

and more expensive drugs and using wider spectrum of preparations although recent advances in pharmacological treatment and diagnostics are coming in practice with delay.

**Conclusions:** Rising BC incidence keeps bringing new challenges for healthcare system. Breast cancer incidence is rising so quickly in Grodno region (1.36 times during 12 years) that there is a vital need of development of prevention strategies.

## P20

### Early detection of upper gastrointestinal tumors based on molecular analysis

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Molecular analysis of p53 (plays a crucial role in cellular proliferation and apoptosis) might help to identify patients from high risk population at early stage of malignant transformation.

**Materials:** Immunohistochemical staining was performed on routinely processed paraffin primary tumour sections from 28 patients with cancer (5 esophageal squamous cell carcinoma, 23 adenocarcinoma of gastroesophageal junction (Siewert 1-2-3) (S1, S2, S3) and 13 patients (control group) with non-cancer lesion or normal tissue of upper digestive tract. P53 was evaluated by 2 categories: intensity and diffusion. Complete resection was performed for all cancer patients.

**Results:** We found no association between p53 expression and median survival of esophageal and cardia cancer patients ( $p=0.004$ ). P53 was significantly higher in the cancer tissue than in normal ( $p=0.014623$  for diffusion,  $p=0.003382$  for intensity). p53 was significantly lower ( $p<0.001$ ) in the S3 group than in S2. But no significant difference was observed in p53 expression between S1 and S2 cancers (both for diffusion and intensity).

**Conclusions:** P53 expression does not indicate prognosis of patients with upper digestive tract tumors. P53 examination in biopsy specimens taken during endoscopies in patients with precancerous lesions may be helpful for early detection of upper digestive tract tumors.

## P21

### Colorectal cancer incidence trends in US and UK populations: a right- to left-sided biological gradient with implications for screening and chemoprevention

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**Background:** Several lines of evidence support the premise that screening colonoscopy reduces colorectal cancer (CRC) incidence, but there may be differential benefits for right- and left-sided tumours. To better understand the biological basis of this differential effect, we derived bio-mathematical models of CRC incidence trends in US and UK populations, representing relatively high- and low-prevalent screening, respectively.

**Methods:** Using the Surveillance Epidemiology and End Results (SEER) and the Office of National Statistics (ONS) registries (both 1973 to 2004), we derived stochastic multistage clonal expansion (MSCE) models for right- (proximal colon) and left- (distal colon and rectal) sided tumours. The MSCE concept provides a quantitative description of natural tumour development from the initiation of an adenoma (via biallelic tumour suppressor gene inactivation) to the clinical detection of CRC.

**Results:** From 1,148,546 (SEER: 320,521; ONS: 828,025) cases, parameters estimates for the calendar-cohort adjusted models showed that adenoma initiation rates were higher for

right-sided tumours while adenoma growth rates were higher for left-sided tumours. The net effect was a higher cancer risk in the right colon after age 70 years. Consistent with this finding, simulations of adenoma development predicted that the relative prevalence for right- versus left-sided tumours increases with increasing age; a differential effect most striking in women.

**Interpretation:** Using a realistic bio-mathematical description of CRC development for two nationally representative registries, we demonstrate age- and sex-dependent biological gradients for right- and left-sided colorectal tumours. These findings argue for an age- and sex- and site-directed approach to CRC screening and chemoprevention.

## P22

### Kenyan children with cancer: Controlling Burkitt's lymphoma

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**Background:** Over 300 children are diagnosed with Burkitt's Cancer every year in Kenya. The changing lifestyle, poverty and lack of knowledge play a vital role in the rise of cancer amongst poor villagers in Kenya. The research gathered by Go Fishnet Youth Project conducted in western Kenya shows the number of cases of Burkitt's Lymphoma reported at various health facilities as increasing due to high level of poverty and lack of awareness while the possibility of eradicating it is 80% if Kenyan people at grassroot level had resources available and good diet!

**Methods:** The Ministry of Health in conjunction with Go Fishnet Youth Project and other partner Community Based Organizations (CBOs) have come up with a multi-sectoral approach of preventing and controlling and if possible eliminating the spread of cancer among children in western Kenya. This new approach brings together individual groups and expertise to combine their efforts to fight and control cancer. Go Fishnet Youth Project has a termly educational exchange programme and counseling in various primary and secondary schools to sensitize young girls and boys to recognize possible signs of the disease and how to respond quickly without fear of stigma if suspected. Other cancer cases are encouraged for aggressive therapeutic programmes within prophylaxis (prevention) programmes.

We carry out these initiatives through:

Every-home-crusade and diagnosis in schools, villages and hospital facilities.

Organize workshops to train volunteer community based workers for village awareness and sensitization programmes.

Creation of home-based care to provide lectures and teachings on basis initiatives to eradicate poverty and have plenty of food from small scale farming and local infrastructures.

**Result:** With Prophylaxis (Prevention) programme, the patients who report early have a survival rate of 90%; among children however most cancers are reported late with poor treatment. Lack of enough and adequate food contributes to the cause of cancer among children because cancer actually is caused by the Epstein-Barr (EB) virus. This virus can stay in the system and gets frequent bouts of malaria with poor treatment which results into cancer. This cancer occurs when children's B-lymphocytes (jaw area lymphodes) are infected with EB virus. This infection is common in Kenya and usually causes no long-term problems and can be prevented.

**Conclusion:** Cancer amongst children in Kenya can be controlled, treated and eradicated if we have enough sensitization and awareness programmes at the grassroot levels. This includes mobilization of community based workers, media, youth initiatives for change in the society



about the myths concerning cancer. Cancer should not be taken as untreatable.

## Chemoprevention, Vaccination

### P23

#### 4HPR: a new prevention trial in high risk women. Rationale, design and implementation

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Retinoids have been studied as chemopreventive compounds because of their role in regulating cell growth, differentiation and apoptosis in preclinical models. Induction of apoptosis is a unique feature of fenretinide (4-hydroxyphenylshy;retinamide, 4-HPR) the most studied retinoid in clinical trials of breast cancer (BC) prevention for its selective accumulation in the breast tissue and its low toxicity. Fenretinide is effective in inhibiting the growth of BRCA-1 mutated BC cell lines. Recent studies showed that it modulates gene expression in ovarian cells, with an up-regulation of expression of proapoptotic genes in OVCA433 cells and down-regulation of mutant BRCA genes in IOSE (pre-malignant) cells and OVCA433 cells.

The fifteen-year follow up of a randomized phase III trial of fenretinide to prevent second BC indicates that it induced a 17%, durable reduction of second BC incidence. When stratified by menopausal status, the analysis showed a 38%, statistically significant reduction of second BC in premenopausal women and this effect persisted for up to 15 years, i.e. 10 years after treatment cessation. Importantly, the younger were the women ( $\leq 40$  years), the greater was the trend of benefit of fenretinide. When considering the protective activity of fenretinide on second BC and a similar trend on ovarian cancer (OC) it appears that young women at high risk for both diseases such as carriers of gemiline BRCA-1 and BRCA-2 mutations or those with a high family risk may be ideal candidates for further investigation on this retinoid. Since a reduction of second BC might be a surrogate marker of primary prevention, a favourable effect of fenretinide provides strong rationale for a primary prevention trial in unaffected women at high risk for BC.

Based on all the above considerations the European Institute of Oncology (Milan, Italy) has promoted a multi-centric (15 centres) randomized phase III placebo-controlled study with fenretinide in healthy young women. 758 healthy women, 25–44 years old at increased BC risk (BRCA-1/2 mutation or at risk of mutation  $\geq 20\%$ , based on BRCAPRO program), will be randomized to 4-HPR 200 mg/day versus placebo for 5 years followed by a ten years follow up period. The aim of the trial is to assess the efficacy of fenretinide in reducing the incidence of invasive BC and ductal intraepithelial neoplasia (DIN). Secondary endpoints are the incidence of non-invasive breast disorders, OC, other cancers and various biomarkers of risk.

### P24

#### Breast cancer prevention with calcium and vitamin D

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**Background:** Although some observational studies have associated higher calcium intake and especially higher vitamin D intake and 25-hydroxyvitamin D levels with lower breast cancer risk, no randomized trial has evaluated these relationships.

**Methods:** Postmenopausal women (N=25,282) who were enrolled in a Women's Health Initiative clinical trial were

randomly assigned to 1000mg of elemental calcium with 400IU of vitamin D3 daily or placebo for a mean of 6.0 years to determine the effects of supplement use on incidence of hip fracture. Mammograms and breast exams were serially conducted. Invasive breast cancer was a secondary outcome. Baseline serum 25-hydroxyvitamin D levels were assessed in a nested case-control study of 640 case patients and 640 control subjects. A Cox proportional hazards model was used to estimate the risk of breast cancer associated with random assignment to calcium with vitamin D3. Associations between 25-hydroxyvitamin D serum levels and total vitamin D intake, body mass index (BMI), recreational physical activity, and breast cancer risks were evaluated using logistic regression models. Statistical tests were two-sided.

**Results:** Invasive breast cancer incidence was similar in the two groups (398 supplement vs 410 placebo; hazard ratio = 0.96; 95% confidence interval = 0.84–1.02). In the nested case-control study, no effect of supplement group assignment on breast cancer risk was seen. Baseline 25-hydroxyvitamin D levels were modestly correlated with total vitamin D intake (diet and supplements) ( $r=0.18$ ,  $P<0.001$ ) and were higher among women with lower BMI and higher recreational physical activity (both  $P<0.001$ ). Baseline 25-hydroxyvitamin D levels were not associated with breast cancer risk in analyses that were adjusted for BMI and physical activity ( $P_{\text{trend}}=0.20$ ).

**Conclusions:** Calcium and vitamin D supplementation did not reduce invasive breast cancer incidence in post-menopausal women. In addition, 25-hydroxyvitamin D levels were not associated with subsequent breast cancer risk. These findings do not support a relationship between total vitamin D intake and 25-hydroxyvitamin D levels with breast cancer risk.

### P25

#### Knowledge and attitudes about prevention of cervical cancer by human papilloma virus vaccine (HPV) or pap smears: a cross-sectional survey in France

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**Introduction:** The commercialisation of two vaccines which focus on the main types of human papilloma virus (HPV) has the potential to reduce approximately 70% of all cervical cancers. As these vaccines do not provide 100% protection, screening for cervical cancer needs to continue for many years. Yet little is known about knowledge and attitudes about HPV vaccine and prevention of cervical cancer in general population and particularly young women. The aim of this study was to measure information on attitudes about HPV vaccination as well as knowledge of HPV and other risk factors of cervical cancer and methods of screening for cervical cancers.

**Method:** 306 participants aged 14–77 years of age, in July 2008 were recruited from the unit for prevention of infectious diseases (AIDS, tuberculosis, ...) of the University Hospital of Amiens in France. They completed a self-administered questionnaire covering demographics, knowledge and attitudes about cervical cancer, pap-smears and HPV vaccination, the perceived risk for contracting HPV infection and/or for developing cervical cancer and the perceived benefits of a vaccination to prevent cervical cancer.

**Results:** The sex-ratio of the participants was 0.76. The mean age was 34.9 years and 81% were born in France. Thirty-six percent of the population was students and 44% were married. Sixty-six percent agreed that a pap-smear could detect cervical carcinoma. Eighty-three percent of women had undergone at least one pap-test in their life and 60% in