years. In the meantime women who are demanding mammography screening in the 40–49 age group will have to be advised that it is not indicated, though their physicians should remain alert to the possibility of breast cancer developing in this younger age group, and should not hesitate to seek further opinions on those who develop the signs of early breast cancer, with which they should try to become familiar.

1. Miller AB, Chamberlain J, Day NE, Hakama M and Prorok PC. Report on a workshop of the UICC project on evaluation and screening for cancer. *Int J Cancer*, 1990, **46**, 761–769.

Eur J Cancer, Vol. 28, No. 2/3, pp. 619–620, 1992.
Printed in Great Britain

0964–1947/92 $5.00 + 0.00

Breast Conserving Therapy: Workshop Report

Ian S. Fentiman

INTRODUCTION

THERE IS agreement now that breast conserving therapy (BCT) is a safe approach for selected patients with operable cancer. The questions that still remain unanswered are how selection should be conducted and whether new techniques can achieve equally good results but with less morbidity and improvement in cosmetic outcome. The workshop considered local relapse after BCT and discussed new approaches to treatment; changing the role of radiotherapy and the use of first-line chemotherapy to render large tumours suitable for BCT.

LOCAL RELAPSE

Three main groups of factors affect local relapse after BCT and relate to patient, tumour and treatment. Of the patient-related factors, young age and small breast size have both been shown to be associated with an increased risk of relapse. A variety of tumour-related factors including type, grade, size, site and nodal status do not appear to alter the risk of local relapse.

Two features strongly correlated with local relapse are extensive intraductal component (EIC) and multifocality. A multifocal tumour was defined by Roland Holland as showing the presence of *in situ* disease or lymphatic invasion more than 1 cm from the infiltrating margins. Multicentric disease, which is rare, was defined as two areas of cancer which are separated by normal glandular tissue.

In a series of 217 mastectomy specimens, serially sectioned, Holland found that 40% of tumours were unifocal and 60% multifocal. Within the multifocal group, 1 in 3 had a very extensive intraductal component. It was suggested that wide excision was necessary to confirm this diagnosis and that such cases might be treated by mastectomy rather than BCT. Peterse also reported that extensive *in situ* component in a biopsy was strongly correlated with residual ductal carcinoma *in situ* (DCIS) in re-excision specimens.

Recht presented data from the Joint Center for Radiation Therapy which concerned EIC, volume of excised specimen and local relapse risk. There was a significant reduction in local relapse in patients with T1 tumour, no EIC and large biopsy volume. Among T2 cases with EIC, a significantly increased relapse rate occurred in those who had a small volume of breast tissue excised.

The Nottingham group have excluded patients with tumours > 3 cm, extensive multifocality or extensive disease from BCT. In addition, those with tumours > 1 cm where vascular invasion was seen, were offered mastectomy. On this basis, only 4/206 (2%) patients treated with BCT developed local relapse after a median follow-up of 18 months.

Kurtz discussed treatment-associated risk factors such as extent of surgery and indicated that local relapse occurred in 10% of patients treated by tumourectomy, against only 4% after quadrantectomy. A future task will be to balance the need for wide excision in some patients with an achievement of a good cosmetic outcome for the majority. Use of the boost may reduce the need for more extensive surgery. The role of the boost is currently being studied in EORTC trial 10882. Optimally, local control should be 90–96% at 5 years and 81–92% at 10 years. Local relapse may be reduced further by either adjuvant endocrine or chemotherapy.

EORTC 10801

The 8 year results of EORTC 10801 were presented by Joop Van Dongen. The trial compared modified radical mastectomy with BCT (tumorectomy, axillary clearance, external radiotherapy 50 Gy and iridium 192 boost 25 Gy). There were 902 women in the trial, of whom 734 (81%) had TNM stage 11 tumours, the remainder having T1 lesions.

The actuarial local relapse free survival at 8 years was 91% for the mastectomy group and 87% for those treated by BCT. No subset differences emerged except that tumour size > 2 cm was a borderline risk factor for relapse in those treated by BCT, but not in the mastectomy group.

It was stressed that the only chance of cure after breast relapse was by salvage surgery consisting at minimum of a total mastectomy, sometimes in association with chest wall resection. Diagnosis of relapse could be difficult and the mean tumour size at the time of relapse was 4 cm. Cytopathology can be helpful in making the diagnosis. The Leiden group presented data suggesting a role for mammography in early detection of relapse using a combination of criteria; developments of new microcalcification and opacities may reduce the size of tumour at the time of diagnosis of relapse.

Correspondence to I.S. Fentiman, ICRF Clinical Oncology Unit, Guy's Hospital, London, SE1 9RT, U.K.
Received 18 Sep. 1991; accepted 6 Nov. 1991.

