against free thyroxine, free triiodothyronine, and thyrotrophin, and treatment was continued for 12-15 months. One patient became hypothyroid while taking carbimazole and remained hypothyroid after drug withdrawal. He remained well on long term thyroxine replacement. Three further patients remained well and euthyroid 6-18 months after withdrawal of carbimazole. One patient's thyrotoxicosis relapsed 12 months after carbimazole was stopped; he was treated for a further 15 months and was euthyroid without carbimazole nine months later.

Comment

Amiodarone induced thyrotoxicosis was successfully treated in five patients with carbimazole alone and continuing amiodarone. The present report contrasts with previous descriptions of the ineffectiveness of carbimazole treatment in amiodarone induced thyrotoxicosis.^{1,3} The reason for this discrepancy is not clear, but it may reflect the iodine replete state of British patients, which contrasts with that of those in Tuscany and other iodine deficient areas, where carbimazole has been found to be unhelpful.³ In addition, there was evidence for pre-existing thyroid disease (goitre and

positive thyroid antibodies) in only one patient, whereas other series from outside the United Kingdom included many patients with pre-existing thyroid disorders.⁴ We suggest that in patients presenting with amiodarone induced thyrotoxicosis, especially in areas not deficient in iodine, carbimazole alone should be the preferred treatment. Amiodarone may be continued in such patients, and long term remission of thyrotoxicosis may still result.

We are grateful to the Birmingham cardiologists for permission to report their patients.

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Long term effects of tamoxifen on blood lipid values in breast cancer

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Tamoxifen is now established as adjuvant therapy in patients with operable breast cancer.¹ As large numbers of women take it for many years its other metabolic effects are important.² A recent trial^{3,4} has shown a lower incidence of fatal myocardial infarction in women receiving adjuvant tamoxifen. We present data on blood lipid values in a subset of patients from this trial.

Patients, methods, and results

The 44 patients studied were postmenopausal (mean age 59 years, range 45-74), had unilateral invasive breast cancer, and were included in the Scottish adjuvant tamoxifen trial¹ between 1980 and 1984 and followed up till 1990. Blood samples were taken preoperatively and at roughly annual intervals thereafter. Serum was stored at -70°C. Twenty four

patients in the treatment group received tamoxifen 20 mg daily for five years after mastectomy or until first relapse. At five years 18 were randomised again—eight to stop tamoxifen ("tamoxifen stop" group) and 10 to continue ("tamoxifen continue" group). Twenty patients in the control group were operated on but did not receive tamoxifen.

In 1991 the samples were slowly thawed and the total cholesterol and high density lipoprotein concentrations measured. These determinations were carried out by using an enzymatic method on a COBAS Bio analyser. The precipitant used in high density lipoprotein cholesterol analysis was magnesium chloride phosphotungstic acid. Two sample comparisons were made with Mann-Whitney non-parametric tests. Measurements made six months or less before any recurrence (local, distant, or contralateral) have been excluded. The mean pre-operative serum cholesterol concentration in the treatment group was 6.72 mmol/l (standard error (SE) 0.22) and in the control group 7.03 mmol/l (SE 0.21) (NS).

For each patient the preoperative concentration was taken as baseline and changes from this were calculated. The mean change in cholesterol and high density lipoprotein concentrations was then calculated for each group of patients for each year of follow up. For each patient in the tamoxifen stop and tamoxifen continue groups a new baseline was calculated, being the mean value of cholesterol and high density lipoprotein for years 1-5; and subsequent changes in lipid values were compared with this. The mean changes in serum cholesterol concentration are shown in the table. No significant differences in high density lipoprotein values were observed between either the treatment and control groups or the tamoxifen stop and tamoxifen continue groups (not tabulated).

Comment

This study shows that tamoxifen consistently lowers the serum cholesterol concentration and that this effect ends with cessation of treatment. No significant change in serum high density lipoprotein value was observed but, given the small numbers of patients studied, such an effect cannot entirely be excluded. The particular strengths of this study are that it comprises patients who were treated within a randomised clinical trial¹

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Mean changes in serum cholesterol concentration in each year of follow up for treatment group compared with control group and for tamoxifen stop group compared with tamoxifen continue group

		Year:				
		1	2	3	4	5
Treatment group	Mean change (mmol/l)	-0.52	-0.96	-0.96	-0.88	-1.02
	SE	0.34	0.21	0.25	0.22	0.24
	No of patients	21	15	16	17	19
Control group	Mean change (mmol/l)	-0.06	+0.13	+0.01	-0.01	+0.27
	SE	0.15	0.15	0.25	0.20	0.21
	No of patients	18	12	14	15	13
p Value		0.013	0.003	0.022	0.009	0.001

