Global summit on mammographic screening

Forty years of clinical trials, the contribution of hundreds of scientists and health workers and the dedication of hundreds of thousands of women to participate in studies lasting for decades has resulted in adequate evidence to support the efficacy of mammographic screening for breast cancer, which now allows its transfer to the arena of public health policy. Doctors and women can be assured that participation in organised screening programmes, with rigorous quality assurance standards implemented, is of benefit, provided appropriate diagnostic investigation and treatment is available. Special efforts should be made to encourage screening among the more deprived members of society. It is important not to overemphasise the benefit of screening, and to appreciate that this is but one step in the total management of women with the disease. Women should, however, be informed clearly of the level of benefit and of potential risks and costs.

The Milan Global Summit on Mammographic Screening, having examined recent results from all seven randomised trials of screening, concluded that evidence of benefit was convincing and that it was now time to move on. Attention should now focus on the further development of organised programmes of mammographic screening on a population basis, and insistence on quality assurance and meticulous evaluation.

Breast cancer is a major public health issue worldwide; according to present estimates, one million women will be diagnosed with breast cancer this year. There are no longer any countries in which the incidence is truly low. Clinical and pathological considerations clearly demonstrate that survival following the diagnosis and treatment of breast cancer at an early stage is much better than when the disease is locally advanced or metastatic. Mammography can detect tumours at a clinically undetectable stage; such tumours have a very good prognosis and many can be cured by appropriate treatment.

The results from the early randomised trials of mammographic screening were sufficiently promising to lead to the introduction of organised national programmes of screening in several countries in 1986–1988. Reports from seven trials involving over half a million women subsequently indicated a reduction in mortality from breast cancer of 20–30% in women, aged over 50 years, who were invited to be screened. The reduction of mortality in those actually attending for screening is clearly greater.

However, doubts regarding the validity of five of these trials have been raised by Gøtzsche and Olsen, firstly in an article to the *Lancet* [1] and then as a Cochrane review [2] with a Research Letter published in the *Lancet* [3]. Their conclusions have been vigorously debated. Such uncertainty regarding the efficacy of mammography is clearly an important public health issue that must be resolved. If the conclusions of Gøtzsche and Olsen are correct, women participating in screening programmes may have been harmed; if they are incorrect, encouragement to avoid screening may cost lives. We need to know the truth.

Following the controversial publications of Gøtzsche and Olsen, Swedish workers conducted an overview of four of their trials. Their conclusions [4] indicate that the benefit of breast screening, in terms of a reduction in breast cancer mortality of 21%, persisted for a median time of 15.8 years. They also argued convincingly that the criticisms made against the Swedish trials by Gøtzsche and Olsen are misleading and scientifically unfounded.

In addition to this overview, two authoritative Working Groups have convened and reported. A working group of the International Agency for Cancer Research [5], consisting of 24 experts from 11 countries, met in Lyon on 5–12 March 2002. The quality of the seven trials was carefully assessed, as a result of which it was concluded that many of the criticisms raised by Gøtzsche and Olsen were unsubstantiated. Further, those criticisms of substance did not invalidate the evidence that screening by mammography reduced mortality from breast cancer in women aged 50–69 years. In women who participated in screening programmes this was estimated as a reduction of 35%. For women aged 40–49 years, evidence for a reduction in mortality was limited. It was recognised that the effectiveness of national programmes of screening would vary according to differences in coverage and compliance, the quality of the mammograms, methods of assessment and treatment, and many other factors. But such organised programmes were more likely to be effective in reducing the rate of death than was the sporadic screening of selected groups of women.

