PAPERS AND SHORT REPORTS

Oestrogen receptors and survival in early breast cancer

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Abstract

Oestrogen receptor status was related to survival in 414 patients with primary breast cancer. Women with oestrogen receptors in their tumours survived significantly longer than those without receptors; this was true for both premenopausal and postmenopausal women and also when the patients were subdivided into those with and without axillary metastases. Patients with axillary metastases and no oestrogen receptors in their tumours had the worst prognosis, while women with axillary metastases and oestrogen receptors had a death rate similar to that of women with no axillary metastases and no receptors.

Patients without oestrogen receptors and with no axillary metastases were identified as a high-risk group, and it would seem appropriate to include such patients in future trials of adjuvant therapy in early breast cancer.

Introduction

The role of oestrogen receptor analysis in selecting treatment for patients with advanced breast cancer is well established.[1] In operable breast cancer studies have shown that patients whose tumours contained oestrogen receptors had longer disease-free intervals than those who had tumours without oestrogen receptors.[2-5] Similarly, one study showed that postmenopausal patients with tumours containing oestrogen receptors had significantly longer survival than those whose tumours did not contain receptors.[6] This difference was found only in women with metastases in the lymph nodes.

The present study was established to investigate the role of oestrogen receptor analysis in early breast cancer; we report here on the relationship between the oestrogen receptor content of the primary tumour and survival.

Patients and methods

All patients with apparently early breast cancer who presented to the 15 surgeons who participated in this investigation were considered for entry into the study. The patients were staged clinically according to the international TNM system. The presence or absence of distant metastases was confirmed by chest *x* ray examination, skeletal survey or bone scan, and liver function tests. All patients were treated by some form of mastectomy, which included either an axillary node biopsy or an axillary dissection. The presence or absence of axillary metastases was accepted only after histological examination of the excised nodes. The clinical staging was modified in the light of the results of the investigations and the histological findings, and a total of 414 patients with operable breast cancer (T_{1-3}, N_{0-1}, M_0) were included in the study.

No patient received any form of systemic adjuvant treatment. The treatment of recurrent or metastatic disease was left to the discretion of the individual surgeons. Most patients received tamoxifen, and those who failed to respond to this or relapsed were treated with combination chemotherapy.

The patients were followed up for three to 54 months with a median period of 21 months.

Oestrogen receptor assay—The oestrogen receptor content of each tumour was measured by the dextran-coated charcoal technique.[5] Tumours were considered to contain oestrogen receptors if they specifically bound 5 fmol or more of oestradiol per mg of tumour cytosol protein.

Statistical methods—The patients were divided into subgroups on the basis of their menopausal, lymph-node, and oestrogen receptor status. Life tables were constructed for each of these groups and compared by the log rank test. This test compares differences between whole curves rather than between individual points on each curve.[7]

Results

Oestrogen receptors were present in 229 (55%) of the 414 breast tumours studied. Of the 293 postmenopausal patients, 179 (61%) had tumours which contained oestrogen receptors, whereas only 50 (41%) of the 121 premenopausal patients had tumours with oestrogen

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receptors; there was no relation between the presence of oestrogen receptors and tumour size or the presence or absence of diseased lymph nodes. At the time of writing 50 of the 414 patients had died from recurrence of their breast cancer.

The rate of survival was significantly longer ($p<0.001$) in the 229 patients with tumours that contained oestrogen receptors than in the 185 patients whose tumours did not contain them (fig 1). This difference was significant for both premenopausal and postmenopausal women but was particularly great in the premenopausal group (figs 2 and 3).

The rate of survival in women with and without metastatic disease in the axillary lymph nodes was related to the presence or absence of oestrogen receptors. Among the 182 women with diseased nodes at presentation, the 86 whose tumours did not contain receptors had a lower rate of survival than the 96 whose tumours did contain receptors ($p<0.05$) (fig 4). Those patients with diseased nodes but no oestrogen receptors had the lowest rate of survival of any of the groups studied.

Among the 232 women without axillary lymph node disease the 99 patients who did not have receptors in their tumours had a significantly higher death rate than the 133 with receptors ($p<0.01$) (fig 5). The patients whose tumours contained receptors but who had no diseased nodes had the best prognosis of all, with very few deaths (fig 6). Although as a group women without axillary lymph node metastases had a more favourable prognosis, the subgroup without oestrogen receptors had a death rate as high as that of women with diseased nodes and oestrogen receptors in their tumours.

