for example, cosmetic breast surgery was ranked higher than treatment for an open thigh fracture—and sent the commission charged with carrying out the exercise back to the drawing board. The commission's revised strategy is to make its approach technically more sophisticated—for instance, by seeking better information about outcomes—and also to add new dimensions. In particular, it is trying to use the results of public consultations to generate social priorities for general categories of medical intervention rather than for individual conditions: to elicit the weighting given by citizens to preventive rather than curative treatment, for example.

It will be some months before the commission produces its results, and some time after that before Oregon decides what to do about the commission's recommendations. Even the more complex, multidimensional approach now being pursued has its difficulties. Outcome measurement is not the cure all that is sometimes assumed.³ QALY type calculations are notoriously sensitive even to minor changes in the assumptions fed into them,⁴ quite apart from being open to the wider objection that they deal with the mythical average patient and do not allow for heterogeneity within conditions. Consultation exercises also raise the question of just how representative the public consulted is. In Oregon only 600 citizens turned up at meetings called to discuss priorities, and of these, 56% worked in the health care system.⁵

In short, producing a list of priorities—or defining an adequate minimum package of health care—will inevitably entail a process of argument, persuasion, and consensus building. If the Oregon experiment so far has shown anything it is that there is no technological fix: imputing values to statistics and decisions about what methods to use for cranking out rankings from computers are themselves a matter for political dialogue. Technical exercises may be a useful way of starting up the dialogue and providing statistical scaffolding that may subsequently be dismantled, but they cannot resolve conflicts of values or interests.

Assuming that this conclusion is sustained by what happens in Oregon over the next year, the implications for Britain's NHS are sobering. For while technologies are transferable, political systems are not. If the Oregon experiment were all about developing a new method for determining priorities, NHS health authorities could no doubt import it fairly easily. But since the Oregon experiment is anchored in the state's political system, and relates to the special problems of health care in America, it is difficult to see what NHS purchasers can learn directly from its success or failure. Only one message seems clear. Any attempt to determine explicit priorities of resource allocation—to specific groups or services—will necessitate opening a dialogue if it is to be seen as more than the imposition of arbitrary technocratic or managerial values. In turn this implies that health authorities will have to start thinking seriously about the nature of their constituencies and how they can best generate support, professional and public, for their priorities. This means not only a willingness to argue in public but also developing a system in which they have partners in dialogue: something that is conspicuously lacking at present.

RUDOLF KLEIN

Professor of Social Policy,
Centre for the Analysis of Social Policy,
University of Bath,
Bath BA2 7AY

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Primary medical treatment in breast cancer

May offer improved survival to women in high risk groups

Breast cancer has traditionally been regarded as a surgical disease, and chemotherapy has been reserved for treating locally advanced and metastatic disease and for adjuvant treatment in premenopausal patients with node positive disease. This traditional view is now being challenged by medical oncologists, who propose giving patients with operative breast cancer cytotoxic chemotherapeutic drugs as first line treatment.¹

The acceptance that breast cancer is often a systemic disease at diagnosis has led to changes in the surgical management of operable breast cancer, with conservative surgery increasing. Furthermore, conservative surgery and radiotherapy produce local control of early breast cancer comparable with that after radical mastectomy.²⁻⁶

Chemotherapy is already well established for advanced inoperable disease, in which response rates vary from 40% to 59% for standard cyclophosphamide, methotrexate, and fluorouracil regimens,⁷ but rise to 82% when doxorubicin is used.⁸ There remains controversy about whether chemotherapy prolongs survival in patients with metastatic disease,^{9,10} but a recent overview concluded that those who respond show a survival advantage.¹¹ The advantages of adjuvant treatment in patients with node positive breast cancer are now becoming more widely accepted, especially in younger patients, as both disease free interval and overall survival are prolonged.¹

Primary medical treatment was first used in 1973 to treat locally advanced tumours (T3b, T4), the idea being to achieve prompt tumour response with four cycles of doxorubicin and vincristine to facilitate radiotherapy.^{12,13} In this study 98 out of 110 patients responded, and 81 of these responders achieved complete clinical and radiological remission after radiotherapy.¹³ Thirty one patients, however, relapsed locally within three years.

After the success of these regimens this approach was extended to smaller operable tumours, with the aim of downstaging them to facilitate conservative surgery.¹ Such a study was started in Milan in April 1989, and 97 patients have now completed treatment. The chemotherapy regimen consisted of cyclophosphamide, methotrexate, and fluorouracil for three or four cycles or fluorouracil, doxorubicin, and cyclophosphamide for three.¹ Sixty two patients were premenopausal and 35 postmenopausal; tumour diameter was 3 cm in nine, greater than 6 cm in 10, and between 3 cm and 6 cm in the remainder. By clinical and mammographic criteria 16 achieved a complete tumour response after treatment, but this figure fell to four when histological criteria were used. A partial response was seen in 59 and an improvement in a further 19. After chemotherapy a quadrantectomy (accompanied by radiotherapy) was performed in 85 of the 94 patients in whom response could be evaluated. Interestingly, no difference in tumour response or rate of quadrantectomy was observed between the premenopausal and postmenopausal patients (83% and 91%). Only nine of the 94 patients underwent mastectomy because of disease progression, tumour size, or multifocality. The authors concluded that the classical indications for mastectomy might be challenged by this form of treatment.

