Elevated Lipid Peroxidation and Disturbed Antioxidant Enzyme Activities in Plasma and Erythrocytes of Patients with Uterine Cervicitis and Myoma

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摘要

Abstract

Objectives: We investigated whether oxidative stress is associated with human uterine cervicitis and uterine myoma.

Design and Methods: We measured lipid peroxidation and antioxidant enzymes in plasma and erythrocytes of cervicitis patients and myoma patients in comparison with matched controls. Thiobarbituric acid-reactive substances (TBARS), a measure of lipid peroxidation, were determined in plasma; glutathione peroxidase (GSHPx) and catalase in erythrocytes; and superoxide dismutase (SOD) in both plasma and erythrocytes.

Results: We showed that plasma TBARS were significantly higher ($p < 0.05$) in both cervicitis patients and myoma patients than in controls. Plasma TBARS were significantly (and negatively) correlated with plasma and erythrocyte T-SOD activities in cervicitis patients only. Plasma T-SOD activity was significantly lower in both groups of patients than in controls whereas erythrocyte T-SOD activity was only significantly lower in myoma patients. The lowered plasma T-SOD activity in the cervicitis patients was attributed to decreased Mn-SOD activity whereas the lowered plasma T-SOD activity in myoma patients was attributed to decreased activities of both Cu,Zn-SOD and Mn-SOD. Erythrocyte GSHPx activity was 14% higher ($p < 0.05$) in cervicitis patients and 11% lower ($p > 0.05$) in myoma patients than in controls; catalase activity was 10% higher ($p > 0.05$) in cervicitis patients and 13% lower ($p > 0.05$) in myoma patients than in controls. Neither erythrocyte GSHPx nor catalase activity was significantly correlated with plasma TBARS.

Conclusions: The elevated lipid peroxidation and disturbed antioxidant enzyme activities

demonstrate the potential of oxidative injury in patients with uterine cervicitis and myoma.