Potential Causes for the Remarkable Increase in Breast Cancer Incidence in the Netherlands

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Keywords: breast cancer incidence, screening, risk factors

Abstract

Background: Though some countries recently reported a decline in breast cancer incidence, The Netherlands is faced with a remarkable increase over the last two decades. Screening-related temporary increases in breast cancer incidence are visible as expected, but the increase remains after full implementation of the programme. Also, incidence rates in women 45–49, who are not invited for screening, are considerably higher in recent years. Therefore, other causes must be considered.

Objective: To identify the potential causes for the increase in breast cancer incidence in The Netherlands.

Methods: Information was collected on breast cancer incidence, breast density, age at first birth, and use of HRT, over time, using different sources.

Results: Breast cancer incidence rates increased from 255/100,000 in 1989 to 351/ 100,000 in 2003 for women aged 50–74 and from 183/100,000 to 237/100,000 for women aged 45–49. The frequency of women with mammographic dense breast patterns increased over time, especially in younger women. Age at first birth increased from 24 to 29 years in 2005. Use of HRT has been consistently low and even decreased from 6% to 3% in 2004 after publication of the WHI trial and the MWS.

Conclusion: The changing profile of risk factors in the population seems to tie in with the observed increase in breast cancer incidence. The results of this study corroborate that integrated data on the factors studied above and possibly other factors are needed to unravel their potential contribution to increased breast cancer incidence. To enable this, a grant application will be prepared to set up a population survey on risk factors for breast cancer and link the results to data of the national screening programme and cancer registry.

The Recent Decrease in Breast Cancer Incidence: A Screening Effect?

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Keywords: breast cancer incidence, screening, HRT

Abstract

Background: The U.S. National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) program data have recently been published, showing a marked decrease in breast cancer incidence in women over 50 during the first years of this decade. The authors attributed this decrease to a declining use of hormone-replacement therapy (HRT), even if they did not rule out a contributing effect of mammography screening.

Objective: The aim of our project is studying breast cancer incidence in Torino and investigating, by individual record linkage, how the trend is affected by any changes in mammography screening.

Methods: We analyzed breast cancer incidence time trends from 1985 to 2003. Screening histories were obtained through record linkage of cancer registry and screening files.

Results: In all ages combined, age-standardized incidence decreased at a statistically significant annual estimated change of -2.6% from 1999 to 2003. The decrease was steeper in the period 1999–2001 (-3.1%). This trend was restricted to women in the older age classes. This analysis represents the first demonstration of a decline in breast cancer incidence in the early years of this decade outside the United States.

Conclusion: In our data, the trend in invasive breast cancer incidence is largely explained by the slow increase during 1992–1999 of screen-detected cases at first screen and by their decrease thereafter. Such an interpretation may be relevant to other geographical areas in which organized or spontaneous screening reaches a plateau after an increase in the preceding years. The link with the population pharmaceutical prescription files is in progress in order to directly investigate the role of HRT.

Immense Increase in Lifetime Risk for a Dutch Woman to Develop Breast Cancer

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Keywords: lifetime risk, breast cancer

Abstract

Background: The prominent burden of breast cancer in the female population and the increased incidence in The Netherlands instigates the need to increase awareness and keep the individual woman up-to-date about her risk to develop breast cancer.

Objective: To provide information on the current lifetime risk for a Dutch woman to develop breast cancer (both invasive and in situ carcinoma).

Methods: Incidence data were obtained from The Netherlands Cancer Registry and Statistics Netherlands. We used two methods to calculate the lifetime risk for the period 1989–2003: the classic cumulative risk and the more appropriate life table method.

Results: The life table risk to develop breast cancer increased from 1 out of 10 in 1989 to 1 out of 7 in 2003; the cumulative risk in 2003 was 1 out of 6. The life table risk before the age of 75 was 1 out of 10 in 2003.

Conclusion: These results show a huge increase in risk to develop breast cancer during the last two decades. As it appears, the life table method is the preferred method to use for the calculation of the lifetime risk. Communication of the true risk is essential to increase awareness and encourage women to pay attention to their own breast health.

Effect of Mammography Examination Volume on the Incidence of Breast Cancer in the Czech Republic

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Keywords: breast neoplasms, mammography, regression analysis, incidence

Abstract

Background/Purpose: The organized breast cancer screening program in the Czech Republic was initiated in September 2002. However, screening mammography examinations had already been frequently used, and screening occurring outside the organized program is still significantly prevalent. The latest epidemiological data show a drop in disease incidence rates.

Objective: The purpose of this study was to examine the association between the volume of mammography examinations (both inside and outside of the organized program) and observed incidence of invasive breast cancer.

Methods: The analysis included breast cancer cases diagnosed in women aged 40–85 years in the period 2000–04. As a proxy variable for screening mammography volume, relative number of active mammography machines was used. A Poisson regression model was designed and relative risks with 95% confidence intervals (CI) were computed. Adjustments were made for age, region, and temporal trend of disease incidence.

Results: Following relative risk estimates (associated with increase of mammography machine counts by 1 per 100,000 women) were obtained by the model: 1.066 (CI 1.039–1.094), 1.001 (CI 0.976–1.027), 0.953 (CI 0.917–0.990), and 0.953 (CI 0.913–0.994) for breast cancers of stages I, II, III, and IV, and 1.045 (CI 1.022–1.069) as the mean effect. Differential effect for various age groups was not confirmed (p-value for removal 0.1).

Conclusion: Observed data support the hypothesis of a possible relationship between breast cancer incidence and number of diagnostic devices. Estimates also indicate a decrease in advanced cancer rates associated with screening. Further analysis using mammography volume figures and extended time series is required and will be part of the poster presentation.