

A Study of Lactate Dehydrogenase (LDH) Isoenzyme is a Biochemical Tumour Marker in Cervical Carcinoma Patients

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ABSTRACT To establish Lactate dehydrogenase (LDH) isoenzyme is a biochemical tumor marker in cervical carcinoma patients for diagnosis and treatment monitoring of the disease. The Serum and cervical tissue LDH isoenzyme was analyzed qualitatively by Poly Acrylamide Disc Gel Electrophoresis method. The total LDH activity was estimated quantitatively by the method of UV spectrophotometry. 50 untreated cervical carcinoma patients were taken up and compared with age matched healthy females (controls). Out of 50 patients, 5 patients were histologically classified as well differentiated squamous cell carcinoma (Grade-I), 23 were moderately differentiated squamous cell carcinoma (Grade-II) and 22 were poorly differentiated squamous cell carcinoma (Grade-III). Grade-I patients did not show any change, in the serum and cervical tissue LDH isoenzyme fractions compared to the controls but variation in electrophoretic mobility have been observed. Grade-II patients showed two new additional isoenzyme fractions in LDH₂ and LDH₃ locations, where as Grade-III patients showed only three LDH isoenzyme fractions. The total LDH activity in both serum and cervix tissue of normal individuals are 0.458 ± 0.0796 units/ml; and 0.680 ± 0.0218 units/mg. Grade-I patients did not show any change in total LDH activity (serum: 0.384 ± 0.0404 units/ml; cervical tissue: 0.589 ± 0.0292 units/mg; $P < 0.01$). Grade-III patients showed much lower values (serum: 0.284 ± 0.0109 units/ml; cervical tissue: 0.327 ± 0.043 units/mg; $P < 0.001$), where as Grade-II patients showed significant increase in total LDH activity (serum: 0.878 ± 0.0531 units/ml; cervical tissue: 1.296 ± 0.0813 units/mg; $P < 0.001$) respectively. The results suggest that LDH isoenzyme is useful biochemical tumor marker for diagnosis and to assess the grade of malignancy.