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Abstract Title:

An ecological analysis of breast cancer mortality and the impact of screening

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Abstract

An ecological analysis of breast cancer mortality and the impact of screening

Background

Breast cancer is the leading cause of cancer incidence and mortality in females in Malta. On average 321 new cases of breast cancer are diagnosed each year and 80 die from it (3 year average 2013-2015). Whilst showing a decreasing downward trend in breast cancer mortality locally similar to trends observed for the EU average, mortality rates from breast cancer have been persistently higher in Malta. The National Breast Screening programme was introduced in Malta in October 2009 started by targeting women in the age group 50-60 years. The aim of this study is to evaluate whether breast cancer screening has had any impact on mortality in those age groups being screened in the period post screening up to 2016.

Methodology

An ecological population based study was conducted to evaluate trends in mortality rates from breast cancer in different age groups to assess the impact of breast screening on mortality. Age specific mortality rates from breast cancer were obtained from the National Mortality Registry for the period 2004-2016. Poisson regression analysis was carried out to compare differences in trends in mortality in the age cohorts undergoing screening and those who did not over time, taking into consideration the implementation year of screening for the different ages.

Results

A significant ($p < 0.001$, $RR=0.60$) negative association was found between screening and breast cancer mortality with much lower mortality rates than predicted in those age cohorts who had been invited for screening previously.

Conclusions

This study was a first attempt at an ecological level to evaluate whether the introduction of the national breast screening programme at this relatively early stage (7 years following its introduction), has shown any positive results in terms of mortality. Our results suggest that the investment in the programme is reaping benefits and encourages further development of the service.