The United States Preventive Services Task Force (USPSTF), whose mission is “to produce evidence-based reviews of preventative interventions provided in primary care clinical settings, using explicit, transparent, and publicly accountable methods” has also assessed the current evidence on mammographic screening. Key elements in this assessment are an evaluation of the quality of the available evidence and the performance of a meta-analysis wherever possible. The USPSTF [6, 7] concluded that mammographic screening could be recommended as a category B intervention on the grounds that the quality of evidence was fair and the net gain moderate. The reduction in breast cancer mortality among women invited to screening appeared to be 23%. Their statement reads: “The USPSTF recommends screening mammography, with or without clinical breast examination, every 1–2 years for women aged 40 and older. The USPSTF concludes that the evidence is insufficient to recommend for or against routine clinical breast examination alone. The USPSTF concludes that the evidence is insufficient to recommend for or against teaching or performing routine breast self-examination.”

In response to the uncertainty over the efficacy of breast screening, a Global Summit on Mammographic Screening was organ-
ised at the European Institute of Oncology in Milan between 3 and 5 June 2002, chaired by Umberto Veronesi (Milan), Sir Patrick Forrest (Edinburgh) and William Wood (Atlanta, GA). The Summit was planned in association with the World Health Organization, the European Commission, the American Cancer Society, the Centers for Disease Control and Prevention, the American Italian Cancer Foundation, the European Society for Medical Oncology, the American Society for Clinical Oncology and the International Union Against Cancer. Everyone involved in the debate was formally invited to participate: trialists, critics, supporters, organised programmes and interested clinicians and medical scientists.

An overview of the evidence from randomised trials [8] and observational studies [9] was presented and it was of great interest to compare the current situation with that available to a major Consensus Meeting in Europe in 1993 [10].

The design and recent results from the seven randomised trials were presented and discussed in detail in the light of each criticism put forward by Götzsche and Olsen. Some criticisms were discarded as being erroneous, others had been addressed by new analyses and shown to be of minor significance. It was appreciated that conducting such large trials over many years is difficult, particularly as technology, treatment and indeed public health policy can change during their course.

It was clear that the randomised trials necessary to evaluate screening were very complicated, particularly with respect to their size and likely duration. However, it was made clear [11] that breast cancer mortality was still the most appropriate end point for the evaluation of mammographic screening. There is an obvious need for alternative methods of evaluating screening and a new approach was outlined to the meeting [12].

Taking all the criticism into account, it was still possible to conclude that screening mammography reduced the mortality from breast cancer in women receiving an invitation to be screened in well-organised clinical trials: the reduction in breast cancer mortality appeared to be between 21% and 23% according to recent estimates. Those participating fully could expect greater benefit. There was unanimity that with the current evidence from randomised trials, taking full account of any limitations to their methodology, there were no grounds for stopping on-going screening programmes nor planned programmes.

Those attending the Milan Global Summit on Mammographic Screening believed that the book on screening trials should now be closed, and that future activities should concentrate on the evaluation of organised programmes of mammographic screening, on exploring methods to ensure full participation, particularly amongst deprived women, and on the development of new technologies for early diagnosis. During the meeting there were presentations on 14 such organised programmes of population screening; those of longer duration demonstrating tentative trends towards mortality reduction. Viable data from more recently established programmes tended to have similar values for many of the intermediate end points (e.g. stage of disease) as seen in the longer-established programmes, which was encouraging. There were indications from various parts of the world that these programmes could expect to lead to reductions in breast cancer mortality in the populations being screened [13–15].

Mammographic screening is only one step in the total management of women with breast cancer. Too often it is assumed that breast cancer mortality rates will decrease through more mammographic screening. This goal can only be attained through rigorous, high-quality screening, diagnosis and treatment, whose role in reducing mortality is crucial [16]. As has been shown from long-term established programmes in the UK, Sweden, Finland and The Netherlands, recognition of the importance of the multidisciplinary team in the assessment of mammographic abnormalities had ‘spun over’ into the symptomatic sector, leading to the development of integrated multidisciplinary breast care centres. Staffed by dedicated surgeons, radiologists and pathologists working alongside breast care nurses, and counselling and other support personnel, these centres offer optimum care for women with breast cancer and can quickly integrate new knowledge about breast cancer treatment into their protocols.

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References