		Year:		
		6	7	8
Tamoxifen stop group	Mean change (mmol/l)	+0.29	+0.78	+0.74
	SE	0.34	0.38	0.28
	No of patients	7	6	5
Tamoxifen continue group	Mean change (mmol/l)	-0.10	+0.17	-0.39
	SE	0.17	0.20	0.22
	No of patients	9	8	5
p Value		0.169	0.220	0.037

over eight years, which could not now be repeated as an untreated control would be considered unethical. Mortality data from the trial showed a significant reduction in fatal myocardial infarction in the treatment group.⁵ The reduction in serum cholesterol concentration observed is of a magnitude which should be advantageous.⁵

We conclude that tamoxifen significantly reduces the serum cholesterol concentration in postmenopausal women with breast cancer. This drug, used to control one major cause of mortality in women, is found to be benefiting risk factor status for another. It may be worth exploring the potential of tamoxifen or its analogues as cholesterol lowering agents.

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Midwifery and body fluid contamination

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Midwives and obstetricians often come into contact with human body fluids that are known means of transmitting several viral diseases including hepatitis B virus and HIV. Professional bodies, including the Royal College of Obstetricians and Gynaecologists, have issued guidelines to minimise the risk of contamination with body fluids.¹ We conducted this study to assess the efficacy of current methods for minimising contamination of skin of attendants at delivery with mothers' body fluids.

Patients, methods, and results

We examined 226 doctors and midwives for contamination and skin breaks immediately after artificial rupture of membranes, delivery or helping at a delivery, repair of episiotomy, and caesarean section.

The table shows the numbers contaminated on the hands, arms, and face. Of the 103 practitioners conducting vaginal deliveries 99 wore gloves and 87 gowns. Only 46 of the 59 assistants at delivery wore gloves and 44 gowns, which may explain the high rate of contamination of hands (34%) among assistants. Overall, about half of these two groups were contaminated on the arms or hands. Eight of the 28 surgeons performing caesarean sections were contaminated despite wearing gloves, aprons, and cotton gowns. Overall, 95 staff were contaminated on their hands or arms, or both. This suggests that protective measures, including the use of gloves and gowns, were inadequate and ineffective.

Fifty one staff had broken skin, of whom 22 were contaminated with blood; six of 17 staff not wearing gloves had broken skin.

Numbers (percentages) of doctors and midwives with body fluids on hands, arms, and face

Procedure	No contaminated				
	No of practitioners	Hands	Arms	Face	Total
Delivery of baby	103	21 (20)	42 (41)	7 (7)	52 (50)
Taking of baby	59	20 (34)	16 (27)	5 (8)	25 (42)
Perineal repair	25	4 (16)	2 (8)	1 (4)	4 (16)
Caesarean section	28	5 (18)	4 (14)	5 (18)	8 (29)
Artificial rupture of membranes	11	3 (27)	4 (36)		6 (55)
Total	226	53 (23)	68 (30)	18 (8)	95 (42)

Comment

Midwives and obstetricians come into contact with body fluids so often that they may become complacent about the dangers. Those conducting or assisting at deliveries had the heaviest contamination. Perineal repair was associated with the least contamination because little fluid splashes about and the procedure is not carried out hurriedly. Although the least protected, the face was the least contaminated (8.0%). This contrasts with contamination in orthopaedic surgeons, who run high risks of facial splashes.²

The 23% incidence of broken skin is worrying, especially as 35% were not wearing gloves. Recent figures show that in some London districts 1 in 300 pregnant women are HIV positive and about 1% are infected with hepatitis B virus.³ Most skin breaks were on the hands and especially the nail beds.

Langerhans cells in the epidermis are target cells and vehicles for the transmission of HIV.^{4,5} These cells are thought to present the antigen (HIV, bacteria, and other viruses) to T lymphocytes and may facilitate infection with HIV through skin breaks. Langerhans cells are found in the skin and mucous membranes, including oral, vaginal, and cervical epithelium. Braathen *et al* concluded that the assumption that HIV infection occurs exclusively by entry of virus through wounds in skin and mucous membranes into the blood is no longer valid.⁴

Our study shows that the current practices of preventing contamination are inadequate and that staff may be at risk of contracting viral diseases while practising obstetrics. Effective methods to improve protection and reduce the risk of infection are being studied.

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Correction

Oestrogen replacement after oophorectomy: comparison of patches and implants

Two errors occurred in this short report by C Harriet M Anderson and others (11 July, pp 90-1). In the first row of the table (age) the 95% confidence interval of the difference between the means should be -2.7 to 6.4 and the p value should be >0.1.