Oral Presentations

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Cancer 1

OP01 EFFECTS OF MENOPAUSAL HORMONE THERAPY AND THE RISKS OF SCREEN DETECTED AND INTERVAL BREAST CANCERS IN A LARGE UK PROSPECTIVE STUDY

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Background The use of hormone therapy for the menopause (HT) has been shown to affect the sensitivity and specificity of mammographic screening. However there is little evidence on how the association between HT use and risk of screen detected breast cancer compares with that of interval breast cancer. We examined these associations in a large UK prospective study.
Methods We used Cox proportional hazard models to estimate the relative risk (RR) of screen detected and of interval cancer in relation to HT use among post-menopausal women who attended for routine mammographic screening. Analyses were stratified by year of birth and year of recruitment and adjusted for relevant confounders including socio-economic status, reproductive history, anthropometric and other lifestyle factors.
Results Of the 1,076,203 eligible women in the cohort, 14,730 were diagnosed with a screen-detected cancer and 8,659 with an interval breast cancer. When compared to non-users of HT, current-or-recent users were at a much higher risk of an interval cancer (RR=2.18, 95%CI 2.07–2.30) than of a screen detected cancer (RR=1.44, 95%CI 1.38–1.51). For oestrogen only HT, the corresponding RRs and 95% CI for interval and screen-detected cancers were 1.60(1.48–1.73) and 1.11(1.05–1.19); and for oestrogen and progestogen HT, the corresponding values were 2.75(2.58–2.92) and 1.79(1.70–1.88).
Conclusion In this large cohort of UK women, current-or-recent users of HT were at a substantially higher risk of being diagnosed with an interval cancer than with a screen detected cancer. The difference in risk between screen-detected and interval cancer was apparent for HT preparations containing oestrogen only and combinations of oestrogen and progestogen.

OP02 INCREASED INCIDENCE OF HYPOTHYROIDISM IN BREAST CANCER SURVIVORS – A DANISH POPULATION-BASED MATCHED COHORT STUDY

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Background Research suggests increased risk of hypothyroidism among breast cancer survivors, but whether this risk is modified by treatment modalities is unclear. We estimated the incidence of hypothyroidism in breast cancer survivors, and in strata of treatment modalities.
Methods Using nationwide registries, we identified all Danish women aged ≥35 years with non-metastatic breast cancer diagnosed from 1996 through 2009. Each breast cancer survivor was matched with up to five cancer-free women (hereafter 'controls') on birth year and area of residence. We excluded all women with prevalent hypothyroidism or hyperthyroidism. We considered cancer-directed treatment as the receipt of chemotherapy (yes/no), with or without radiotherapy—either to the chest wall only or with addition of the lymph nodes. Hypothyroidism was defined using diagnostic codes, and/or levothyroxine prescriptions. We calculated incidence rates (IR) of hypothyroidism per 1000 person-years and associated 95% confidence intervals (CI), and estimated hazard ratios (HR) and 95%CI of hypothyroidism using Cox regression, adjusting for comorbidities.
Results We included 45,514 breast cancer survivors and 209,195 matched controls with 2,631,488 person-years of follow-up. Median follow-up was 8.4 years in the breast cancer cohort, and 10.6 years in the control cohort. Median age in both cohorts was 61 years. Breast cancer survivors had more comorbidities than the matched controls. Breast cancer survivors had higher incidence of hypothyroidism than matched controls [IR=4.3 (95%CI=4.2, 4.5), and 3.8 (95%CI=3.7, 3.9), respectively], corresponding to an adjusted HR of 1.15 (95% CI=1.09, 1.21). Breast cancer survivors who received radiotherapy to the lymph nodes with or without chemotherapy had highest risk of hypothyroidism when compared with matched controls [HR=1.66 (95%CI=1.43, 1.93) and HR=1.27 (95% CI=1.10, 1.46), respectively]. This pattern was also evident when comparing breast cancer survivors who received radiotherapy to the lymph nodes with or without chemotherapy with breast cancer survivors who did not undergo radiotherapy or chemotherapy (HR=1.65 (95%CI=1.41, 1.94) and HR=1.37, 95%CI=1.18, 1.58), respectively].
Conclusion Breast cancer survivors treated with radiotherapy to the lymph nodes had excess risk of hypothyroidism compared with age-matched women from the general population, and when compared with breast cancer survivors who do not undergo nodal radiotherapy. The risk of hypothyroidism was particularly high among patients treated with both nodal radiotherapy and chemotherapy. Our findings support systematic screening for hypothyroidism during follow-up among breast cancer survivors who receive nodal radiotherapy, and especially those who receive nodal radiotherapy and chemotherapy.

OP03 ASTHMA, ASTHMA CONTROL AND INCIDENCE OF LUNG CANCER: THE HUNT STUDY

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Background Large prospective studies on asthma in relation to the incidence of lung cancer are limited. It is also unclear if

the association is explained by smoking, chronic bronchitis or allergy as these conditions commonly occur in asthma individuals. The aim of this prospective cohort study was therefore to explore the association between asthma, levels of asthma control and lung cancer incidence, taking into account the commonly occurring conditions.

