3515 POSTER

Is there a relationship between cadmium and human breast cancer?

L. Strumylaite[1], A. Bogusevicius[2], O. Abdrakhmanov[1], D. Baranauskiene[1], R. Kregzdyte[1], L. Poskiene[3], D. Pranys[3]. *[1]Kaunas University of Medicine, Institute for Biomedical Research, Kaunas, Lithuania; [2]Kaunas University of Medicine, Department of Surgery, Kaunas, Lithuania; [3]Kaunas University of Medicine, Department of Pathological Anatomy, Kaunas, Lithuania*

Background: Cadmium is a known human carcinogen based on findings of lung cancer in exposed populations. A more controversial target site for cadmium is the human mammary gland, for which some studies indicate a link between cadmium exposure and cancer. Some authors suggest that cadmium is a new environmental estrogen that mimics the effects of estradiol in estrogen-responsive breast cancer cell lines. In order to assess an association of cadmium with human breast cancer, we examined cadmium concentration in urine and breast tissue of patients with breast cancer and non-malignant breast tumour.
Material and Methods: Cadmium was analyzed in the samples of urine and breast tissue of 57 breast cancer patients and 50 benign tumour patients. Two samples of breast tissue from each patient, i.e. tumour and some healthy tissue close to tumour were taken for the analysis. Cadmium was determined by atomic absorption spectrometry (Perkin-Elmer, Zeeman 3030). Estrogen receptors (ER) determined by immunohistochemical assay.
Results: The mean cadmium concentration in breast cancer patients was 53.4 ng/g (95% CI = 42.2−64.6) for tumour sample and 20.1 ng/g (95% CI = 14.4−25.9) for healthy breast tissue sample ($p < 0.001$). In benign tumour patients the figures were following: 37.2 ng/g (95% CI = 23.3−51.1) and 32.1 ng/g (95% CI = 17.5−46.5) ($p = 0.449$). Cadmium concentration found in the sample of malignant tumour differed significantly from that in the sample of benign tumour ($p < 0.001$). Significantly higher concentration of cadmium determined in breast cancer patients with positive ER compare to that with negative ER (67.5 ng/g 95% CI = 48.7−86.2 vs. 42.5 ng/g 95% CI = 28.6−56.4, $p = 0.035$). There was a positive correlation between cadmium in the samples of breast tumour and urine ($R = 0.3$, $p = 0.01$). In breast cancer patients cadmium in urine correlated with number of cigarettes smoked during lifetime ($R = 0.7$, $p = 0.02$).
Conclusion: The data obtained show a possible relationship between cadmium and breast cancer.

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Trends in incidence rates of tobacco-related cancer in Belarus, 1970–2005

N. Novikava[1], I. Veyalkin[2]. *[1]International Sakharov Environmental University, Environmental Medicine, Minsk, Belarus; [2]Republican Scientific and Practical Centre of Oncology and Medical Radiology, Cancer Epidemiology, Minsk, Belarus*

Background: To analyze trends in the incidence rates for cancer types most strongly associated with tobacco use over the last 36 years.
Material and Methods: Data were obtained from National Cancer Registry. Age-specific incidence rates for some cancers most strongly associated with tobacco (lung, larynx, esophagus and bladder cancers) were investigated and age-standardized incidence rates (ASRs, World Standard) were calculated. Smoothing of rates was made with method of moving averages. Tendency equations were plotted using linear regression method.
Results: Smoking-related cancers are more common in men than in women. Significant ($p < 0.001$) positive slopes were revealed for all sites in male population (lung: 1.25 with standard error SE = 0.09; larynx: 0.15 with SE = 0.015; esophagus: 0.11 with SE = 0.007; bladder 0.296 with SE = 0.011). For women significant ($p < 0.001$) positive slope was found for lung (0.02 with SE = 0.005) and bladder (0.037 with SE = 0.002) cancers. Significant negative slope was revealed for cancer of esophagus (−0.014; SE = 0.001). No clearly defined trend was observed in larynx cancer in women.
More expressed growth tendency for lung cancer was observed till 1988 in women (slope 0.076) and till 1995 in men (slope 1.85). Lung cancer rates in female has been on the stable level (ARSs about 5.1 per 100,000) since the beginning of 1990s. But age-specific rates have shown a negative upward trend in the middle age groups for rural women. Lung cancer rates in male showed a tendency to decline (between 1995 and 2005 ASRs decreased by 13.3%; in 2005 incidence rate was 61.9 per 100,000). Esophagus and bladder cancer ASRs in men have also stabilized since the middle of 1990s.
Conclusions: Since the prevalence of smoking remains unacceptably high in Belarus, tobacco-related cancers present a serious medical and social problem, despite of some stabilization in incidence last years.