Other groups have reported similar results with primary medical treatment and radiotherapy (I E Smith *et al* and C Jacquillat *et al*, Joint National Cancer Institute and Italian Society for Research into Tumours Symposium: Biology and therapy of breast cancer, Genoa, 1989.) Not all groups reported how many patients subsequently required mastectomy, however, but Smith *et al* from the Royal Marsden Hospital reported that 18% of 57 patients required mastectomy after a median follow up of 19 months (I E Smith *et al*, 1989). Only 15 of these patients received chemotherapy, the remainder being treated by endocrine therapy. Should these results be confirmed the next step will be to treat tumours of less than 3 cm, thus challenging the role of surgery in the management of breast cancer.

The advantages of primary medical treatment include in vivo monitoring of drug response, a decrease in tumour size before surgery, and, when combined with radiotherapy, the possibility of avoiding surgery altogether. This form of treatment also offers the potential for studying biological changes associated with drug response and disease progression, including the phenomenon of multiple drug resistance associated with expression of P glycoprotein.¹⁴

There are no published data on the quality of life of patients given primary medical treatment for operable breast cancer, but we find that most patients tolerate it well and their quality of life is no worse than that of patients receiving adjuvant chemotherapy after surgery. Women are often surprisingly willing to have primary medical treatment, especially if it replaces surgery.

Nevertheless, several problems do exist. Firstly, if primary medical treatment is used for tumours of less than 2 cm a substantial proportion of patients with node negative disease will receive chemotherapy who do not need it, as 70% of these women are alive and well 10 years after conventional treatment with no adjuvant chemotherapy. Another problem is residual tumour, which in one study was present in 96% of patients after treatment.¹ In another study 74% of patients undergoing mastectomy after chemotherapy had axillary node disease.¹⁵ Radiotherapy may remove residual tumour, but uncertainty may exist even after biopsy owing to sampling error. This problem would be particularly important in young women, who would be prime candidates for this form of treatment.

Biological markers of response to chemotherapy would be helpful in selecting patients for primary medical treatment. The only biological feature predictive of tumour response is a high S phase fraction, which indicates a high proliferative tumour rate.¹⁶ Other characteristics of the tumour, such as histological grade, expression of oestrogen receptor, or measures of growth kinetics, seem to be unhelpful.¹ Almost a third of patients with node negative disease die of their disease¹⁷; if they could be reliably identified chemotherapy for them would be justified.

Other studies to identify subgroups with a poor prognosis have found that the proto-oncogene c-erb B2 is expressed in up to two fifths of breast cancers^{18 19} and is associated with early relapse and poor survival,^{18 20} although not all authors have confirmed these findings.²¹ Expression of epidermal growth factor receptor has also been associated with poor survival,²² as has cathepsin D, an oestrogen stimulated lysosomal enzyme that seems to be especially useful in identifying patients with node negative disease who are at high risk of relapse.²³

Primary medical treatment is accepted for locally advanced breast cancer and now seems to have a further role in downstaging operable breast cancer, though this approach is still to be evaluated. Whether it can replace surgery completely remains uncertain, especially as it is likely to be offered to younger patients. The future may lie instead in identifying

subgroups of patients at high risk and whose tumours express epidermal growth factor receptor, c-erb B2 oncogene, and cathepsin D, to see whether primary medical treatment can improve their survival. The results of controlled trials are eagerly awaited.

Z RAYTER
R F PHIPPS

Senior Surgical Registrars,
Royal Marsden Hospital,
London SW3 6JJ
(Correspondence to Mr Rayter)

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Hypothermia: dead or alive?

Some patients deserve heroic measures

At this time of year exposure on the hills, cold immersion, or collapse induced by alcohol may all cause hypothermia in healthy people. Whether they do so depends greatly on the individual's internal insulation from subcutaneous fat and on recent carbohydrate intake. Such intake is particularly important in preventing alcohol induced hypothermia, caused by thermoregulatory failure due to hypoglycaemia.¹⁻³

The principles of treating simple hypothermia remain straightforward and generally uncontroversial for victims who still have a carotid pulse and respiration, however slow and difficult these may be to detect. External rewarming in the horizontal position by warm air, or by a warm bath not hot enough to be painful to the rescuer's elbow, is usually effective. A drink containing sugar or, rarely, intravenous