Methods We followed 63,103 adults who participated in the second survey of the HUNT Study in Norway from 1995–97 to 2017. None of the participants had known cancer at the time of inclusion. Ever asthma (9.0%), doctor-diagnosed asthma (5.5%) and doctor-diagnosed active asthma (3.7%) were defined based on self-reported information at baseline. Among individuals with doctor-diagnosed active asthma, levels of asthma control were categorized into well controlled and poorly controlled. Incident lung cancer cases were ascertained from the Cancer Registry of Norway. Cox regression models were used to estimate adjusted hazard ratios (HRs) with 95% confidence intervals (CIs) for incident lung cancer in relation to asthma status.

Results In total, 1,013 participants developed lung cancer during a median follow-up of 21.1 years. After adjustment for smoking (classified into detailed categories based on information of smoking status and pack-years), chronic bronchitis, allergy and other confounders, increased overall incidence of lung cancer was associated with ever asthma (HR 1.32, 95% CI 1.09–1.61), doctor-diagnosed asthma (HR 1.32, 95% CI 1.04–1.67) and doctor-diagnosed active asthma (HR 1.40, 95% CI 1.08–1.82). Individuals with ever asthma only and without current smoking, chronic bronchitis or allergy appeared to have an increased incidence of lung cancer compared with those with no ever asthma and no such common condition. Poorly controlled doctor-diagnosed active asthma was associated with an increased incidence of lung cancer (HR 1.57, 95% CI 1.14–2.16), whereas no clear association between well-controlled doctor-diagnosed active asthma and lung cancer was observed (HR 1.16, 95% CI 0.65–2.06).

Conclusion Our study suggested that asthma, in particular poorly controlled asthma, was associated with an increased lung cancer incidence. Smoking, chronic bronchitis and allergy did not seem to explain the association.

OP04 TIME-TRENDS IN INCIDENCE OF GASTRIC CANCER BY SITE AND HISTOTYPE IN THE COMMUNITY IN ITALY

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Background The incidence of gastric cancer is decreasing worldwide, but little is known about how the incidence of different types of gastric adenocarcinoma (GAC), such as non-cardia and cardia subsites, or intestinal and diffuse histotypes, have been changing over time. This study explores the incidence of GAC stratified by anatomic site and histotype in the community in Italy.

Methods A multicentre, retrospective, observational study was performed to identify all cases of GAC diagnosed in the community of Bologna and province over a twelve year period from 2001 to 2012. All histological reports of new cases of GAC diagnosed in the study period in the four hospitals of Bologna and province were identified. First histological diagnoses only were included, based on endoscopic biopsies or surgical specimens. Patients resident outside of the region were excluded. The anatomic site (non-cardia or cardia) and the histotype (intestinal or diffuse) were identified. Directly age-standardised incidence rates per year per 100,000 adults were calculated for males and females using the European standard population.

Results A total of 2,895 cases of GAC were identified. The majority were non-cardia (2,510; 87%), and were either intestinal (1,409; 49%) or diffuse (972; 34%) histotypes. More cases were seen in males (1,673; 58%) than in females (1,222; 42%). For all GAC, incidence rates decreased from 2001 to 2012 in both males [from 50.0 (95% CI 42.6–57.3) to 28.8 (95% CI 23.5–34.0)] and females [from 24.3 (95% CI 19.9–28.7) to 16.6 (95% CI 13.1–20.1)]. A similar pattern was seen for non-cardia GAC, but not for cardia GAC, whose incidence rates remained stable over time. Incidence rates of intestinal type GAC decreased substantially in males [from 26.8 (95% CI 21.4–32.2) to 16.2 (95% CI 12.3–20.1)] and, to a lesser extent, in females [from 9.1 (95% CI 6.5–11.8) to 5.2 (95% CI 3.3–7.1)]. Incidence rates of diffuse type GAC also decreased in males [from 14.8 (95% CI 10.7–18.8) to 6.9 (95% CI 4.4–9.5)], but less so in females [from 10.4 (95% CI 7.3–13.4) to 8.1 (95% CI 5.6–10.7)].

Conclusion Incidence rates of GAC are decreasing over time in this community in Italy for both males and females. The decline seems to be limited to non-cardia GAC, the intestinal histotype and predominantly to males for the diffuse histotype. Unmeasured risk factors such as *H. pylori* infection and diet may contribute to the differences. These data yield important information to aid healthcare planning in the region.

OP05 SIMULATION OF THE IMPACT OF TOBACCO CONTROL POLICIES ON FUTURE CANCER INCIDENCE IN GERMANY (2020–2050)

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Background Despite reductions in smoking prevalence over the past decades, smoking remains the most important preventable cancer risk factor in Germany. In contrast to a considerable attributable disease burden, Germany continues to be ranked among the most inactive countries in Europe in terms of implementing evidence-based tobacco control policies. The aim of this study is to provide projections of potentially avoidable cancer cases under different policy intervention scenarios.

Methods In order to estimate the proportion of potentially avoidable cancer cases under different policy intervention scenarios (tobacco tax increases, comprehensive marketing ban, plain packaging), we calculated cancer site-specific potential impact fractions (PIFs) stratified according to age and sex, for each year of study period (2020–2050), considering latency periods between the reduction in smoking prevalence and the manifestation in declining cancer excess risks. For the baseline scenario we assumed a continuation of recent smoking trends, and combined data of the German cancer registries with forecasted population sizes, published effect sizes, and national