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Editorial Comment

Early breast cancer in Europe: progress and pitfalls in detection and management at the start of the new century

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1. Handbooks and controversies

At the beginning of the 21st century, some politically interesting, but scientifically rather infantile, controversies emerged on the (past) efficacy of mass breast screening provoked by Danish scientists working for the (divided) Cochrane collaboration [1]. Those who applauded or feared the single-minded logic of the quantitative evidence-based approach in modern medicine were well served by, on the one hand, a fantastic amount of dedicated work that a.o. exposed low absolute mortality gains of mass breast screening carried out during the 1970s and 1980s (if any) but also, on the other hand, a lack of perspective by the evaluators. The curious reader would not have needed the arbitrary disclassification of randomised trials of mass screening by the Cochrane executioners (as if a perfect trial of population-based screening of cancer exists at all). The informed reader would know that a significant effect on total mortality was unlikely to emerge, and would only be possible for those aged less than 55–60 years (at death), when mortality from breast cancer can comprise up to 15–20% of the total mortality, a percentage that rapidly decreases proportionally thereafter. In fact, the complexity of screening is clearly illustrated by the valuable (but thick) handbooks that also emerged in 2001 and 2002: the 251 page European guidelines for quality assurance in mammography screening [2] and the 226-page International Agency for Research on Cancer (IARC) handbook on breast cancer screening [3] which in fact addressed the problems raised by the Danes. Both reports concur in indirectly emphasising the complexity of screening, but do not adequately emphasise the importance of the political, social and medical context (that is so important considering the scale of the exercise). They also lack a clear communication for the public who are so easy to mislead with relative risks and statements on cost-effectiveness. That is a pity because the healthy, but worried, public needs this service for good reasons from their government or health insurers. Moreover, they should also be taught that there are substantial side-effects at the individual and group levels, and that there is therefore a cost for up to 10 years before the (modest) effects become visible. It is well known now that mass screening is complex and needs extensive logistics as well for aftercare and communication at the regional level. Moreover, substantial innovation is not only needed for many aspects of the process, but is also taking place more or less spontaneously or even provoked in the competitive medical market. Communication to policymakers and women on cancer screening should really improve, as is illustrated in the summarising table in a recent paper on the American situation that shows too frequent and too many false-positives [4] (Table 1). This shows the worrying tendency for potential medical overconsumption (if to prevent one death at least a 1000 women need to be screened for 10 years then hundreds of diagnostic procedures must be carried out). The elusive search for the quantitative truth of past imperfect screening by the Cochrane scientists also pretends that past efficacy (if present) would predict future effectiveness, albeit with different and changing circumstances of public awareness, spontaneous earlier detection and continuously competing innovations in mortality-lowering interventions. Such interventions include the skills needed to manage impalpable lesions, attain less invasive staging, administer adjuvant systemic and radiotherapy and last, but not least, manage high-risk familiar breast cancers.

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Table 1
Outcome per 1000 screened women, who (bi)annually undergo breast screening (in the USA) over 10 years according to age at start (40, 50 or 60 years) [4]

Outcome features of screening	Age 40 years	Age 50 years	Age 60 years
Cumulative risk of breast cancer death in the next 20 years[a] (to be affected by screening in next 10 years)	1%	1.5%	2%
⩾1 false-positive mammogram	560[b]	470[b]	260[b]
⩾1 histological biopsy (needle or excision)	190[b]	190[b]	190[b]
Diagnosis of breast cancer	15	29	37
Cured of breast cancer (despite screening)	8	14	18
Cured of breast cancer (by screening)	2	4	6
Diagnosis of ductal carcinoma *in situ*	3	7	7

[a] Based on European mortality rates.
[b] Could be more than 60% lower in a well-organised programme.

Black and colleagues [5] clearly showed that most cancer screening trials could not have affected total mortality because tumour-specific mortality is proportionally small and several bias interfere with a clear result in this respect (over- and underattribution to screening), and in fact warned that a non-high risk population-based strategy is a risky one in terms of success. Complex things should be done by 'real pros', but these are usually in short supply.

