

## The interaction between antioxidant status and cervical cancer: a case control study

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### ABSTRACT

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**Aims and background.** To compare the antioxidant status of cervical cancer patients with healthy controls and to assess the antioxidant levels before and after radiotherapy or radiochemotherapy.

**Methods and study design.** Antioxidant levels (glutathione, glutathione peroxidase, superoxide dismutase, and malondialdehyde) were measured in 35 patients with cervical cancer and 35 age-matched healthy controls. Blood samples were collected twice (before and after treatment) from cervical cancer patients and once from healthy control subjects.

**Results.** In the patient group, pre-radiotherapy glutathione and glutathione peroxidase levels were significantly lower ( $P < 0.01$  and  $P < 0.0001$ , respectively) than the control group. Pre-radiotherapy levels of superoxide dismutase were significantly higher in cancer patients ( $P < 0.01$ ). In general, no difference was observed between pre- and post-radiotherapy antioxidant levels in cancer patients. However, when post-radiotherapy glutathione levels were analyzed, patients who did not respond to treatment had significantly higher levels than those who did respond ( $P < 0.01$ ).

**Conclusions.** Levels of antioxidants significantly differed between the patients with cervical cancer and the controls, and no change in antioxidant levels was observed after treatment. Moreover, further studies evaluating the predictive value of glutathione levels on treatment response are warranted.

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**Key words:** antioxidant status, radiation, uterine cervical neoplasms.

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