Van Dongen reported that there was an intention to cure in 84% of those with local relapse. Success of salvage depended upon the aggressiveness of the tumour. Of those patients who relapsed within 2 years, local control was achieved in only 30%, as compared with 60% of those whose disease-free interval was more than 2 years.

NEW APPROACHES

All successful trials of breast conservation have incorporated axillary clearance and external radiotherapy. Various studies are testing whether these treatments are needed. Chetty reported the Edinburgh trials in which patients were treated with either axillary clearance or axillary sampling (with postoperative radiotherapy if nodal involvement was present). Similar rates of nodal involvement were found in both groups and local control was similar.

The use of a variety of first-line chemotherapy treatments was reported by the Milan Group. After treating 229 patients with cancers > 3 cm, tumour size was reduced in 202 cases (88%) so the QUART technique (quadrantectomy, axillary dissection and radiotherapy) could be used for BCT.

AVOIDANCE OF RADIOTHERAPY

Teleky reported a series of 220 patients with T1 tumours treated by lumpectomy or quadrantectomy and axillary clearance, but given no postoperative radiotherapy. After 4 years median follow-up, 13 (6%) had relapsed locally. Of those aged < 50, 8% relapsed compared with 5% of those aged > 50. Using a combination of T1 tumour, node negativity and age > 50, it may be possible to avoid radiotherapy in selected cases.

The Swedish trial randomised patients who had been treated by sector resection and axillary clearance to observation or radiotherapy (54 Gy). There was a significant improvement in cosmetic outcome rated both subjectively and objectively in the non-irradiated group.

Pilot work at Guy's Hospital has examined the role of implant treatment without external radiotherapy. In the first study, patients with tumours < 4 cm were treated by tumourectomy, axillary clearance and iridium implant giving 55 Gy as a continuous treatment over 5 days to the tumour-bearing quadrant. Local relapse after 4 years is similar to that following standard BCT and no untoward radiation reactions have been seen. However, because of radiation protection requirements, this approach was discontinued and replaced with a medium dose rate intermittent caesium implant delivery 45 Gy in four fractions over 4 days. So far, 32 patients have been treated in this way but follow-up is short. Once the study has been completed, it is hoped to incorporate this type of approach as one arm of a prospective randomised EORTC trial.

Eur J Cancer, Vol. 28, No. 2/3, pp. 620–622, 1992.
Printed in Great Britain

0964–1947/92 $5.00 + 0.00

Breast Cancer: Adjuvant Treatment

R.D. Rubens

INTRODUCTION

THE PRESENTATIONS on adjuvant systemic treatment gave the latest information on efficacy and, of more importance to patients, effectiveness. Demonstration of efficacy, whether or not treatment has an effect, comes from prospective randomised clinical trials. Effectiveness concerns the applicability of these effects to routine practice when they have to be balanced against any adverse consequences of treatment.

EFFICACY

Postoperative chemotherapy and endocrine treatment

The meta-analysis of trials of adjuvant treatment has essentially ended the debate on whether or not adjuvant systemic treatment affects survival. It is now clear that in all prognostic subsets of patients with breast cancer the various approaches lead to a reduction in the annual odds of death by about 25%. This results in the avoidance of approximately 10% of deaths at 10 years after diagnosis [1]. The current meta-analysis is based on over 70000 women in 200 randomised trials. These large numbers have not only given firm information on the efficacy of adjuvant treatment, but also enabled separate analyses for different prognostic subsets and different types of treatment.

In younger patients (less than 50 years old), chemotherapy has become established as having the clearest effect by reducing the annual odds of death by a quarter. Prolonged multiple drug treatment, for example cyclophosphamide, methotrexate and 5-fluorouracil (CMF), is more effective than either limited perioperative chemotherapy or prolonged single-agent treatment; treatment beyond 4–6 months does not enhance the effect. It is of interest that, despite the limited duration of chemotherapy, the actuarial survival curves are still seen to be diverging at 10 years. The current meta-analysis also clearly demonstrates an effect of similar magnitude for ovarian ablation, although the standard deviation is wider because of the lower numbers available for analysis. The results of the first trial directly to compare the effects of ovarian ablation and chemotherapy were reported [2]. After a median follow-up of 5.5 years and accrual of 332 patients, the effects of ovarian ablation or an intravenous regimen of CMF are similar. In this factorial design trial, the addition of prednisolone reduced myelosuppression from CMF, but did not affect its efficacy or that of ovarian ablation.

The meta-analysis shows tamoxifen to result in a highly significant reduction in the annual odds of death by a quarter in women aged 50 years or more. The size of this effect increases with rising levels of oestrogen receptor concentration in the

Correspondence to R.D. Rubens, ICRF Clinical Oncology Unit, Guy's Hospital, London, SE1 9RT, U.K.
Received 13 Sep. 1991; accepted 20 Nov. 1991.