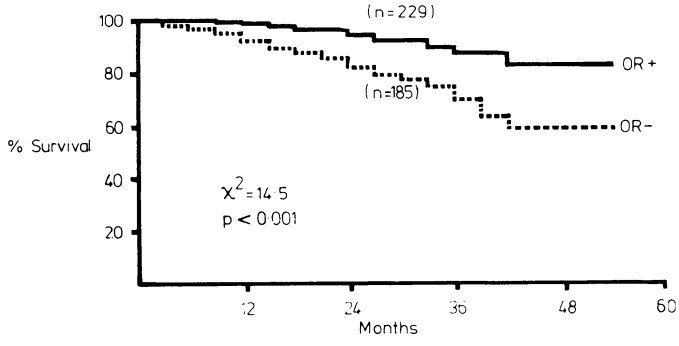

FIG 1—Survival rates in patients with (OR+) and without (OR−) oestrogen receptors in their tumours.

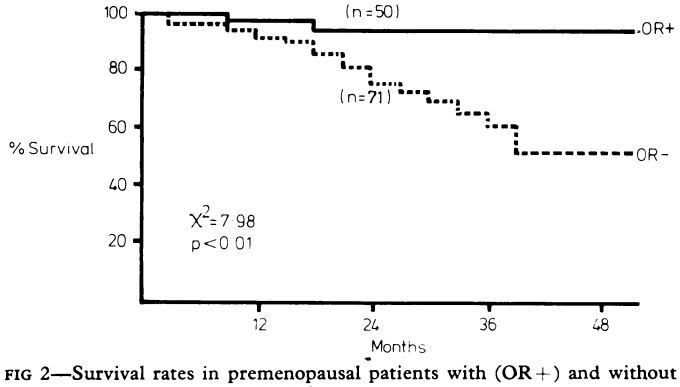

FIG 2—Survival rates in premenopausal patients with (OR+) and without (OR−) oestrogen receptors in their tumours.

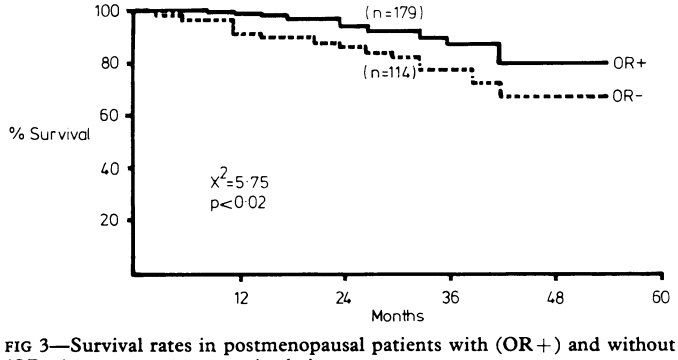

FIG 3—Survival rates in postmenopausal patients with (OR+) and without (OR−) oestrogen receptors in their tumours.

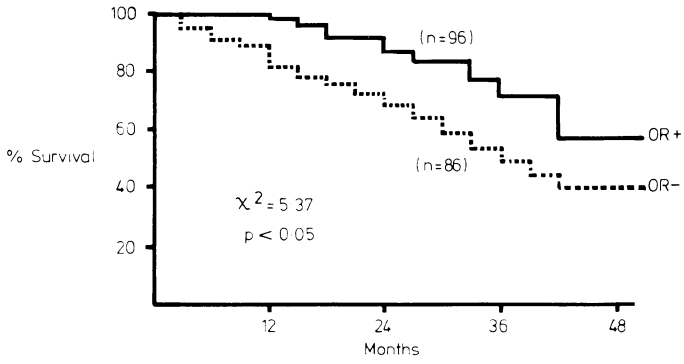

FIG 4—Survival rates in patients with axillary metastases with (OR+) and without (OR−) oestrogen receptors in their tumours.

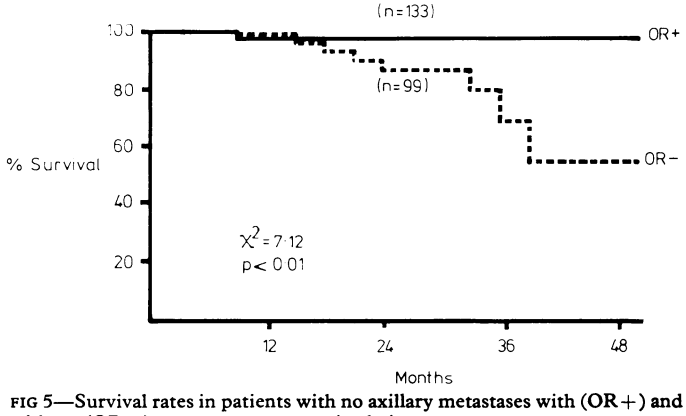

FIG 5—Survival rates in patients with no axillary metastases with (OR+) and without (OR−) oestrogen receptors in their tumours.