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Cervical cancer awareness and screening programme in rural Bengal by using mobile unit – an ongoing project

S. Ganguly[1], L. Konar[2], S. Mukhopadhyay[3], J. Basak[4], K. Mukherjee[1], A. Mukhopadhyay[5]. *[1]Netaji Subhas Chandra Bose Cancer Research Institute, Epidemiology, Calcutta, India; [2]Netaji Subhas Chandra Bose Cancer Research Institute, OPD and Epidemiology, Calcutta, India; [3]Netaji Subhas Chandra Bose Cancer Research Institute, Biochemistry, Calcutta, India; [4]Netaji Subhas Chandra Bose Cancer Research Institute, Molecular Biology, Calcutta, India; [5]Netaji Subhas Chandra Bose Cancer Research Institute, Medical Oncology, Calcutta, India*

Background: West Bengal is situated in the Eastern part of India and is under developed in medical facilities. Total population of Bengal is 6 crores. A total of 75,000 new cancer patients are detected every year where as total number of cancer patients are about 5 lacs. Cervical cancer is the commonest cancer in females in rural Bengal. About 80% of them remain undetected. Even after detection only 20% go for proper treatment.
Objective: The aim of our study is to detect the incidence of Cervical Cancer, and their causative factors. We also intend to give proper awareness about the early signs of cervical cancer using mobile unit so that it can be detected earlier and possible to cure.
Material and Methods: During period from Jan 2009 to Dec 2011 we've taken a project of cervical cancer awareness and detection programme in the rural West Bengal by mobile unit. There will be 2 mobile units; one covers the south Bengal and other north Bengal. Each unit is having a team of 2 gynecologic oncologists, 2 oncology nurses and 3 social workers. Each unit is covering one block in a week. There is an awareness camp, arranged in each block where the doctors give awareness of early symptoms of cervical cancer. Then samples are taken for next 7 days in that area. This way all 294 blocks will be covered over a period of 3 years.
Results: In this project of 3 years 30, 000, 00 women will be given awareness of cervical cancer and expected 3, 000, 00 samples will be collected for Pap smear. In oue initial survey participation in a particular area for an awareness programme is 80%. More than 90% of symptomatic and 3−4% of asymptomatic patients are being positive by Pap smear.
Conclusion: Cervical Cancer screening program using mobile unit is being very useful. Majority of the patients are asymptomatic and detected in early stage and cure is possible by appropriate treatment.

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Breast cancer mortality in Tbilisi (Georgia) in 2002–2004

N.M. Shavdia[1], V.T. Tkeshelashvili[2], M.D. Shavdia[3]. *[1]AIETI Medical School, Medicine, Tbilisi, Georgia; [2]National Association of Cancer Control, Epideniology, Tbilisi, Georgia; [3]Cancer Prevention Center, Palliative Care Unit, Tbilisi, Georgia*

Background: Data base was created to determine causes of death outcome in breast canser patients on the basis of the Tbilisi population-based cancer registry for 2005−06. In total, 33478 subjects were selected deceised in 2002–2004.
Material and Methods: Descriptive analytical epidemiological study was conducted after electronic population data quality assesment and software processing.
Results: Death structure of Tbilisi for 2002−04 shoed that female population composed almost half (45.8%) of mortality cases caused by cancer of reproductive system, presented by sites as: breast – 28.4%, ovarian – 6.4%, cervical – 5.6% and endometrial cancer – 5.4%. 845 female death cases were attributed to breast cancer in 2002−04, that means that per 100,000 Female Tbilisi citizens, breast cancer related death rate annually is 48 (crude rate), 33 (Age Standardized Death Rate (World Standard)), 43 (Age Adjusted Death Rate (Tbilisi 2002 Standard)). From birth to the age of 65 cumulative risk (CR0−64) of breast cancer caused death per females of Tbilisi population was 65. In the death structure of Tbilisi Female Population in 2002–2004, from the age of 25, the first rank place is taken by breast cancer. At the same time, the breast cancer takes the first place in the death structure of any kind of causes at the age of 35−59. With age increasing from 60 breast cancer moves to II, IV, V, IX and, from 80 moves to X rank place. In the 25 age interval (age group 35−59) breast cancer is a leading site in female cancer death bu sites and a leading cause of Tbilisi female population death. Cancer of female reproduction system organs: breast, ovarian, cervix and corpus uteri are included in 10 main sites cancer, caused female early death. In the cancer death structure in Tbilisi female population at the age groups 30−44 and 50−54 the cervical cancer ranks II. Cervical cancer also takes the II rank in the death structure of any kind of causes in the age group 40−44. In the post menopausal period, at the age between 50−64, ovarian cancer related death takes II-III ranks in the cancer caused death structure and VI-IX, in the overall death structure. It should be noted that in the post menopause, from the age of