

*Thesis Title*                      *Urinary Enzymes and Carcinoembryonic Antigen in Patients with Carcinoma of the Bladder.*

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#### *ABSTRACT*

*Serum and urinary enzymes and carcinoembryonic antigen were evaluated in 25 patients with carcinoma of the bladder. The results were compared with those of 50 normal subjects. A significant elevated activity of urinary alkaline phosphatase, arylsulfatase A, arylsulfatase B,  $\beta$ -glucuronidase, N-acetyl- $\beta$ -D-glucosaminidase, lactate dehydrogenase and carcinoembryonic antigen was found (Mann Whitney U test,  $p < 0.001$ ). No significant changes of urinary  $\gamma$ -glutamyltransferase activity was observed in these patients. Serum alkaline phosphatase and  $\gamma$ -glutamyltransferase were also elevated significantly (Mann Whitney U test,  $p < .001$ ) whereas other serum enzymes and carcinoembryonic antigen were not. In addition, these urinary enzymes and carcinoembryonic antigen were increased in corresponding to the advancement of carcinoma.*