

Breast cancer in priests: follow-up of an observation made 167 years ago

Lin Fritschi · Pascal Guenel · Wolfgang Ahrens ·
The European Study Group on Occupational Causes of Rare Cancers

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In 1842, Dr Domenico Antonio Rigoni-Stern presented his research on mortality in Verona to the Congress of the Italian Scientists [1]. One of Rigoni-Stern's better known findings was that the risk of breast cancer was greatly increased in nuns compared to other women. Another of his observations, and one which remains intriguing today, is his statement: "I cannot conclude without saying that the four men found to have died of breast cancer were all priests".

Our current theory of breast cancer suggests the causative mechanism in females may be high lifetime exposure to estrogens and progestins [2]. The causes of male breast cancer are less clear and may involve alcohol intake [3] or hormonal factors [4].

We examined Dr Rigoni-Stern's observation using a European population-based case–control study of rare cancers [5]. Cases were males aged 35–70 years, diagnosed with cancer of the breast, and living in the study areas in Denmark, France, Germany, Italy, Sweden, Latvia, Portugal and Spain [3]. Controls were frequency-matched to the distribution of all the study cases by age, sex and

geographic area. Response fractions overall were 61% for controls and 87% for cases.

An occupational history of all jobs held for 6 months or more was obtained using a structured questionnaire and each job was classified according to the International Standard Classification of Occupations (ISCO) [6].

Using logistic regression and adjusting for country and age, we calculated odds ratios (OR) and 95% confidence intervals (CI) for ever working as a priest (ISCO-68 code 1-41.20), minister (1-41.30) or other religious worker (1-41.40 or 1-41.90).

There were 104 breast cancer cases and 2078 controls and of these, 1 case (0.96%) and 7 controls (0.34%) had ever been in religious work. The adjusted OR was 2.55 (95% CI 0.29–22.70).

Previous cohort studies of male religious workers have not reported risks for breast cancer [7–13]. A study using combined data from Nordic cancer registries [14] reported a standardized incidence ratio for breast cancer of 0.89 (95% CI 0.61–1.25) for males in the occupational group "Religious, juridical, and other social-science-related workers" which includes lawyers, librarians and various social scientists as well as religious workers.

Selection bias is unlikely in this study as the response fractions were relatively high and as an educated professional group with, presumably, an interest in the public good, both case and control religious workers may be more likely to participate than the general population. We do not think that we would have missed exposed cases due to early death as religious workers would generally have good access to medical care.

One possible explanation of the observation of Rigoni-Stern is misdiagnosis of breast cancer in males. In the nineteenth century it is possible that ulcers of the breast might have been confused with breast cancer, but there is

The details of The European Study Group on Occupational Causes of Rare Cancers is given in appendix

L. Fritschi (✉)
Western Australian Institute for Medical Research,
University of Western Australia, Perth, Australia
e-mail: fritschi@waimr.uwa.edu.au

P. Guenel
CESP Center for Research in Epidemiology and Population
Health INSERM, University Paris-Sud 11, Villejuif, France

W. Ahrens
Bremen Institute for Prevention Research and Social Medicine,
University of Bremen, Bremen, Germany

no reason to think that priests would be more likely than other men to develop such a condition.

In conclusion, while the excess of breast cancer incidence in nuns reported by Rigoni-Stern has been confirmed by other studies [15], his intriguing observation regarding an excess in priests remains unconfirmed despite the use of modern case–control methods.

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Appendix

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