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Use of hormone replacement therapy and the sensitivity of screening mammography

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Some studies have suggested that use of hormone replacement therapy (HRT) reduces the sensitivity of screening mammography while others have failed to demonstrate this link. All studies have had limited statistical power. We examined the relationship between self-reported HRT use and the sensitivity of screening mammography in women attending for first round screening with BreastScreen Victoria in 1994. Women with a personal history of breast cancer and women who were not resident in the state of Victoria at the time of screening were excluded. Screening is biennial with two-view mammography and double reading. The screening program is specifically targeted to women aged between 50 and 74 years although women aged between 40 and 49 and women older than 75 can attend for screening.

The sensitivity of screening mammography is the number of screen-detected invasive breast cancers (true positives) divided by the sum of the screen-detected invasive cancers (true positives) and interval invasive cancers (false negatives). We compare the risk of a false negative screen according to whether a woman is taking HRT at the time of screening and adjust for the effects of possible confounding variables using logistic regression analysis.

In women taking HRT at the time of screen there were 132 screen-detected invasive cancers and 69 interval invasive cancers; in women not taking HRT there were 458 screen-detected invasive cancers and 130 interval invasive cancers. In HRT users the sensitivity was 65.7% (95% CI 63%–68%) and in the non-users it was 77.9% (75%–81%). Hormone users were nearly twice as likely to have a false negative screen (unadjusted odds ratio 1.84, 95% CI 1.3–2.6) an effect that remained after adjusting for age and self-reported family history of breast cancer (adjusted odds ratio 1.65, 95% CI 1.2–2.4).

The lower sensitivity of screening mammography in HRT users is probably due to the fact that high breast density is more common in HRT users and high breast density is associated with lower mammographic sensitivity.

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Mammography screening in Norway. Is it cost effective?

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Purpose: Mammography screening is a promising method for improving prognosis in breast cancer. However, the screening procedure involves substantial expenses for governments or health insurance organisations. This study was undertaken to document value for money in mammography screening in Norway.

Methods: The Norwegian Mammography Project (NMP) invited in 1996 60,147 women aged 50–69 years to a 2-yearly screening programme and achieved a compliance rate of 77%. Cost data (1996) from the NMP, the tariff of the National Health Administration (NHA) and the Norwegian Medical Association and survival data from Statistics Norway and the National Cancer Registry (NCR) were implemented in a model for cost-effectiveness analysis in mammography screening. A 5% discount rate was employed and £1 (BP) was calculated 11 N.O.K.

Results: The NMP cost for 1996 was £2,937,931 and the production loss was estimated £429,083. The cost of more breast conserving surgery (BCS) and the diagnosis pushed forward (2 years) in the screening situation was estimated £132,178. Stage I disease is more common in screening and money spent on adjuvant hormonal and/or chemotherapy can be saved. A total amount of £56,841 was calculated in this study. The follow up costs (10 years) and costs due to relapse (1% per year) in the preserved breast (in BCS) were calculated £50,493. A survival gain of 15 years per prevented breast cancer death indicated a cost per life year saved of £8,561.

Conclusion: Mammography screening in Norway is cost effective.

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Russia (St.-Petersburg)/WHO randomized prospective study of the role of BSE in reduction of breast cancer mortality

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The major objective of the study is to determine the effect of a breast self-examination (BSE) programme on mortality from breast cancer. A population of 122 000 women aged 40 to 64 has been defined in St.-Petersburg and randomized to study and control groups. 954 breast cancer (BC) patients (pts) were registered in the studied population during the period of January 1985–January 1994. 498 BC pts were registered in the BSE group, and 456 pts – in the control one. During the 10 years of follow-up 257 BC pts died; 122 of them in the main group and 135 in the control one. Median follow-up was 63 months. It was found out that overall 10 years survival rate in the BSE group made up 65%, and control one 54.8% ($P > 0.05$). There is no significant difference in mortality between BSE and control groups. The follow up is planned to last until year 2000.

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Östergötland mammographic screening programme: Compliance, referral rate, and risk of interval breast cancer after a negative screen

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Purpose: To investigate the attendance rate, referral rate, and the incidence risk of interval breast cancer in women participating in breast cancer screening.

Method: Retrospective study based on a mammographic screening programme for women aged 40–74 years carried out as a randomised cohort trial under 1978–1986 and as a regular screening under 1987–1995 in the county of Östergötland.

Results: The average attendance rates were 85.5% at the initial and 81.3% at subsequent screenings. There was no significant difference between women aged 40–49 years and 50–69 years. The mean referral rates were 1.51% for the whole period and 1.1% for the regular screening period (1987–1995). The average referral rates were at the initial screening 2.0% and 0.9%–1.1% at subsequent screenings. In the regular screening the average incidence of interval cancer was 1.42/1000 (no time limit for the interval between the latest screen and diagnosis). The risk of developing interval cancer was 0.46/1000 for tumours detected within 1 year of the latest screen and 1.2/1000 for tumours detected within 2 years. The incidence risk was roughly the same in all age groups.

Conclusions: At subsequent screenings a high attendance rate can be maintained by adjustments of the programme to local conditions. The study confirmed the lower referral rate at subsequent screenings. The risk of developing interval cancer increased with time after the latest screen. Neither the rate of referrals for further examination nor the age of the patients were correlated to the incidence risk of interval breast cancer.

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Screening women with a family history of breast cancer – Results from a national audit

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An audit was performed of all breast units in the UK who offered a screening service for women with a family history of breast cancer. A total of 19 units were able to provide data on 8236 women. All women were under age 50 with a family history of at least 1 first-degree relative affected with breast cancer before age 50.

The cancer detection rate was 4.9/1000 at prevalent screen and 4.4/1000/year at incident screen. The interval cancer rate was 2.3/1000/year.

Of the 76 cancers detected by screening, 21.1% were DCIS. Of the invasive cancers 42.3% were <15 mm and 55.8% were node-negative. Mean age at diagnosis was 42.5 years.

This audit suggests that screening women under age 50 with a significant family history of breast cancer is worthwhile and that cancer detection rates