

Conclusion: Health professionals in primary health care, particularly those that are smokers, are not engaged enough in promoting health behavior among their patients. Medical school curriculum and continual medical education programs for physicians and nurses should be strengthened to help reduce smoking rates among health professionals and change their attitudes towards tobacco control.

Experimental and Geographic Pathology/Epidemiology

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Esophageal cancer in Iran: Is the pattern different with the western countries?

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Iran is one of the countries in the category of the Asian esophageal cancer belt. Until now, there has been suggested that the ratio of esophageal adenocarcinoma to the squamous cell carcinoma (E/S ratio) has been increased. During 10 years from 1991 to 2001 all patients with esophageal cancer which diagnosis has been established by pathology were prospectively included in this study. All the data about demographic information, smoking habits, family history of esophageal cancer in first-degree relatives was collected. We scrutinized the trend in the E/S ratio in Iran as compared to the western countries. 224 cases [49 Adenocarcinoma (64.02 years, 38 males), 175 Squamous Cell (58.12 years, 91 males)] were enrolled. 23.2% of the cases were under 50 years. Of these 11.5% were esophageal adenocarcinoma as compared to the 23.2% in the total population ($P < 0.05$). Positive family history in the first-degree relatives was observed in 2 adenocarcinoma and 5 of the squamous cell carcinoma. There was no significant difference between age, gender, ethnic origin and number of cigarettes per day and the type of cancer in our population. Although not significant, but there was an increasing trend in E/S ratio during these 10 years. It seems that in spite of recent publication regarding the difference in pattern of esophageal cancer between western and developing countries, this study could not provide information supporting this concept.

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Opportunities of an individual approach to postoperative treatment in breast cancer patients

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Background: In breast cancer treatment the surgical method is the basic. However frequently it is supplemented with use of

various ways of antineoplastic therapy, for example, chemotherapy. With this purpose we investigated activity of Thymidine kinase (TK)-the recognized marker of proliferation. Thymidine phosphorylase (TP) is used as the indicator of sensitivity to same chemopreparations. Activity of Adenosinedeaminase (ADA) connected with differentiation and apoptosis of a cell on which effect some preparations.

Materials and methods: Activity of TK, TP and ADA is investigated in blood serum, bioplate of tissues and in lymphocytes of breast cancer patients T3N2M0 (70 persons) before and after radical mastectomy and during medicinal treatment. Activity of enzymes in blood serum of healthy women (30 persons) is investigated aged 40-49 years.

Results: It is established, that in blood serum of breast cancer patients T3N2M0 raises activity of TK (3.44-0.51 nmol/hour/mg, control 3.03-0.20 nmol/hour/mg) and is reduced activity of TP (34.56-2.56 nmol/min/mg, control 42.36-1.25 nmol/min/mg). It is revealed, that activity of TP depends on a degree of a differentiation of a tumour. In bioplate of low differentiation tumours and in blood serum of such patients activity of TP was three times lower than norm. Activity of ADA is reduced in blood serum (5.2 times) and reduced in lymphocytes (3.4 times) in comparison with norm. After operation activity of TK and TP in blood serum practically did not change and activity of ADA has authentically decreased from 7.85-1.85 to 5.28-0.73 nmol/min/mg. Simultaneously ADA has raised in lymphocytes from 40.08-2.14 to 50.03-5.16 nmol/min/mg.

Conclusions: During chemotherapeutic treatment in patients with high differentiation of tumour in two weeks activity of TK was reduced up to 1.85-0.67 nmol/hour/mg, TP came nearer to norm (58.88 -5.12) nmol/min/mg, ADA did not change. In patients with low differentiation of tumour TK accrued up to 9.16-1.6 nmol/hour/mg, TP and ADA remained same as before treatment. In this group within 5 years high percent of lethal outcomes that speaks about low efficiency of chemotherapy. Thus, it is revealed that at treatment of breast cancer patients is necessary to take into account differentiation of a tumour and for individual treatment to use activity of TK,TP and ADA as a test of efficiency.

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Immunohistochemical analysis of p53 and Bcl2 in gastric cancer patients

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Background: Gastric cancer is considered to be one of the most common types of cancers worldwide. Most patients are diagnosed at advanced stages, and fatal outcome is expected. Abnormal expression of proteins regulating the cell cycle, particularly p53 and Bcl2, has been reported in gastric cancers with controversial conclusions. Our aim was to study the expression of p53 and Bcl2 proteins and to correlate the obtained results

with other available clinical and histopathological parameters of patients' tumors.

