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32nd Annual Conference of the International Society for Environmental Epidemiology

ABSTRACT E-BOOK

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Advancing Environmental Health in a Changing World

ISEE 2020

August 24-27, 2020

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E-POSTER ABSTRACTS

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Theme: **Cancer risks**

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Socio-environmental exposures explaining the opposites spatial patterns of mortality due to breast and cervical cancer in Argentinean women

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Authors: S. Pou, C. Niclis, N. Tumas, M. Butinof, M. P. Díaz;
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Background: This work aimed to characterize the spatial patterns of breast (BC) and cervix (CC) cancer mortalities in Argentina (2013-2015) and to propose a socio-environmental model explaining the observed differences. Methods: An ecological multigroup design (n=511 counties nested in 24 provinces) were carried out in Argentina. Age-standardized mortality rates (SMR) of BC and CC by county were estimated. Using the 2013-2015 average rates, a Getis-Ord analysis was performed to identify spatial clusters of high (hot spots) and low (cold spots) values of SMRs. A two-level logistic regression model was fixed to assess the relationship between the presence of hot and cold spots of each cause, accounting for the spatial variability. Finally, mixed-effects Poisson models were fitted using BC or CC SMRs as outcomes, and agricultural activity -AA- level (null/intermediate/high), urban scale (big cities/middle-sized or small cities/towns) and % households with unsatisfied basic needs (UBN) as fixed effects-covariates, including a random intercept (province as clustering variable). Interaction terms between AA and UBN levels were included. Results: Mortality spatial patterns were opposite between CC and BC. The presence of BC hot spot was significantly associated with the presence of CC cold spot. Increased risk of BC mortality was associated with a higher AA level. This effect was not independent of UBN, given that in the intermediate AA areas, UBN was inversely associated with BC mortality. Besides, lower BC mortality risk was linked to the smallest urban scales (vs. big cities). An opposite effect of the urban scale was observed for CC mortality. Significant interaction terms between AA and UBN levels were found, showing that in areas with high AA, increasing NBI was associated with higher CC SMR. Conclusions: Concomitant socio-environmental exposures linked to socioeconomic conditions, anthropic exposures and urbanization could explain the differences between BC and CC mortality spatial patterns in Argentina.

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