels in cancer patients are elevated due to high levels of LDH-3 isoenzyme in patients with malignancies and high levels of LDH-4 and LDH-5 isoenzymes, elevated patients with cancer of liver, muscle, lung, and conjunctive tissues..

Keywords: lactate dehydrogenase enzyme; hematological malignant diseases; magnesium.

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Conflicts of Interest

The authors declare no conflict of interest.