

Peritoneal mesothelioma and asbestos exposure: a population-based case-control study in Italy, 2000-2021

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Dario Consonni, Enrica Migliore, Manuela Gangemi, Domenica Cavone, Luigi Vimercati, Sara Piro, Lucia Giovannetti, Valentina Zabeo, Vera Comiati, Stefania Curti, Stefano Mattioli, Maria Teresa Landi, Carmela Gioscia, Silvia Eccher, Stefano Murano, Flavia D'Agostin, Carlo Genova, Riccardo Perdur, Iolanda Grappasonni, Fabrizio Stracci, Ilaria Cozzi, Tommaso Staniscia, Franco Calist, Italo Francesco Angelill, Rocco Galasso, Federico Tallarigo, Giuseppe Cascone, Massimo Melis, Susan Peters, Hans Kromhout, Alessandra Binazzi, Alessandro Marinaccio, Carolina Mensi; ReNaM Working Group

Objectives

Using a case-control design, we examined the association between occupational asbestos exposure and risk of peritoneal mesothelioma in the general population in Italy.

Methods

From the National Mesothelioma Registry, we selected cases (2000-2021) with life-time occupational history. Controls were 3045 from three case-control studies (region-sex-age-matched, performed in six regions), one in 2002-2004 (2116 population controls) and two in 2012-2016 (718 population and 211 hospital controls). For all subjects, exposure assignment was based on a quantitative job-exposure matrix (SYN-JEM). Qualitative expert-based evaluation was available for all cases, but only in 2012-2016 for 929 controls. We estimated ORs and 90% CIs using logistic regression models adjusted for residence, gender, period and age.

Results

In complete analyses (1591 cases, all years/regions), the OR for ever exposure was 3.66 (CI 3.21 to 4.18, 45.4% cases and 27.8% controls exposed). Among the exposed, median cumulative exposure (fibres/mL-years) was 1.4 (max 20.0) in cases and 1.1 (max 10.9) in controls. The OR was 1.55 (1.48 to 1.62) per log10-transformed cumulative exposure. In analyses restricted to 290 cases (same years/regions of controls), ORs were 3.35 (2.57 to 4.37, 43.8% cases exposed) for ever exposure and 1.52 (1.39 to 1.65) for cumulative exposure. ORs for ever asbestos exposure using expert-based evaluation were particularly high, 4.32 (3.50 to 5.34, 53.9% cases and 26.4% controls exposed) in complete analyses (778 cases) and 6.35 (4.58 to 8.81, 57.1% cases exposed) in restricted analyses (245 cases), but are known to be more prone to bias.

Conclusions

Peritoneal mesothelioma showed clear associations with asbestos exposure using different exposure assessment methods.

Keywords: Asbestos; Epidemiology; Mesothelioma; Occupational Health; Retrospective Studies.

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