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Tissue expression of glutathione S-transferase P1 and matrix metalloproteinase-9 in Egyptian patients with Barrett's esophagus and esophageal adeno-carcinoma

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Introduction: The identification of biomarkers in the presence of Barrett's esophagus (BE) and esophageal adenocarcinoma (EAC) has the potential to improve patient outcomes through earlier diagnosis and treatment.

Aim: To evaluate the esophageal tissue expression of glutathione S-transferaseP1 (GSTP1) and matrix metalloproteinase-9 (MMP-9) in patients with reflux esophagitis, BE and EAC.

Methods: Tissue expression of both GSTP1 and MMP-9 were analyzed in 120 paraffin-embedded esophageal samples by immunohistochemistry obtained from 60 Egyptian patients; gastro-esophageal reflux disease (GERD) (n=15), BE (n=15), EAC (n= 15) in addition to a control group with normal gross and histologic esophageal tissue (n= 15). Immunostaining was determined semi-qualitatively in all groups.

Results: Normal esophageal mucosa demonstrated the lowest MMP-9 and highest GSTP1 tissue expression compared to all other groups; $p<0.001$. In contrast, the tissue expression of MMP-9 was significantly higher and GSTP1 was significantly lower in EAC and dysplastic BE than other groups; p value<0.001. Dysplastic BE demonstrated a significant higher MMP-9; $p<0.04$ and lower GSTP1 tissue expression; $p<0.003$ compared to patients with non-dysplastic BE and GERD, however, no major changes were observed between non-dysplastic BE and GERD. The significant down-regulation of MMP-9 was coupled by up-regulation of GSTP1 expression along the whole spectrum of the disease, p value <0.001.

Conclusion: The imbalance between tissue GSTP1 and MMP-9 in BE and EAC could be considered as potential markers that might be useful to identify patients at higher risk for progression to cancer.

Biography

Naglaa Zayed has obtained her Master and MD degree in Endemic Medicine and Hepato-gastroenterology, Faculty of Medicine, Cairo University. Her research interests include HCV infection and its consequences in addition to screening of colo-rectal cancer and the possible detection of genetic markers that may help in in the early detection of GIT malignancy. She has attended several national and international conferences where she had presented few oral and poster presentations. She has published several papers in reputed journals and has been serving as a reviewer for few journals.

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