

Breast cancer mammography screening for low-risk women in South Africa

■ To the editor:

The recently published opinion by Prof J Apffelstaedt reflecting on the US Preventive Services Task Force (USPSTF) breast screening recommendations from a South African perspective refers.¹ The conclusion of this opinion is that currently available data indicate that breast cancer screening in South Africa should start at the age of 40 years. This opinion is based on three arguments. The first argument is that no reliable data are available for the South African population, and the incidence of breast cancer is higher and the disease is diagnosed at an earlier age in African American² and Malaysian women.³ The second argument is that the author is part of a unit that offers high quality mammography screening,⁴ and the third is that the most important "harm" attributable to mammography is a negligible risk of radiation.¹

The issues that should be considered when screening women in the general population at low risk for developing breast cancer are related to the prevalence of the disease, as well as the characteristics of the test used for screening. Additionally, we should also consider the clinical evidence regarding benefit and harm when performing breast cancer mammography screening.

Mammography is dependent on breast density and it is well known that breast density of premenopausal women is higher compared to postmenopausal women. The test characteristics (sensitivity, specificity and predictive values) are not as good for premenopausal women as for postmenopausal women.⁵⁻⁸ Therefore, when women aged 40 to 49 years are undergoing mammography screening, a screening test that does not perform all that well is used to try and detect a disease that is not all that prevalent. The higher the prevalence of the condition screened for, the better the predictive value of a positive test.

Age is the primary risk factor for developing breast cancer. Worldwide, 85% of women diagnosed with breast cancer are postmenopausal. Premenopausal breast cancer is a disease with a much lower prevalence compared to postmenopausal breast cancer. The risk of a 50-year-old woman being diagnosed with breast cancer is nearly double, and her risk of dying from breast cancer is 2.5 times that of a 40-year-old woman. A 70-year-old woman has more than four times the risk of dying of breast cancer compared to a 40-year-old.⁹

A review of eight randomised trials concluded that mammography in 40- to 49-year-old women can reduce breast cancer mortality by 15% (not 60%). However, the absolute benefit in terms of lives saved is much smaller than in older women, because of the poorer sensitivity and the lower incidence of the disease in younger women.^{10,11} The number needed to screen 40- to 49-year-old women to prevent one breast cancer death after 11 years of observation is 1 904, compared to 1 339 for women 50 to 59 years, and 377 for women ≥ 60 years. Although it is cost effective, the estimated cost of screening is five times higher in the 40 to 49 year group compared to women ≥ 50 years.^{11,12}

The published South African data the author refers to eloquently illustrate the difference of age (and therefore prevalence of the disease) on the same screening test and, in fact, validate the USPSTF recommendations. The population that was screened in this audit is not described and it is unsure if this population is representative of the general population, or if it is a selected or referred population. Mammograms were performed using state-of-the-art equipment, and reported after double reading by highly trained and experienced staff. Of the 3 192 mammograms in the 40- to 49-year-old group, 152 (4.7%) were recalled, 61 (1.9%) were biopsied and 12 (0.38%) were diagnosed with cancer. In the ≥ 50 years group, there were 4 446 mammograms, with 238 (5.4%) recalled, 116 (2.6%) biopsied and 43 (0.98%) diagnosed with cancer. The screening outcome is 2.5 times better in detecting breast cancer in women ≥ 50 years compared to the 40- to 49-year-old group. It is evident that a significant number of women without disease in both groups were recalled and biopsied in the process.⁴

The issue of harm associated with breast cancer screening is important. A Cochrane review concluded that, for every 2 000 women invited for screening over a 10 year period, there would be one life prolonged, but 10 healthy women would receive unnecessary treatment exclusively due to mammographic screening, and a further 200 women would suffer significant psychological distress for many months as a result of false positive screening findings.¹³

Overdiagnosis, where a cancer that would never have presented clinically is detected and treated, is another problem associated with mammography.¹⁴ Most healthcare providers concerned with women's health will regard this as true harm and not "harm", as suggested by Prof Apffelstaedt.

What, then, should be the South African perspective of mammography for breast cancer screening? There is no formal screening or early detection programme implemented in South Africa and screening is mainly opportunistic.

Opportunistic breast cancer screening in South Africa is not based on epidemiological or cost-effective recommendations, but has become a commodity in the majority of cases. Any woman, regardless of risk or age, can go to a screening facility, of which the majority are in private practice, and request and undergo mammography screening if she wishes to do so. The screening report will usually have a recommendation (and sometimes an electronically communicated reminder) of follow-up mammography in a year's time. The only issue that will determine whether or not she has the test will be the issue of payment for the service. Some funders of private healthcare have also turned screening into a commodity by rewarding patients financially with points if they undergo regular screening. The reward is typically based on the number of screens, without taking into account the indication, age, background, risk and timing interval of the screening.

Without solid South African data available on which to base recommendations, we should be guided by what is happening in the rest of the world. The National Health Service (NHS) in the UK invites women aged 50 to 70 years for screening mammography every three years. This screening strategy is currently under scrutiny, with some reservations about its real benefit for individual women.¹⁴ The USPSTF recommends biennial screening for women aged 50 to 74 years. Screening in 40- to 49-year-old women should be recommended on an individual basis, taking into account patient context, including the patient's values regarding specific benefits and harms.¹¹

Recommendations for low-risk women in South Africa should be to start screening from the age of 50 years at two- to three-yearly intervals, and to stop screening at age 70 years. Women requesting screening before the age of 50 years should be counselled regarding the risks associated with premenopausal screening. In the absence of recommendations formulated on epidemiological data and principles, recommendations should be made on the basis of what is in the best interest of women undergoing screening, and not what is in the best interest of service providers with a vested interest in breast cancer mammography screening.

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