J Cancer Sci Ther 2017, 9:9(Suppl)
DOI: 10.4172/1948-5956-C1-112

Second hand smoking is positively associated with breast cancer risk but not with N-acetyltransferase 2 genetic variants among Arab women in Israel–a case-control study

Avraham Z[1], **Baron-Epel O**[1], **Hemmond SK**[2] and **Keinan-Boker L**[1,3]
[1]University of Haifa, Haifa, Israel
[2]University of California, USA
[3]Israel Ministry of Health, Israel
[4]Ziv Medical Center, Israel

Background & Aim: The effect of second-hand smoking (SHS) on breast cancer etiology is controversial. Genetic variants of the enzyme N-Acetyl-transferase 2 (NAT2) which is involved in the metabolism of tobacco carcinogens, may modify the association between SHS and breast cancer. The aim of the current study was to evaluate the relationship between SHS and breast cancer risk by NAT2 variants in Arab women in Israel, a unique population with high exposure to SHS and low active smoking and alcohol consumption rates.

Methods: This is a population-based case-control study consisting of never-smoking Arab women aged 30-70 from Northern Israel: 137 prevalent (diagnosed in 2008-2013) breast cancer patients and 274 population- based controls. All participants were interviewed using a detailed questionnaire relating to past and current exposure to SHS and to socio-demographic, gynecological and obstetric characteristics. Each participant provided a buccal smear for NAT2 genotype analyses. Logistic regression models adjusted for potential confounders and stratified by NAT2 variants were used to assess the association between SHS and breast cancer.

Results: SHS was associated with breast cancer risk with an adjusted odds ratio (OR) of 2.14 (95% confidence interval, CI 1.21-3.78). Higher exposure to SHS was associated with higher risk of breast cancer compared to never exposed women, those exposed to SHS during childhood, adolescence and currently had an OR of 3.60 (95% CI 1.85-7.21) while those exposed during adolescence and currently but not during childhood had an OR of 1.73 (95%CI 1.05-2.86). NAT2 variants did not modify these associations.

Conclusions: SHS exposure in Arab women that never smoked is associated with increased risk for breast cancer. NAT2 genetic variation does not seem to play a role in the association. Additional studies are needed in order to support these findings.

zipi.a@ziv.health.gov.ilwW

Notes: