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Rubella antibody screening

Sir,

There was an increase in the number of clinical and laboratory reports of rubella during the first few weeks of 1993.[1] This confirms the prediction that despite mass immunization periodic resurgences of rubella are to be expected, until disease elimination is achieved.[2]

What is the most appropriate policy for rubella antibody screening in general practice? In the United Kingdom pregnant women are repetitively screened for rubella antibody in every pregnancy. Ideally, however, every patient should be immune before embarking on a pregnancy. In its book *Immunization against infectious disease* the Department of Health states 'General practitioners are uniquely placed to ensure that all women of childbearing age have been screened for rubella antibody and immunized where necessary.'[3] In the United States of America, the Immunization Practices Advisory Committee recommends that a documented history of rubella vaccination can be considered presumptive evidence of immunity.[4]

A study was performed to determine the prevalence of seronegativity by reviewing existing records and testing patients who did not have recorded serology results. Two groups of women were chosen from two King's Lynn practices (combined list size 23 800). The names of all those who reached the ages of 17 years and 25 years between January and December 1991 were obtained from the age–sex registers. Women who did not have serological proof of immunity were invited to attend for screening for rubella antibody. Notes were also tagged so that screening could take place opportunistically.

At the beginning of the study there were a total of 142 17-year-olds in the practices, five of whom had serological proof of immunity. Of the 164 25-year-olds 113 had serological proof of immunity. Thus, 137 women aged 17 years and 51 women aged 25 years were invited to attend for screening. After 10 months, 108 17-year-olds and 25 25-year-olds had attended for screening and their serum tested for immunity at the local hospital. In the 17 years age group attendance was higher among those who had been vaccinated according to their medical records (94/115, 82%) than among those who had not (14/22, 64%). All 108 women were seropositive. In the 25 years age group, 10 out of 25 attended (40%) among those who had been vaccinated and 15 out of 26 (58%) among those who had not. Two of the 15 patients who had not been vaccinated were found to be seronegative and were subsequently vaccinated. The remaining patients were seropositive.

The results suggest that it is worthwhile screening patients who do not have evidence of serology or documentation of previous vaccination. The study would have been strengthened scientifically if there had been better attendance among those patients who had been vaccinated. It is possible that there were more susceptible patients in the remainder. This is unlikely, however, because it is estimated that there is a true vaccine failure rate of less than 2% if the vaccine is administered correctly (Morgan-Capner P, personal communication). Immunity should last up to 40 years.[5]

As a result of the study the practices have adopted the same pragmatic approach as in the USA. Patients who do not have a documented history of vaccination are given the choice of a serological test or vaccination with counselling that they must not become pregnant for one month after vaccination. All pregnant women should be tested for recent infection if they present with a rash or report contact with someone with a rash, because of the possibility of maternal reinfection.[6,7]

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References

1. Anonymous. The resurgence of rubella? *Communicable Disease Report* 1993; **3:** R39.
2. Anderson RM, Nores DJ. Mathematical models of transmission and control. In: Holland WW, Detels R, Knox G (eds). *Oxford textbook of public health. Volume 2.* Second edition. Oxford University Press, 1991.
3. Department of Health. *Immunization against infectious disease.* London: HMSO, 1992.
4. Centers for Disease Control. Rubella prevention. Recommendations of the immunization practices committee. *MMWR* 1990; **39:** 1-18.
5. Chu SY, Bernier RH, Stewart JA, *et al.* Rubella antibody persistence after immunisation. *JAMA* 1988; **259:** 3133-3136.
6. Miller E. Rubella reinfection. *Arch Dis Child* 1990; **65:** 820-821.
7. Best JM, Banatvala JE, Morgan-Capner P, Miller E. Fetal infection after maternal reinfection with rubella: criteria for defining reinfection. *BMJ* 1989; **299:** 773-775.

Psychological consequences of hypercholesterolaemia

Sir,

Between 1988 and 1989 the number of blood samples analysed for cholesterol level in the National Health Service laboratories in England and Wales increased by 30%,[1] and tests are now being carried out in a variety of settings, including the workplace. A pilot study was carried out between April 1989 and March 1990 to examine the psychological effects of a diagnosis of a raised cholesterol level.

Ninety patients were recruited from a hospital outpatient lipid clinic, a general practice and two occupational health departments. The group comprised 51 men and 39 women, 45 of whom had been diagnosed as having familial hypercholesterolaemia, and 45 of whom had a serum cholesterol level above 7.5 mmol l^{-1} Interviews and questionnaires were used to collect the data and the main outcome measures assessed mood, anxiety and self-reported health.

Informing patients about a raised cholesterol level was associated with sleeplessness, worry, depression, feelings of a loss of control over health and an increased dependence on doctors (Table 1). Overall, significantly higher percentages ($P<0.001$) on the main outcome measures were found among patients with familial hypercholesterolaemia than among the screened group, and the higher incidence of coronary heart disease among this group (23 patients, 51%) compared with the screened group (19 patients, 42%) may partly account for this.

Twenty one familial patients (48%) and eight screened patients (18%) were still

Table 1. Reported psychological well being among those with familial hypercholesterolaemia and those found to have a raised cholesterol level on screening.

