in one general practice (population 14 500) carried out at the same time as Isaacs and colleagues' study found that 19.9% of women aged 40-59 were currently taking therapy.² For comparison with the age grouping used in Isaacs and colleagues' study I have returned to the data from this study and find that, of women aged 45-64, 25.1% were currently taking hormone replacement therapy. This study also described the length of treatment and compliance.

In 1993 a postal questionnaire survey of 1649 women from eight general practices found that 20% of women aged 45-64 were currently taking hormone replacement therapy.³ This study also explored how women make decisions about taking the therapy.⁴ It is probably true that, as the authors state, women doctors "rely less on the views of their general practitioners than do other women." The study mentioned above,⁴ however, showed that most women used many sources of information and advice about hormone replacement therapy other than their general practitioner.

In an interview study that I am analysing several women have talked about using hormone replacement therapy to control menopausal symptoms to make it easier for them to continue their employment successfully. These were women working in contact with the public, who needed to be available and accessible and were working alongside men. Other women have talked about their strategies to cope with hot flushes without therapy. Strategies have included being flexible about what they are doing and when, and checking out how they feel with female friends and colleagues.

I suggest that women doctors are ahead of the tide in taking hormone replacement therapy only partly because of their ease of access to information and treatment. The demands of their job may be a major influence on their decision. For some women, taking therapy will be acceptable; for others it may be a compromise to enable them to continue in work that they value and enjoy. Any preventive effect may be just an added bonus to taking hormone replacement therapy for social reasons.

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- 1 Isaacs AJ, Britton AR, McPherson K. Utilisation of hormone replacement therapy by women doctors. *BMJ* 1995;311:1399-401. (25 November.)
- 2 Griffiths F, Convery B. Women's use of hormone replacement therapy for relief of menopausal symptoms, for prevention of osteoporosis, and after hysterectomy. *Br J Gen Pract* 1995;45:355-8.
- 3 Griffiths F, Jones K. The use of hormone replacement therapy; results of a community survey. *Fam Pract* 1995;12:163-5.
- 4 Griffiths F. Women's decisions about whether or not to take hormone replacement therapy: influence of social and medical factors. *Br J Gen Pract* 1995;45:477-80.

Magnesium sulphate should be used for eclamptic fits

EDITOR,—The letter by Robert Fox and Tim Draycott has a misleading title: the fits under discussion are eclamptic, not pre-eclamptic (as the definition of eclampsia is the occurrence of fits superimposed on pre-eclampsia). The letter is also misleading in giving advice to use diazepam rather than magnesium sulphate for the initial control of eclamptic convulsions. This advice could lead to maternal morbidity.

The description of the treatment regimens used in the collaborative eclampsia trial makes it clear that magnesium sulphate was given both to prevent further fits and to control active fits.² Compliance with the allocated treatment in this trial was extremely good, as 99% of 453 women who were allocated magnesium received it and only 9%

received an additional anticonvulsant. Just 15 of these 453 women received diazepam in addition to magnesium. This use of magnesium sulphate resulted in a halving of the risk of recurrent convulsions when the women were compared with women allocated diazepam (relative risk 0.48 (95% confidence interval 0.36 to 0.63)). Put another way, for every 100 women treated with magnesium rather than diazepam, 15 fewer had further fits. The only other published randomised trial comparing these agents in eclampsia (which recruited 51 women) is cited by Fox and Draycott to support their belief that diazepam is "highly effective at stopping convulsions." In this trial the risk of further fits was also reduced (although the reduction did not achieve significance) in women who received magnesium sulphate rather than diazepam (relative risk 0.80 (0.29 to 2.20)).³

Taken together, these trials provide strong evidence to support the use of magnesium sulphate rather than diazepam in women with eclampsia (during acute fits and to prevent further convulsions). Fox and Draycott's argument that diazepam is more readily available and more familiar to British doctors is unlikely to persuade many pregnant women that the drug is therefore an acceptable alternative for the management of acute fits. Instead, the issues that should be tackled are how to make magnesium sulphate readily available in places where it is likely to be needed and ensuring that clinicians (both midwives and obstetricians) are properly trained in its use.

