158P Obstructive sleep apnea and breast cancer incidence: A systematic review and meta-analysis

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Background: Obstructive sleep apnea (OSA) is a prevalent form of sleep-disordered breathing. Emerging evidence from animal models suggests that intermittent nocturnal hypoxia in OSA may induce carcinogenesis. However, epidemiological studies have reported conflicting findings on this relationship. We conducted this systematic review and meta-analysis to evaluate the association between OSA and breast cancer - the most common cancer in women worldwide.

Methods: PubMed, Embase, Scopus and Cochrane Library were systematically searched for observational studies published until 15 November 2020, in adults aged $\geq$18 years, reporting objective measurements or clinical diagnosis of sleep apnea and the association with incident breast cancer. Maximally covariate-adjusted hazard ratios (HR) were pooled using the generic inverse variance method and random effects model on RevMan. Pre-specified subgroup analysis was performed for studies with median follow-up duration $\geq$5 years. Two reviewers independently assessed risk of bias using the Newcastle-Ottawa Scale.

Results: 7 studies totalling 5,370,466 participants were included from 1,707 search results. All studies used International Classification of Diseases codes to classify OSA and breast cancer. Compared to controls, those with OSA had 43% higher pooled hazards of breast cancer (HR=1.42; 95%CI 1.09-1.85, I^2=96%, P=<0.00001). Out of 7 studies, 5 adjusted for type 2 diabetes mellitus, 4 adjusted for age and obesity, and 3 adjusted for sex and hypertension. In a subgroup analysis of studies with median follow-up duration $\geq$5 years, the pooled HR increased to 1.74 (95%CI 1.10-2.77, I^2=90%). There were insufficient studies to assess publication bias.

Conclusions: This meta-analysis suggests that OSA is a risk factor for breast cancer. However, animal models and prospective studies adjusting for additional confounders specific to breast cancer should be done to strengthen the evidence base. Further studies are needed to determine if a dose-response relationship exists with rising OSA severity, and if OSA increases the aggressiveness and progression of breast cancer. Importantly, clinical trials are needed to assess the potential impact of timely OSA treatment in mitigating breast cancer risk and progression.

159P Obesity and oral contraceptives reduce the preventive benefit of breastfeeding against breast cancer in Mexican women

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Background: Breast Cancer (BC) is the leading cause of dead in women over 25 years in Mexico, there are reproductive risk factors associated with BC, these factors include obesity, menarche, number of pregnancies, age at the first childbirth, duration of breastfeeding, use of oral contraceptives (OC), menopause and hormonal therapy. Among risk factors, breastfeeding is particularly interest for BC prevention. Breastfeeding in Mexico has decreased dramatically in the last 20 years and obesity, and the use of OC have been on the rise. The objective of this study is to identify whether the protective factor of breastfeeding against breast cancer is affected by obesity and OC use.

Methods: We conducted a case-control study in women aged 30-81 years from Oncology Service, UANL in Mexico. We included 336 BC cases, and 336 controls (matched by age). Information regarding of breastfeeding and reproductive factors was collected. Odd ratios and 95% confidence intervals (CI) were calculated using multiple logistic regressions, and a chi-square.

Results: We found that women who had at least one child, presented protective effect against BC (OR 0.034; 95% CI 0.008-0.140). The women who had taken a OC (OR 2.334; CI 95% 1.565-3.481) and whom who had obesity (OR 4.356; CI 95% 2.969-6.322) had higher risk of BC. BC cases that breastfeed more than 13 months were stratify by use of OC, we found an increased risk in patients that use OC vs non-OC consumers (p=0.004).OC consumers that breastfeed after 30 years has an increased risk compared with patients non-OC consumers (p=0.013).

Conclusions: Obesity and OC decrease the protection effect of lactation on BC.

160P Distribution of mammographic density and its relationship to age in men

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Background: While the distribution of mammographic density and its inverse relationship to age have been described in women, such characterization is lacking in men.

Methods: A total of 791 diagnostic mammograms with digital breast tomosynthesis performed in men at a single academic institution were reviewed retrospectively to describe breast density in ACR BI-RADS classes. The relationship between breast density and age was examined using one-way analysis of variance with ranks.

Results: Almost entirely fatty breasts were the most common in men (61.9%), followed by the categories of scattered fibroglandular density (31.5%), heterogeneously dense (5.7%), and extremely dense (0.9%). While age had a statistically significant effect on breast density (P=0.041), the effect was attributed to a modest increase in breast density at extremes of age (<40 and $\geq$80 years). No statistically significant difference in breast density was seen from the age of 40s to 70s (P=0.224).

Conclusions: Mammographic density in men is heavily skewed towards low-density categories. Unlike in women, no general trend between age and breast density exists in men. The determinants and implications of high breast density in men remain to be investigated.

161P Impact of HIV infection on mortality rate and overall survival of women with breast cancer in a Haitian Metterei Cancer Clinic

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Background: The prevalence of HIV infection in Haiti is around 2%. Patients with HIV infection are more likely to develop neoplasms than HIV-negative individuals and have a poorer outcome. This main objective of this study was to determine the impact of HIV infection on mortality and overall survival of women with breast cancer.

Methods: A four-year retrospective study was conducted in the cancer program of Innovating Health International (IHI). We included all women with breast and a known HIV status enrolled from January 1st, 2016 to December 31st, 2019. Date of admission, age, cancer stage, antiretroviral therapy status for HIV-infected patients, outcome as of December 31st, 2019 and date of death were the main variables selected for the chart review. We sought to evaluate if HIV infection was associated with increased mortality rate and reduced survival in our setting.

Results: Of the 1039 women with breast cancer managed during the study period, 512 (49.3%) had a known HIV status. Sixteen of them (3.1%) were HIV-positive. Their mean age was 43.4 years [range: 34-59] versus 49.6 years [range: 27-92] for the HIV-negative patients (p = 0.04). 50% of the women were already known HIV-positive before their admission to cancer care and on antiretroviral therapy. HIV-positive women with breast cancer were more likely to have stage IV disease (Odds ratio (OR)= 2.9 [95% CI, 1.1 — 7.8], p = 0.03) or die (OR=1.1 [95% CI, 0.3 — 3.8], p=0.8) than HIV-negative ones. The mortality rate was 25% [95% CI, 7.3% — 52.4%] versus 26.6% [95% CI, 22.8% — 30.7%] for the HIV-negative women (p=0.82). Median survival was not yet reached for both subpopulations, and mean survival was 17.2 months for HIV-positive patients versus 34.3 months for HIV-negative ones (Logrank p=0.25).

Conclusions: Women with breast cancer and HIV infection were significantly younger and more likely to have metastatic disease than HIV-negative ones. HIV infection was not associated with reduced mortality rate or overall survival in our cohort.