

of breast cancer among the more elderly population has been rising. Japanese females reach their peak of vulnerability to breast cancer in their 50s. However, the incidence seen at extreme ages, both young and old, has also been increasing in recent times. In this study the significant differences in breast cancer patients among those age groups were number of PST administered, incidence of discovery by breast cancer screening and BMI.

**Disclosure of Interest:** None Declared

**P149 Evaluation of family histories and analysis of *BRCA1* founder mutations in a population-based series of breast and ovarian cancer cases in Latvia**

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**Goals:** Mutations in the high penetrance breast and ovarian cancer susceptibility gene *BRCA1* account for a significant percentage of hereditary breast and ovarian cancer cases. Structural and functional changes of mutated proteins caused by different *BRCA1* mutations are not identical and it can lead to various phenotypes of cancers (genotype – phenotype correlations). Genotype – phenotype correlations of mutations located in different part of the *BRCA1* gene have been described previously; however phenotypic differences of specific *BRCA1* mutations were not fully investigated.

**Methods:** In our study we have investigated the prevalence of *BRCA1* founder mutations: 300T/G, 4153delA and 5382insC in a population-based series of unselected breast (n=2546) and ovarian (n=795) cancer cases from Latvia. Among 4153delA and 5382insC mutation carriers identified in this analysis we made a comparison of overall survival, age at diagnosis and family histories of breast and ovarian cancers.

**Results:** The prevalence of *BRCA1* 5382insC mutation carriers among breast cancer patients was significantly higher than 4153delA mutation carriers (Odds Ratio = 2.76, 95% CI = 1.74 to 4.38, P < 0.0001), whereas among ovarian cancer cases the prevalence of carriers of both these founder mutations was almost similar. We have also observed the difference in prevalence of breast and ovarian cancer cases among 1<sup>st</sup> and 2<sup>nd</sup> degree relatives of *BRCA1* 4153delA and 5382insC mutation carriers who were reported by the probands to have had any cancer. In addition among breast cancer patients *BRCA1* mutation 4153delA was connected to later age of onset and to worse clinical outcomes in comparison with *BRCA1* 5382insC mutation.

**Conclusion:** Based on our data we can suggest that carriers of *BRCA1* 4153delA and 5382insC founder mutations have different risk of breast and ovarian cancer development, different age of onset and prognosis of breast cancers. These results indicate the importance of further clinical studies for evaluation of the significance of different cancer prevention options among carriers of specific *BRCA1* mutations.

**Disclosure of Interest:** None Declared

**P150 Coffee consumption modifies risk of estrogen-receptor negative breast cancer**

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**Goals:** Breast cancer is a complex disease and may be sub-divided into hormone-responsive (estrogen receptor [ER] positive) and non-hormone responsive subtypes (ER-negative). Some evidence suggests that heterogeneity exists in the associations between coffee consumption and breast cancer risk, according to different estrogen receptor subtypes. We assessed the association between coffee consumption and postmenopausal breast cancer risk in a large population-based study (2,818 cases and 3,111 controls), overall, and stratified by ER tumour subtypes.

**Methods:** Odds ratios (OR) and corresponding 95% confidence intervals (CI) were estimated using the multivariate logistic regression models fitted to examine breast cancer risk in a stratified case-control analysis. Heterogeneity among ER subtypes was evaluated in a case-only analysis, by fitting binary logistic regression models, treating ER status as a dependent variable, with coffee consumption included as a covariate.

**Results:** In the stratified case-control analyses, a significant reduction in the risk of ER-negative breast cancer was observed (OR >5 cups/day compared to OR ≤1 cup/day [age-adjusted]: 0.44, 95% CI: 0.27, 0.71, P trend <0.0001).

**Conclusion:** A high daily intake of coffee per day was found to be associated with a statistically significant decrease in ER-negative breast cancer among postmenopausal women.

**Disclosure of Interest:** None Declared

**P151 Smoking habits and breast cancer: Substantially reduced risk for smokers observed in screening trials using X ray diffraction of hair by synchrotron**

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**Goals:** The Italian National Health Service Breast Cancer Screening service in Piedmont (ASLto5 – Local Health Service No 5) has completed a pilot study using a promising new screening method through Synchrotron X Ray diffraction of hair (Synchrotron Test) for early detection of breast cancer. For this study, 3508 women in the age range of 50–69 attended NHS mammographic screening. Of these, 123 were recalled (recall rate 3.5%) for further investigation with MX magnification, ultrasound, and cyto-histology. The aim of the study was to evaluate the percentage of breast cancer incidents or evidence of early precursors according to Smoking Habits within the recall group.

**Methods:** We collected data on Smoking Habits in three groups; Non Smokers (NS), Quit Q), and Current CS), measured by pack years smoked (Number of cigarettes smoked by years divided by twenty). We took a sample of hair from each for Synchrotron diffraction analysis and the results were published in the previous San Gallen Conference. (Annals Oncol. 2009 20 Suppl. 2: ii22–ii26). The population was classified using the cyto-histological results as indicated by the European Guidelines IV Edition 2004. Thus 'Benign Lesion' was called negative and 'Epithelial Proliferation' (early precursor) including Atypical Ductal/Lobular Hyperplasia (ADH/ALH) and Carcinoma were in the positive category.

**Results:** The results analysed in this way are shown below indicating breast Cancer incidence sorted by Smoking Habits in the total group and breast cancer group: Total Group (123 cases) CS=11%, Q=24%, NS=65%; Breast cancer group (36 cases) CS=8%, Q=17%, NS=75%. The overall Synchrotron test results showed a sensitivity of 93% and a specificity of 87%.

**Conclusion:** These preliminary results seem to indicate that Smoking Habits influence Breast Cancer Incidence and that a protective effect could exist for smokers and ex smokers by a ratio of 0.52 (95% confidence interval 0.19–1.31). While the statistical power of the sample is not significant, it is nevertheless a substantial and interesting difference running counter to prevailing thinking on this subject and that we will be testing in further and larger sample population.

**Disclosure of Interest:** None Declared

**P152 Metabolic syndrome: Breast cancer risk indicator in postmenopausal women**

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**Goals:** Metabolic syndrome seems to be in correlation to breast carcinogenesis. The switchover to postmenopausal status and the weight gain that lead to IGF-1 increasing levels create the substratum for different pathways of breast carcinogenesis. Our goal is to continue to evaluate the correlation between metabolic syndrome and breast cancer risk.

**Methods:** A total of 975 women, 410 cases (women operated for breast cancer) and 565 controls (healthy women) have been enrolled in our case control study between 2008 and 2011. We analyzed anthropometric parameters and assessed serum HDL-C, triglyceride, fasting plasma glucose, insulin, uric acid levels.

**Results:** Our outcomes showed an higher prevalence of metabolic syndrome (35%) among postmenopausal breast cancer women compared to healthy women (20%). There were no significant differences in metabolic