Problem resulting from knowing cholesterol level raised	% of respondents: Familial hypercholesterolaemia group experience problem		Screened group experience problem	
	Never/ rarely	Sometimes/ often	Never/ rarely	Sometimes/ often
Sleeplessness (n = 44/31)	77	23	77	23
Depression (n = 45/29)	53	47	79	21
Feelings of:				
No power over life (n = 45/29)	78	22	97	3
No control over health (n = 44/29)	55	45	76	24
Dependency on doctors (n = 20/10)	15	85	50	50
Current anxiety (n = 45/42)	36	64	60	40

n = total number of respondents in familial hypercholesterolaemia/screened group.

worried about having a raised cholesterol level one year after diagnosis. Being diagnosed as having hypercholesterolaemia increased feelings of vulnerability to disease generally. Following diagnosis 28 patients from both groups (31%) felt at risk from diseases both related and unrelated to coronary heart disease, compared with 10 patients (11%) before diagnosis ($P<0.05$). Worries about health since diagnosis had stopped 12 of the familial group (29%)($P<0.01$) and eight of the screened group (18%)(not significant) from engaging in activities that they had engaged in prior to diagnosis, and 39 of the sample (43%) believed that a raised cholesterol level meant that they were unhealthy.

The results confirm the findings of other studies which have shown that positive screening results for risk factors such as hypertension are associated with reduced social activities,[2] increased subjective perceptions of poor health,[2] increased depression and tension,[3] lower scores on self-reported measures of well being,[4] and increased absenteeism and social morbidity[5–7] irrespective of whether any treatment has been prescribed.

Recent government initiatives have ensured that screening for risk factors will remain high on the health care agenda.[8] Informing asymptomatic individuals of the presence of a risk factor which may give rise to premature death might also give rise to adverse psychological consequences. Further research is called for into the psychological consequences of screening for raised cholesterol levels, and a role for counselling following the screening and diagnosis of hypercholesterolaemia may be indicated.

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References

1. Standing Medical Advisory Committee. *Blood cholesterol testing.* London: HMSO, 1990.
2. Haynes RB, Sackett DL, Taylor W, *et al.* Increased absenteeism from work after detection and labelling of hypertensive patients. *N Engl J Med* 1978; **299:** 741-744.
3. Monk M. Blood pressure awareness and psychologic well-being in the health nutrition examination survey. *Clin Invest Med* 1981; **7:** 183-189.
4. Soghikian K, Fallick-Hunkeler EM, Ury HK, Fisher AA. The effect of high blood pressure awareness and treatment on emotional well-being. *Clin Invest Med* 1981; **4:** 191-196.
5. Charlson ME, Alderman M, Melcher L. Absenteeism and labelling in hypertensive subjects. Prevention of an adverse impact in those at high risk. *Am J Med* 1982; **73:** 165-170.
6. Polk BF, Harlan LC, Cooper SP, *et al.* Disability days associated with detection and treatment in a hypertension control program. *Am J Epidemiol* 1984; **119:** 44-53.
7. Taylor DW, Haynes RB, Sackett DL, Givson ES. Longterm follow-up of absenteeism among working men following the detection and treatment of their hypertension. *Clin Invest Med* 1981; **4:** 173-181.
8. Secretary of State for Health. *The health of the nation: a strategy for health in England (Cm 1986).* London: HMSO, 1992.

Thyroxine prescription

Sir,

In the paper by Parle and colleagues, 48% of patients were receiving inappropriate dosages of thyroxine,[1] whereas other studies have reported inappropriate doses among 39%[2] and 32%[3] of patients.

One of the aims put forward by Parle and his team was to investigate indications for thyroxine prescription in the United Kingdom. This was achieved by examination of the patients' notes and has obvious sources of potential error. The first is that such recording can be incomplete, inaccurate or missing. Secondly, only those patients receiving thyroxine as recorded on the practice computers were investigated. We are not told whether this included all patients taking thyroxine.

Although Parle and colleagues are to be congratulated on showing unequivocal primary hypothyroidism (low total serum thyroxine level or low free thyroxine and raised thyroid stimulating hormone level) in 113 out of 146 patients receiving thyroxine (77.4%), the low percentage of all patients receiving thyroxine (0.8% compared with 1.9% found by Tunbridge and colleagues[4]) almost certainly means that at least the same number of patients again could be taking thyroxine in these practices. A study carried out by Swansea general practitioner trainees[3] showed that older patients not on the computer, who had been taking thyroxine for many years often had no thyroxine stimulating hormone level recorded. The fact that the mean duration of thyroxine replacement therapy quoted by Parle was seven years for men and eight years for women lends further credence to the argument that older patients taking thyroxine were probably missing from the study.

A further possible source of error arises when thyroxine is inappropriately used following transient hypothyroidism. This is known to occur after surgery,[5] radioactive iodine ablation,[6] pregnancy[7] and viral thyroiditis.[8] The Swansea study not only identified patients who were taking inappropriate doses of thyroxine but also used a withdrawal test[9] to test the appropriateness of having thyroxine replacement therapy. The withdrawal test over 21 days identified 28% of the studied sample who did not require thyroxine at all. The test was safe, provided that those who were truly hypothyroid and needed to return to treatment were recommenced slowly. The commonest reason in 1984 for commencement of thyroxine was its use by surgeons before local trauma to the gland had been allowed to settle[3] (I suspect this happens much less frequently these days, if at all).

As shown by Parle, thyroxine stimulating hormone level measurement is a good indicator of adequate thyroid replacement, as free thyroxine measurements can be affected by other drugs.

The authors rightly conclude that regular review of thyroid function tests should take place to ensure optimal control. There are currently several regional centres which now allow regular automated follow up and these include the Scottish and Welsh automated follow-up registers which should also provide us with important and useful follow-up data.

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