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- 1 Fox R, Draycott T. Prefer diazepam for initial control of pre-eclamptic fits. *BMJ* 1995;311:1433. (25 November.)
- 2 Eclampsia Trial Collaborative Group. Which anticonvulsant for eclampsia? Evidence from the collaborative eclampsia trial. *Lancet* 1995;345:1455-63.
- 3 Crowther C. Magnesium sulphate versus diazepam in the management of eclampsia: a randomised controlled trial. *Br J Obstet Gynaecol* 1990;97:110-7.

General physicians are as good as cardiologists at interpreting ECGs

EDITOR,—A recent study identified major deficiencies in the ability of medical staff to identify normal electrocardiographic variables such as the QT interval.¹ In the clinical setting, however, knowledge of such variables may be less important than the ability to use an electrocardiogram to achieve a diagnosis. Interpretation of the electrocardiogram in these circumstances is as much an art as a science, entailing recognition and assessment of subtle, frequently non-specific abnormalities.² In view of the importance of electrocardiographic interpretation in the management of patients with chest pain, we examined the interpretative skills of the acute medical receiving team in our hospital.

Over two months 84 patients with chest pain were admitted to the acute medical ward (admissions to the coronary care unit were excluded from the study). An electrocardiogram was obtained on admission and was reported by the acute receiving team (a consultant, a senior house officer, and a junior house officer). In most subjects (76) a second electrocardiogram was obtained on day 2 of admission. The electrocardiogram was reported as normal, presence of acute ischaemia, presence of an old myocardial infarction, or other findings. All electrocardiograms were subsequently reviewed by a senior member of the cardiology team (registrar or senior registrar). Information regarding presentation, history, previous electrocardiograms, and cardiac enzymes was available to both groups.

The acute medical team indicated that 104 of the 160 electrocardiograms obtained were normal, while the cardiologists thought that 102 were normal. Ischaemia was identified in 26 electrocardiograms by the acute medical team (though two of these were reported as normal by the cardiologists) compared with 28 by the cardiologists. Old myocardial infarction was identified in 14 of 84 electrocardiograms by the medical team and in 15 by the cardiology staff. Other findings (right bundle branch block, atrial fibrillation, supraventricular tachycardia, and a paced rhythm) were noted to be present in four of 84 by both groups. Overall, the acute medical team and cardiologists agreed on the electrocardiographic findings in 154 of the 160 electrocardiograms.

This study shows that the ability of general physicians to interpret the electrocardiogram of patients presenting with chest pain is broadly similar to that of cardiologists.

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- 1 Montgomery N, Hunter S, Morris S, Naughton-Morgan R, Marshall RM. Interpretation of electrocardiograms by doctors. *BMJ* 1994;309:1551-2.
- 2 Mills P. Interpretation of electrocardiograms. *BMJ* 1995;310:467-8.

Incidence of and mortality from breast cancer since introduction of screening

Scottish figures show higher incidence and similar mortality

EDITOR,—Mike Quinn and Elizabeth Allen's analysis of trends in the incidence of and mortality from breast cancer in England and Wales prompts us to report equivalent data for Scotland. Overall, during 1979-92 the average annual age standardised incidence of breast cancer (standardised to the European standard population) was higher in Scotland (90.7/100 000) than in England and Wales (85.9). Analysis of age specific incidence shows that most of the excess incidence arose consistently over time among older age groups in Scotland. Obviously, the number of cases in Scotland is substantially lower than that in England and Wales, so that annual incidence and mortality are more susceptible to random fluctuation. However, trends in European age standardised incidence (fig 1) and age specific incidence follow a broadly similar pattern to that observed in England and Wales.