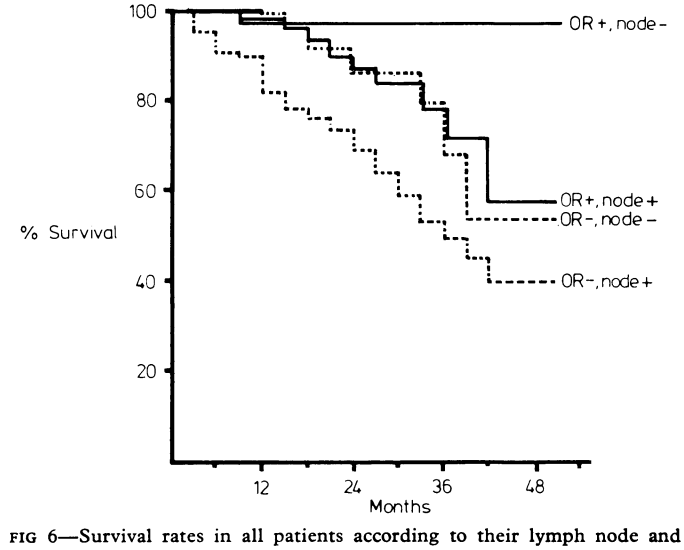

FIG 6—Survival rates in all patients according to their lymph node and oestrogen receptor status.

Discussion

Our findings relating oestrogen receptor status to survival are similar to those found for recurrence in an earlier report[5] and underline the importance of oestrogen receptor status as a prognostic indicator in early breast cancer. As in other studies,[2-4]

we found no relationship between oestrogen receptor status and lymph node metastases, so these two independent prognostic factors may be used together to provide a more accurate prediction of prognosis. This may be of particular value in planning the entry criteria and stratification of future adjuvant trials.

Clearly, patients with tumours that contain oestrogen receptors but who have no axillary metastases have a good prognosis, and adjuvant treatment would seem inappropriate for this subgroup. Conversely, patients with node metastases and tumours without receptors have a poor prognosis, the worst of all the subgroups studied.

Patients without oestrogen receptors and with no axillary metastases have been identified as a high-risk group, and it would now seem appropriate to include such patients in future trials of adjuvant therapy in early breast cancer.

We thank the many surgeons on Merseyside who co-operated in this study. The tumours were collected by Mrs Patricia Clark, who also gave invaluable secretarial help. This investigation was supported by a grant from the Mersey Regional Health Authority.

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(*Accepted 12 August 1981*)

Flexible sigmoidoscopy in outpatients with suspected colonic disease

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Abstract

One hundred and fifteen patients attending a gastroenterology clinic were investigated by flexible sigmoidoscopy as outpatients. They were asked to fast before the examination and given a high-volume enema and sedated before the examination. A standard long colonoscope was used rather than the 60-cm sigmoidoscope, which limits the distance that can be examined and forces the operator to work very close to the patient. Preparation was considered good in 95 patients and 49 were examined as far as the hepatic flexure or beyond. Sixty-one patients were found to have lesions of the colon, 25 of them ulcerative colitis, 16 a polyp, and nine carcinoma.

Despite the fact that these patients were selected (some of them had already had ulcerative colitis diagnosed), flexible sigmoidoscopy proved to be a valuable initial outpatient investigation. The proximal colon was well visualised in 46 patients and a subsequent barium enema was considered unnecessary. There were no complications and the procedure seemed to be well tolerated.

Introduction

Colonoscopy has become an accepted method of investigating the colon, but, unlike upper gastrointestinal endoscopy, the procedure is not widely practised in the United Kingdom outside specialist centres and many instruments are underused. This is partly because colonoscopy is usually regarded as difficult and partly because elaborate bowel cleaning techniques are frequently advocated. Recently 60-cm flexible sigmoidoscopes have been introduced, and initial studies have suggested that flexible sigmoidoscopy is a greatly superior investigation to rigid sigmoidoscopy and that the diagnostic yield of lesions found is about three times greater with the flexible instrument.[1 2] During the past year we have undertaken 115 outpatient sigmoidoscopies using a flexible instrument and we report here our experience with this technique.

Patients and methods

All 115 patients were attending a gastroenterology outpatient clinic for the diagnosis or treatment of bowel disease. If patients were thought to require sigmoidoscopy they were asked to attend the gastroenterology unit after a period of fasting, where they received a single high-volume enema, consisting of three pints of tap water and 3 g Veripaque (Winthrop; contains 50 mg oxyphenisatin). The enema was given slowly and the patient retained this if possible for 15 minutes. The examination was then carried out after sedation with pentazocine and diazepam. One to two hours after the procedure the patients were allowed home, accompanied by a relative or friend. No dietary manipulations or laxatives were prescribed in the 24 hours before the examination.

We chose to use standard long colonoscopes for the procedure rather than be limited to 60 cm and be working very close to the patient, as is necessary with the flexible sigmoidoscope.

Results

Preparation was deemed to be good in 95 (82%) of patients, and in 49 (43%) it allowed examination of the colon to the hepatic flexure or beyond. In 37 the examination was terminated after inspection of the rectum and sigmoid colon only.

In 61 (53%) patients a lesion in the colon was found, the principal diagnosis being ulcerative colitis (25 patients), while polyps (16) were

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