

Estimation of incidence of breast cancer in young women with SARAR models. First results of the WASABY Project

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Objectives

In the framework of the WASABY Project, the aim is to present the first results of the estimation by Census Tracts (CTs) of breast cancer incidence risks, using the cases already made available by some of the participating Cancer Registries (CRs).

Methods

Six Italian, one Portuguese and five Spanish CRs already provided 20906 incident cases of 0-49 years old women with breast cancer, geo-coded by their CT of residence at the time of diagnosis. The considered incidence period is ten years in the range 1996-2015. Starting from the observed SIRs (reference for expected cases: the area covered by the CRs, using the Standard World Population), the incidence estimates were calculated using spatial auto-regressive models with the effect of auto-regressive disorder and exogenous covariates (SARAR models). Exogenous variable is the 2001 or 2011 European Deprivation Index in its quantitative version, computed at CT level. The analyses were conducted separately for each CT, using the *spreg* module in Stata 14.0.

Results

The models, all statistically significant, made it possible to identify areas with higher than average incidence risks. In five RTs (ASL 3 – Napoli Sud, Parma, Ragusa, Basque Country and Granada), a feeble, but statistically significant, effect of the covariate on the estimates was observed.

Conclusions

These first results want to be mainly an element to discuss the goodness of the SARAR models, in order to select the best model for the study, starting from the second half of 2019. However, it is also interesting to note how it is possible to obtain a valid and reliable map of the estimated excess risk, excluding or including the socio-economic covariate with respect to its statistical significance, and, consequently, allowing to hypothesize other risk factors spread over the territory.