Scottish data on mortality are not subject to the

Fig 1—Age standardised incidence of breast cancer among women (1979-92) and age standardised mortality from breast cancer in women aged 55-69 (1950-94), England and Wales and Scotland

potential artefacts described by Quinn and Allen, which, as they say, relate to changes in the interpretation of the World Health Organisation's rule 3 and changes in policy regarding inquiries to certifiers for further information. Overall, during 1979-94 the average annual European age standardised mortality from breast cancer in Scotland (39.0/100 000) was similar to that in England and Wales (39.7). If we assume that the data are of comparable quality then the higher incidence and similar mortality in Scotland imply that survival prospects are more favourable there than in England and Wales. In terms of relative survival from breast cancer, however, there were no substantial differences between Scotland and the English registries in the Eurocare study.² Although the European age standardised mortality for 55-69 year olds has been lower and more variable in Scotland, it has followed a similar trend over time to that observed in England and Wales. The recent fall in mortality observed in England and Wales seems, however, to have been less dramatic in Scotland (fig 1).

We agree that it is too soon for any recent changes in mortality to be attributed directly to the national breast screening programme. Preliminary analysis of the Scottish Cancer Therapy Network's recently completed national audit of breast cancer shows that, between 1987 and 1993, surgery to the axilla has increased, the quality of pathological reporting has improved, and the proportion of patients receiving systemic adjuvant treatment has increased (papers in preparation). While there are no grounds for complacency, this lends support to the view that treatment factors may indeed have some impact on mortality.

We thank Mike Quinn and Liz Allen for supplying the data from their paper.

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- 1 Quinn M, Allen E on behalf of the United Kingdom Association of Cancer Registries. Changes in incidence of and mortality from breast cancer in England and Wales since introduction of screening. *BMJ* 1995;311:1391-5. (25 November.)
- 2 Berrino F, Sant M, Verdecchia A, Capocaccia R, Hakulinen T, Esteve J, eds. *Survival of cancer patients in Europe; the Eurocare study*. Lyons: International Agency for Research on Cancer, 1995. (IARC scientific publications No 132.)

Several factors must have a role in improved figures

EDITOR,—Mike Quinn and Elizabeth Allen's suggestion that better treatment in breast cancer has led to a fall in mortality from 1990 onwards is interesting.¹ As the authors imply, the widespread use of tamoxifen can be only part of the explanation.

A more direct way of looking at the outcome of changes in treatment is to analyse trends in survival. Survival rates among 34 107 women with breast cancer diagnosed between 1968 and 1987 have been calculated from data from the Scottish cancer registries.² Figure 1 shows the five year relative survival rates for women aged between 35 and 74 with breast cancer diagnosed during four quinquennial periods before the introduction of the United Kingdom's national breast screening programme. Survival increased monotonically from 1968-72 to 1983-7 in each age group. The increase in five year relative survival between

Fig 1—Five year relative survival rates by year of diagnosis

1968-72 and 1983-7 was larger in the age groups under 55 (11% and 9% for women aged 35-44 and 45-54 respectively) than in the older age groups (9% and 6% for women aged 55-64 and 65-74 respectively).

While use of tamoxifen since the early 1980s could partly explain recent improvements in survival in postmenopausal women, it could not account for the large increase in survival in the youngest age group, which is unlikely to have been prescribed tamoxifen.³ This implies that treatment factors other than the use of tamoxifen must have a role. These are likely to include more effective and widespread use of chemotherapy and radiotherapy, the emergence of multidisciplinary breast cancer teams, and increasing specialisation of breast cancer surgeons.

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- 1 Quinn M, Allen E on behalf of the United Kingdom Association of Cancer Registries. Changes in incidence and mortality from breast cancer in England and Wales since introduction of screening. *BMJ* 1995;311:1391-5. (25 November.)
- 2 Black RJ, Sharp L, Kendrick SW. *Trends in cancer survival in Scotland 1968-1990*. Edinburgh: Information and Statistics Division, 1993.
- 3 King's Fund. Consensus development conference: treatment of primary breast cancer. *BMJ* 1986;293:946-7.

