Patients responding, with time on tamoxifen to date. (Figures in parentheses are numbers of patients who subsequently relapsed)

Type of response (lasting >6 months)	No	Response at: 3 years	2-3 years	1-2 years	½-1 year	½ year
Complete (impalpable)	18	5	4 (2)	5	4	—
Partial (50% reduction)	14	1	2	3 (1)	4	4
Static but softened	17	3	3	2	6	3
All responders	49 (100%)	9 (18%)	9 (18%)	10 (20%)	14 (29%)	7 (15%)

tively limited life expectancy of women in this age group were factors we considered. The mode of action of tamoxifen in inhibiting growth of mammary carcinoma is by its binding to oestrogen receptor sites.[4] Analysis of this data shows that an unexpectedly high proportion (69%) of these tumours show some response, the overall response rate of breast cancer to hormonal manipulations being of the order of 33%. A possible explanation for this encouraging result is the fact that the proportion of tumours containing oestradiol receptor increases after the menopause and that these tumours contain higher levels of the receptor.[5] The results are encouraging, but a clinical trial is needed to compare tamoxifen with mastectomy or tylectomy as treatment for localised breast cancer in elderly women.

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Propranolol, oxprenolol, and sclerosing peritonitis

Since practolol was associated with an oculomucocutaneous syndrome,[1] other beta-blocking drugs have been under scrutiny. The Committee on Safety of Medicines has received 17 reports of retroperitoneal fibrosis in patients taking other beta-adrenoreceptor antagonists.[2] Abnormalities similar to the early changes observed in patients with practolol-induced sclerosing peritonitis have also been reported on review of small-bowel radiographs of two out of 21 patients receiving practolol, two out of 13 receiving propranolol, and three out of 20 receiving oxprenolol.[3] Because of the potential gravity of this report,[3] and since propranolol and oxprenolol are the most commonly prescribed beta-blockers in Britain, we compared the small-bowel radiological appearances of patients who had taken one of these drugs with the radiographs of a control group of patients with diseases likely to require treatment with a beta-blocker.

Patients, methods, and results

We studied 20 control patients, all of whom could justifiably have been given a beta-blocking drug because of hypertension, angina, or arrhythmias. Twenty-five patients receiving at least 120 mg propranolol daily for 12 months or more, and seven patients taking at least 160 mg oxprenolol daily for at least 12 months were also studied (see table). No patient had taken practolol, another beta-blocker, or drugs used for hypertension other than a thiazide diuretic. Patients taking a drug known to affect the peritoneum or retroperitoneal tissues, induce systemic lupus erythematosus, or affect gut motility were excluded, as were those who had undergone abdominal operations or pelvic radiotherapy or gave a history of gastrointestinal disease.

After fasting overnight metoclopramide 10 mg was injected intravenously and the patient drank 300 ml Baritop. One hour later a plain abdominal radiograph was taken. This modified small-bowel meal followed closely the method used by Marshall *et al*.[3] The radiograph was then reported on by the radiologist, who was unaware of the patient's drug treatment. None of the abnormalities reported by Marshall *et al*[3] were seen in any of our 32 patients taking propranolol or oxprenolol or in any of the controls.

Age, sex ratio, duration of beta-blocker treatment, and daily dose of beta-blocker in control patients and patients taking propranolol or oxprenolol

Patients	Mean age in years (range)	Male to female ratio	Mean duration of beta-blocker treatment in months (range)	Mean daily dose of beta-blocker (mg) during year before study (range)
Control (n = 20)	53 (28–75)	16:4		
Propranolol (n = 25)	53 (33–69)	18:7	30 (12–96)	191 (120–590)
Oxprenolol (n = 7)	56 (23–67)	4:3	30 (12–72)	203 (160–320)

Comment

Our findings are reassuring in that they do not support the view that propranolol or oxprenolol is associated with the sclerosing peritonitis that occurs with practolol. Since clinical experience with propranolol is now some 12 million patient-years, compared with one million patient-years for practolol, it is surprising that if a causal relation exists only two patients with sclerosing peritonitis possibly associated with propranolol alone have been described.[4 5] Oxprenolol has been implicated as a cause of sclerosing peritonitis in two patients and timolol in one, but there is considerable doubt about all these associations.

Our results disagree with those of Marshall *et al*.[3] Since a type 2 statistical error is possible because of the few patients studied, we cannot assert that there is no association between these beta-blockers and small-bowel abnormalities; but it is probable that we would have detected at least one patient with abnormal small-bowel appearances if the incidence of such abnormalities reported by Marshall *et al* generally applied.

We conclude that propranolol and oxprenolol are unlikely to cause the small-bowel radiological changes seen with practolol and, despite extensive worldwide clinical experience with these drugs, there is no objective evidence that they cause sclerosing peritonitis.

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