Materials and methods: Paraffin embedded tissue sections (N=30) of primary gastric adenocarcinoma, obtained following surgery, were randomly selected for this study. Immunohistochemical staining of p53 and Bcl2 proteins were carried out using monoclonal antibody for p53 (DO-7; Dako) and Bcl2 (124; Dako), and LSAB2 detection kit (Dako-Denmark).

Results: Positive immunostaining for p53 and Bcl2 were observed in 80% and 43.3% of tumor samples, respectively. Significant correlation was found between p53 and Bcl2 expression ($p=0.013$). Positive p53 immunostaining also correlated with tumor grade ($p=0.001$), tumor size ($p=0.065$) and cigarette smoking ($p=0.004$), but no significant association was observed with age and gender of patients. Unlike p53, a positive correlation between gender and Bcl2 expression was observed in this study ($p=0.057$).

Conclusions: Our data showed that 46.6% of patients with positive p53 were Bcl2 negative indicating a double gene alteration in this study that requires special attention to their treatment regimen. These data indicate that there is a close association between p53 protein expression with tumor size and histological grade and also smoking habit of patients.

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Immunohistochemical analysis of thymidylate synthase (TS) and thymidine phosphorylase (TP) in esophageal cancer patients

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Background: Esophageal cancer represents the third most common gastrointestinal malignancy and ranks among the ten most common cancers worldwide. Gene expression levels of thymidylate synthase (TS) and thymidine phosphorylase (TP) are associated with response to chemotherapy using 5-FU and also patients' survival. Therefore, we decided to determine the TS and TP status in esophageal carcinomas and to correlate molecular alterations with clinicopathological findings.

Materials and methods: Tumor samples from 29 surgically resected esophagus squamous cell carcinoma and adenocarcinoma were analyzed by immunohistochemical techniques using primary antibodies for TS (TS 106 Labvision Corporation) and TP (P-GF 44C Labvision Corporation) and LSAB2 detection kit (Dako-Denmark).

Results: TS and TP were positive in 59.3% and 74.1% of tumor samples, respectively. Positive TS ($p=0.035$) and TP ($p=0.021$) were significantly correlated with cigarette smoking and relatively with nodal status ($p=0.083$). Unlike TS, a positive correlation between grade and TP expression was observed ($p=0.021$). There was no significant association between TS or TP immunostaining with tumor type, tumor size, age, and gender of patients.

Conclusions: Over expression of both TS and TP may indicate a poor prognosis for patients with esophageal cancer. Our data showed that 40.7% and 25.9% of patients were TS and TP negative, respectively. This indicates gene alterations in these patients that obviously affect their response to 5-FU based chemotherapy and their prognosis. Therefore, we highly recommend immunohistochemical analysis of tumor samples for TS and TP status as a valuable tool for selection of patients who will better respond to chemotherapy.

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Evaluation of thymidylate synthase (TS) and thymidine phosphorylase (TP) expressions in Iranian esophageal cancer patients

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Gastrointestinal malignancies including esophageal cancers rank among the ten most common cancers worldwide. Expressions of thymidylate synthase (TS) and thymidine phosphorylase (TP) have been reported to be associated with response to chemotherapy using Fluoropyrimidines, in particular the 5-FU, and also patient survival. Therefore, we decided to determine the TS and TP status in esophageal carcinomas in Iranian patients and to correlate molecular alterations with clinicopathological findings. Tumor samples from 29 surgically resected esophagus squamous cell carcinoma and adenocarcinoma were analyzed by immunohistochemical techniques using primary antibodies for TS (TS 106, Labvision Corporation) and TP (P-GF 44C, Labvision Corporation) and LSAB2 detection kit (Dako-Denmark). Our results showed that the TS and TP proteins were positive in 59.3% and 74.1% of tumor samples, respectively. Immunostaining patterns of TS ($p=0.035$) and TP ($p=0.021$) were significantly correlated with cigarette smoking and relatively with nodal status ($p=0.083$). A significant correlation was observed only between grade and TP expression ($p=0.021$) but not with TS expression. No significant association was found between TS or TP expressions with tumor type, tumor size, age, and gender of patients. Due to observed gene alterations in these patients we recommend immunohistochemical analysis of tumor samples for selection of patients who will be most probably benefited from 5-FU based chemotherapy regimens.