6.2 CANCER

Chair: Dr. Ali Al-Zahrani, Saudi Arabia

**USE OF SMOKELESS TOBACCO AND THE RISK OF OESOPHAGEAL SQUAMOUS-CELL CARCINOMA: A MULTICENTER CASE-CONTROL STUDY**

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Introduction Oesophageal cancer remains an important public health problem worldwide. This multicenter matched case-control study examined chewing of betel quid, areca nut, snuff dipping and cigarette smoking as the risk factors for oesophageal squamous-cell carcinoma.

Methods We enrolled 91 cases of oesophageal squamous-cell carcinoma and 564 matched controls from three tertiary-care hospitals in Karachi, Pakistan. A structured questionnaire was used for data collection.

Results Multivariable conditional logistic regression model showed that chewing of betel quid (adjusted matched OR (mORadj) = 9.7; 95% CI 5.0 to 18.8), areca nut (mORadj = 4.3; 95% CI 1.5 to 12.4), snuff dipping (mORadj = 3.6; 95% CI 1.5 to 8.5) and ever-smoking (mORadj = 2.8; 95% CI 1.3 to 5.8) had significant independent associations with oesophageal squamous-cell carcinoma status. The adjusted summary population attributable risk per cent for all the substances together was 69.0. Furthermore, despite incomplete synergy, there was manifold increase in the risk of oesophageal squamous-cell carcinoma if the respondents were ever smokers and betel quid chewers (mORadj = 19.4; 95% CI 6.1 to 62.1) or if they were ever smokers and used oral snuff (mORadj = 11.9; 95% CI 1.8 to 77.3). The adjusted population attributable risk (%) was higher for combined use of cigarette smoking with betel quid (68.8%) than with snuff dipping (29.5).

Conclusions Public awareness to curtail the addiction to these substances may result in a substantial reduction in the incidence of oesophageal squamous-cell carcinoma and related morbidity and mortality in this and similar settings.

**ESTIMATING THE POPULATION-LEVEL IMPACT OF MODIFIABLE AND NON-MODIFIABLE RISK FACTORS ON INVASIVE POSTMENOPAUSAL BREAST CANCER AND BREAST CANCER SUBTYPES**

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Methods Using data on 3074 cases and 6386 controls from a population-based case-control study of postmenopausal breast cancer conducted in Germany between 2002 and 2005, we calculated multivariable-adjusted ORs and population attributable risks (PARs) for modifiable and non-modifiable risk factors. We examined overall postmenopausal invasive breast cancer as well as tumour subtypes by estrogen receptor (ER) and progesterone receptor (PR) status.

Results The summary PARs (95% CIs) for non-modifiable risk factors (age at menarche, age at menopause, parity, benign breast disease, and family history of breast cancer) were 57.2% (27.1 to 47.2%) regarding overall invasive tumours, and 36.5% (23.3 to 47.6%) regarding ER+/PR+ tumours. Of the modifiable risk factors (hormone therapy (HT) use, physical inactivity, BMI, alcohol consumption), HT use and physical inactivity had the highest impact with PARs of 19.4% (15.9 to 23.2%) and 12.8% (5.5 to 20.8%), respectively, regarding overall invasive tumours. For ER+/PR+ tumours, the corresponding PARs were 25.3% (20.9 to 29.7%) and 16.6% (7.0 to 26.0%). The summary PARs (95% CIs) for HT use and physical inactivity together were 29.8% (21.8 to 36.9%) and 37.9% (30.6 to 46.2%) regarding overall invasive and ER+/PR+ tumours, respectively.

Conclusions The population-level impact of modifiable risk factors appears to be comparable to that of non-modifiable risk factors. Altering the prevalence of HT use and physical inactivity could potentially reduce postmenopausal invasive breast cancer incidence in Germany by nearly 50%, with the largest potential for reduction among ER+/PR+ tumours, the most frequently diagnosed subtype.