Women are often followed up too soon after treatment for cervical intraepithelial neoplasia

EDITOR,—Mark Emberton is right in saying that there is no uniformity of opinion among clinicians regarding the indications for and frequency of follow up after a procedure.¹ The individualistic approach to follow up continues even when national consensus has existed for some time.

It has been recommended that the initial follow up (whether by cervical smear testing alone or with colposcopy) of women who are treated for cervical intraepithelial neoplasia should be delayed until six months after the treatment.² Healing during this time often produces artefacts that may be mistaken for residual cervical intraepithelial neoplasia,³ and

this may result in further unnecessary treatment and increase the woman's anxiety. We looked at the interval between treatment of cervical intraepithelial neoplasia and the next intended follow up visit during a six week survey of colposcopy at all 19 hospitals in the former North West region in 1994.⁴ During this period 246 women were treated at first colposcopy for suspected cervical intraepithelial neoplasia. The interval between treatment and follow up was six months (that is, in agreement with the national guidelines) in 93 of 241 cases. The remaining 148 women were asked to attend for follow up within six months of the treatment; this practice could be regarded as unnecessary and likely to overdiagnose residual cervical intraepithelial neoplasia.

Consultant gynaecologists in the region have been made aware of our finding, and we hope to see a greater concordance with the recommendation on follow up in a future survey.

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- 1 Emberton M. Outpatient follow up. *BMJ* 1995;311:1315-6. (18 November.)
- 2 Duncan ID. *NHS cervical screening programme: guidelines for clinical practice and programme management*. Oxford: National Coordinating Network, 1992.
- 3 Soutter WP. Criteria for standards of management of women with an abnormal smear. *Br J Obstet Gynaecol* 1991;98: 1069-72.
- 4 Saha A, Woodman CBJ, Cook GA, Maresh M. *A report of the North West regional colposcopy audit 1992-94*. Manchester: Royal College of Obstetricians and Gynaecologists Medical Audit Unit, 1995.

Prevalence of hepatitis C virus infection in Hashimoto's thyroiditis

EDITOR,—Duclos-Vallée *et al* have reported that infection with hepatitis C virus may have a role in triggering Hashimoto's thyroiditis.¹ Using enzyme linked immunosorbent assay (ELISA), they detected antibodies to hepatitis C virus in 12 of 50 patients, and a second generation recombinant immunoblot assay confirmed the finding in five of the 12 cases.

As we did not see such a high prevalence of hepatitis C in our outpatients we retested 118 consecutive patients with Hashimoto's thyroiditis for possible infection with hepatitis C virus. Hashimoto's thyroiditis was diagnosed on the basis of serum thyroid hormone concentrations below the normal range (total thyroxine <64.4 nmol/l, total triiodothyronine <1.39 nmol/l), an increased thyroid stimulating hormone concentration (>4 IU/l), and high concentrations of antibody to thyroid microsomes (>150 IU/ml) and to thyroglobulin (>250 IU/ml). Blood samples were tested with an ELISA, and samples yielding positive results were retested with the polymerase chain reaction.²

Additionally, 59 patients in whom both the ELISA and the polymerase chain reaction gave positive results for hepatitis C virus were tested for Hashimoto's thyroiditis (using the above criteria).

Hepatitis C virus was detected by both the ELISA and the polymerase chain reaction in 3% of the patients with Hashimoto's thyroiditis (table 1); this prevalence was slightly higher than that in healthy people in the area (0.21%).³ The prevalence of hepatitis A virus (53%) and hepatitis B virus (4%) did not exceed the prevalences in the area (hepatitis A virus, 20-87% depending on age; hepatitis B virus, 1-5%).

Among the 59 patients positive for hepatitis C virus according to the polymerase chain reaction, increased concentrations of antibodies to thyroid