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Comparison of serum antioxidant enzymes status in early and advance stage of breast cancer after five weeks radiotherapy

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Background: Breast cancer is the most common cancer worldwide. For treatment of this disease, physicians used from surgery, radiotherapy (RT) and chemotherapy. Usually RT is used for treatment of cancer after surgery. RT by lean on reactive oxygen species toxicity can affect on antioxidant enzymes. As there are limited data regarding to the effect of RT in various stages of the breast cancer, we aimed to determine the effects of RT on antioxidant enzyme status at early and advanced stages of this disease.

Methods: 45 patients at the early stage of the disease (stage I, II) and 35 patients in advance stage (stage III, IV) were participated in this study. Patients received RT for 5 weeks at dosage of 50Gy with fraction size of 2Gy. A day before the RT and one day after the end of RT, blood samples were obtained. Serum activity of glutathione peroxidase (GPx), levels of catalase (CAT) and superoxide dismutase (SOD) were evaluated by ELISA. Atomic absorption spectrometry was used for analysis of Selenium (Se) concentration. Paired t-test was used for comparing data.

Results: Patients in advanced stages of the disease had higher levels of CAT ($p=0.031$). A higher level, but not significant, was also observed for SOD ($p=0.243$), GPx ($p=0.619$) and Se ($p=0.271$). After RT, decrease in the status of GPX and SOD was significant in both early and advanced stage ($p<0.05$), while a significant decrease was not observed for CAT and Se status in both groups ($p>0.05$). Conclusion: The results showed that RT could change in the status of some antioxidant enzyme in early and advanced stages of breast cancer.

Biography

Hadi Parsian completed his PhD in Clinical Biochemistry from Tabriz University of Medical Sciences, Tabriz, Iran. He has published more than 43 papers in reputed journals and has been serving as an Editorial Board Member of reputed. His major interest of research is Clinical Biochemistry, Tumor Markers and Cancer.

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