The past 25 years or more show clearly that in breast cancer progress, as in the medical management of chronic disease, is seldom obtained by one breakthrough, but rather by a combination of a variety of small steps. This is certainly the case when the cause(s), the pathogenesis and/or the forces of progression of the cancer at stake are not well understood.

Although this issue of the *European Journal of Cancer* is not a 'commissioned' Special Issue with invited contributions around a common theme, it has gradually developed into one as a result of the spontaneous contributions we received on early detection and mass and other screening studies as well as subsequent diagnostic medical care from Italy, The Netherlands, Germany, Sweden, the UK, France and Switzerland. Some are basic contributions on the nature of breast cancer biology and treatment, and aspects of pathological staging. An interesting trial examining the need for post-operative radiotherapy offers a wide perspective on the problems of the appropriate management of early cancer. 'Do not harm' seems to be a more complicated strategy than the reverse. I would have expected much more attention to be paid to communication to the women in Refs. [2,3] and that is why we included the slightly adapted table from Fletcher [4] and also a paper from an ex-patient, Hazel Thornton, on the necessity of education and honest information (see this issue). Not only must the doctors know everything, but women must also be better informed about the complex issues and modest effects of mass screening. At the other end of the spectrum, the evaluative paper by Madlensky and colleagues (see this issue) takes the necessary wider view of the evaluation of organised screening, and tries to compare it with the situation of opportunistic screening that can also be increased by mass screening programmes. It specifically addresses the need for manpower planning that takes the increased demand for specialised services into account, especially as it is now being increasingly recognised that sub-specialisation is required to obtain optimal results. However, the consequences of this on manpower (together with the feminisation of medical manpower) should be made explicit in the planning process because somebody, preferably the (healthy and worried) public, has to pay for it.

The overview paper on trends in breast cancer incidence and mortality across Europe, based on data from mortality statistics and using data from more than 100 cancer registries (see this issue), is of course more valuable than all the separate papers on specific trends in incidence or mortality or survival (in specific countries) and provides the proper background for all the other articles. Before the mid-1990s, incidence was still rising in most countries by 1–3% annually in the prescreening era; yet, the temporary increases especially at the first screen never returned to prescreening levels, which suggests that the incidence-promoting influences, such as the combined effect of a low fertility rate, late age at first pregnancy and oral anti-conceptive use (OAC) use are still on the rise. Fortunately, mortality is already decreasing in Northwestern Europe, for which there is the usual discussion on the effects of screening, tamoxifen and better surgical management and irradiation. The recent paper on the positive, but modest, influence on breast cancer mortality of 10 years of mass screening from The Netherlands [6] may be encouraging because these effects were realised on a national scale. Readers are invited to seek arguments for their views in this respect.

2. Conclusions

Mass screening for breast cancer in Europe is on firm ground, but will not solve the breast cancer problem.

The enormous activities currently deployed and those in the near future will only subside if the population becomes so well-informed that many low-risk women decide that there is little to be gained from screening. It could be that future innovations will determine better alternatives for prevention or treatment.

References

1. Olsen O, Gotzsche PC. Cochrane review on screening for breast cancer with mammography. *Lancet* 2001, **358**, 1340–1342 [systematic review of screening to be obtained through Lancet Publishing Group, 2001].
2. Perry N, Broeders M, de Wolf C, Törnberg S, *et al. European Guidelines for Quality Assurance in Mammography Screening*, 3rd edn. Luxemburg, Office for Official Publications of the European Communities, 2001.
3. IARC Working Group on the Evaluation of Cancer Preventive Strategies. *Breast Cancer Screening, Vol. 7*. Lyon, IARC Handbooks of Cancer Prevention, 2002.
4. Fletcher SW, Elmore JG. Mammographic screening for breast cancer. *New Engl J Med* 2003, **348**, 1672–1680.
5. Black WC, Haggstrom DA, Welch GA. All cause mortality in randomised trials of cancer screening. *JNCI* 2002, **94**, 167–173.
6. Otto S, *et al. Lancet*, 2003, in press.