Chairman's introduction

Breast cancer is the most common cancer and the second leading cause of cancer death in western women. This disease is in constant evolution and requires, more than ever, a fully integrated multidisciplinary management, as well as an ongoing dialogue with laboratory scientists.

Screening mammography has changed the stage distribution of breast cancers, with more now being both smaller and of lower stage. As a result of this evolution, radiologists, pathologists, surgeons, radiotherapists and medical oncologists are facing new challenges in 'optimal' breast cancer management, which form the scope of this educational session.

- Approximately 30% of detected abnormalities are DCIS (ductal carcinoma *in situ*) and over 50% are invasive cancers, less than 1 cm in size. These entities pose difficult problems for clinical management today: their accurate localisation in the breast and the choice of the most appropriate biopsy technique require close collaboration between radiologists and surgeons (see Cataliotti et al.); the pathologist is then given the difficult task of maximising the chance of detecting incomplete excision (see Going et al.) and of providing the medical oncologist with a growing list of potential prognostic and predictive 'markers' that will be of help in planning adjuvant therapy.

  Local control following breast conservation is the next challenge and a key issue for surgeons and radiotherapists (see Cataliotti et al. and Overgaard et al.), while the risk of overtreatment is an obvious source of concern for radiotherapists and medical oncologists treating increasingly smaller invasive tumours (see Overgaard et al. and Lohrisch et al.). Dr. Overgaard provides the reader with a comprehensive review of optimal radiotherapy dose and fractionation issues, including resource allocations and potential harm and benefit.

  This educational session will also attempt to summarise the sustained beneficial effects of adjuvant endocrine therapy for ER (oestrogen-receptor)-positive tumours, as demonstrated by the last Oxford overview (September 2000), and, to discuss the question of who needs — and who perhaps does not need — adjuvant chemotherapy. This last issue is undoubtedly the most difficult one medical oncologists face nowadays, given the increasing proportion of patients with relatively small, node-negative tumours.

  The fine-tuning of adjuvant chemotherapy regimens is also reviewed, with a special focus on the anthracycline and taxane 'dilemmas'. It is, however, the opinion of the author that further progress in the important area of 'chemotherapy individualisation' will only be possible through the design and conduct of a new generation of innovative clinical trials having a translational research hypothesis as their main testing hypothesis.
- At the same time, the morbidity associated with axillary node dissection is viewed as increasingly less acceptable for women who have a greater chance of having a 'node-negative' tumour. The elegant sentinel node biopsy technique is spreading rapidly in the surgical community and will most likely represent one of the most significant advances in the surgical management of breast cancer. However, in some countries there is a reluctance to accept this technique, therefore quality assurance related to this new technique is crucial ... and is reviewed by Dr Cataliotti and his colleagues.
- The emerging entity of 'micro-metastases' in the sentinel node is nicely discussed by Dr Going and his associates. It is still unclear whether this information has utility beyond what we know about the 'key' pathological features, which include tumour size, tumour grade, lymphovascular channel invasion and hormone receptor status. The same remark applies to a multitude of new molecular markers that pathologists are asked to evaluate on the primary tumour in view of their putative prognostic or predictive value. In this regard, the story of the HER2 transmembrane receptor is quite informative and provides a number of 'lessons', also well reviewed by Dr Going and colleagues. But HER2 is just the beginning of a great adventure ... ! There is little doubt that sooner rather than later we will witness a true revolution in the way in which we analyse tumours in general and breast tumours in particular. The key information we will retrieve in order to select local and systemic therapy will most likely be based on patterns of gene expression, rather than on a restricted list of 5 or 6 tumour characteristics. The

expectation is that these 'patterns' will allow for markedly improved treatment individualisation.

- The ageing of Western populations is another challenge for the oncology community: a growing proportion of women diagnosed with breast cancer are older than 69 years. The optimal management of these women requires careful consideration of individual absolute benefit and harm. Unresolved issues for this difficult patient population include the benefit/risk ratio associated with post-tumorectomy radiation (see Overgaard et al.) and with the use of chemotherapy in high-risk ER-positive tumours or ER-negative tumours (see Lohrisch and Piccart).

It is hoped that this chapter on the modern multidisciplinary management of early breast cancer will provide both useful guidance to oncologists treating this disease and updated information on future challenges for the involved disciplines ... as well as an incentive to collaborate in breast cancer research.

Martine Piccart