

Glutathione-dependent enzymes as biomarkers of differential breast tumor diagnostics**Ludmila Gavriiliuc**

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Background: In patients with breast cancer the processes of peroxide oxidation of lipids (POL) are increased and many metabolic pathways are disturbed. Glutathione-associated metabolism is a major mechanism for the cellular protection against agents which generate oxidative stress and POL.

Aim: Comparative examination of the activities of the glutathione-dependent enzymes in the blood serum and saliva in the patients with breast cancer (BC) and breast dysghormonal hyperplasiae (BDH).

Material & Methods: Sixty-four patients aged 27-54 years (mean age 40.5 ± 13.5 years) were examined before treatment in comparison with 30 healthy individuals. The activities of glutathione reductase (GR), glutathione S-transferase (GST), gamma-glutamyl transpeptidase (GGT), glucose-6-phosphate dehydrogenase (G6PDH) and content of reduce glutathione (GSH) were determined spectrophotometrically (Diasys Diagnostics) in the blood serum and saliva in the BC and BDH patients.

Results: The levels of the activities of enzymes and Spearman correlative analysis indicated an imbalance of the antioxidant defense system in the blood serum and saliva. The activities of enzymes and content of GSH were significantly increased in the both groups of patients in comparison with healthy control group. In the blood serum and saliva in the BDH patients these results were significantly higher than in BC patients.

Conclusion: The obtained results reflect the interrelation between activity of pathological process and an imbalance of the antioxidant enzymatic system of glutathione in the patients with mammary gland tumors (BC and BDH), and may be used for differential diagnostics, screening and monitoring during treatment as an additional biochemical tests.

Biography

Ludmila Gavriiliuc is a Professor of Biochemistry and Clinical Biochemistry at the Department of Nicolae Testemitanu State University of Medicine and Pharmacy, Chisinau, Moldova. She was graduated from State Medical University, Medico-Biological Department, Russia with specialty in Biochemistry and completed PhD in 1978 and MD in 1997 at the State Medical University, Moscow, Russia. She is the author of 97 scientific and methodic peer-reviewed manuscripts and 6 books. Her areas of scientific interests are clinical-diagnostics, oncology, hematology, stomatology and antioxidant therapy.

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