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Application of the serum autoantibody against tumor associated antigen as biomarker for primary screening of cervical cancer

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Primary screening of cervical cancer has depended on the cytology-based method so far. There has been no definite trial for discovering reliable and potential serum biomarkers for primary screening of cervical cancer. Serum autoantibodies against tumor associated antigens (TAAs) have been considered as potential biomarkers for early diagnosis of cancer since they can be detected even in the early stages of cancers. In the present study, the levels of autoantibodies against Cancer Antigen 15-3 (CA 15-3), carcinoembryonic antigen (CEA), Cancer Antigen 19-9 (CA 19-9), c-Myc, p53, heat shock protein (Hsp)27 and Hsp70 were evaluated by enzyme-linked immunosorbent assays (ELISAs) in patient with cervical lesions. Levels of IgGs against seven types of TAAs listed above were compared between women with normal cytology, cervical intraepithelial neoplasia (CIN) I, CIN II, CIN III and cervical cancer. It was found that the levels of anti-CA 15-3 and anti-CEA IgGs increased with increasing stage of cervical lesions. Anti-CA 19-9 IgG level was found to elevate in only CIN III stage while no change was found between normal, CIN I, CIN II and cancer. The levels of anti-c-Myc, -p53, -Hsp27 and -Hsp70 IgG were unchanged with increasing stage of cervical lesions. The combination of ELISAs for detecting anti-CA 15-3, anti-CEA and anti-CA 19-9 IgGs could discriminate CINs from normal reliably and cancer from normal powerfully (83.9% of sensitivity and 82.1% of specificity). Our results indicate serum autoantibodies are potentially usable as biomarkers for detecting cervical lesions.

Biography

Yingji Jin is presently pursuing PhD in the Chung-Ang University, South Korea. Her research area focuses on discovering of potential biomarkers for primary screening of cervical cancer and has published two papers.

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