Management of myocardial infarction in Scotland: have clinical trials changed practice?

Acute myocardial infarction remains one of the most common indications for emergency admission to hospital. During the past two decades the main changes in management have been the widespread introduction of coronary care units and the trend towards earlier ambulation. The use of prophylactic antiarrhythmic treatment and long term anticoagulant drugs has declined.

Recent studies have suggested a number of further management options in the acute and convalescent phases of myocardial infarction, such as β blockade, thrombolytic treatment, antiplatelet agents, and the use of exercise testing to identify high risk individuals.¹ These studies have been discussed extensively in both cardiological² and general medical³ journals. The aim of this study was to assess the impact of such trials (and reviews) on hospital practice.

Methods and results

A questionnaire was sent to 160 consultant physicians practising in Scotland; names were obtained from the membership list of the Scottish Society of Physicians, which includes most Scottish physicians. In addition to questions relating to management of infarction (table), details of age and specialist interest were sought.

The χ^2 test was used to assess the significance of the results.

Replies were received from 128 consultants (80% response rate), 69 of whom (54%) were based in teaching hospitals. Thirty six (28%) were cardiologists or physicians with an interest in cardiology. The median period of bed rest recommended for patients who have suffered a myocardial infarction was three days (mean 3.1 days). Although the mean period of bed rest recommended increased with the age of the physician, the differences were not significant. The table shows the number of respondents who use exercise testing and β blockers in patients who survive myocardial infarction.

Use of β blockers and exercise testing in the management of survivors of myocardial infarction by physicians and by cardiologists. Figures are numbers (percentages) of doctors

	Cardiologists (n=36)	Physicians (n=92)
β blockers	21 (58.3)	29 (31)
Exercise testing	23 (64)	23 (25)
Both	16 (44.4)	12 (13)
Neither	8 (22.2)	52 (56.5)

* $p < 0.01$.

Comment

The results of this survey show significant differences in the management of patients who have suffered a myocardial infarction by physicians and cardiologists, particularly with respect to the use of β blockade and exercise testing. A previous survey of British cardiologists showed that most of them (72%) prescribed β blockers after myocardial infarction, suggesting that this approach had become accepted in clinical practice.⁴ Although our series included fewer cardiologists, the majority (58%) also prescribed β blockers. Most patients who survive a myocardial infarction are managed by general physicians, however, who seem to be less enthusiastic about this treatment.

Treatment of all survivors of myocardial infarction with β blockers would mean that a number of individuals at low risk of further cardiac events would be treated, probably without benefit. It is generally agreed that β blockers reduce annual mortality by about 20%; however, studies have not shown conclusively which patients benefit most. Thus treatment of all patients without contraindications has been advocated. As a large number of patients need to be treated to reduce mortality from 10% to 8%, the concept of risk stratification has arisen with the aim of identifying high risk groups who would benefit from treatment and excluding low risk groups whose already good prognosis would not be significantly improved. Several management schemes using exercise testing have been suggested. Our findings indicate, however, that most physicians use neither β blockers nor exercise testing.

Although reservations have been expressed about the safety of early mobilisation, our survey confirms that this policy is widely adopted. In the current setting of shortage of beds and attempts at cost cutting in hospitals it is perhaps understandable that such an approach has been generally accepted.

We do not wish to imply that there is an ideal method of treating patients

who have suffered a myocardial infarction. Survivors of infarction are a heterogeneous group. There is no general agreement on how such patients should be managed, and it seems unlikely that there ever will be. At present, β blockers and exercise testing appear to be used more widely by cardiologists than by general physicians.

We thank our colleagues who took the trouble to respond to the questionnaire.

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Long term effect of oestrogen replacement therapy on bone mass as measured by dual photon absorptiometry

Long term oestrogen replacement therapy prevents postmenopausal bone loss when started soon enough after loss of ovarian function.^{1,2} Dual photon absorptiometry with gadolinium-153 uses two energy levels and allows for soft tissue interference. It also permits measurement of bone mass in areas that were previously less well examined—for example, lumbar spines and the femoral neck. Measurement at one site gives limited information about density at other sites.³

There is no direct information in previous reports about long term effects of oestrogen on vertebral mineral content, and there are no data at all about any potential effects on bone in the neck of the femur. To address these issues we measured bone mass in the lumbar spines and femoral neck of patients participating in a long term controlled study of the effects of oestrogen in women after oophorectomy.^{1,2,4} We report here the long term effect of oestrogen on bone mass at the major fracture sites in postmenopausal osteoporosis.

Patients, methods, and results

Twenty five consecutive patients at our clinic who were still participating in the placebo arm of the study (years since menopause=15.8 (SD 2.3)) and an equal number of patients receiving mestranol (years since menopause=14.9 (2.5)) agreed to participate in this study. No attempt was made to match the patient groups, consecutive attendance being the sole requirement for entry to the study. All patients had had oophorectomy premenopausally. To show that the groups were representative of the original study population they were compared with the patient groups reported on previously.¹ As there were no significant differences in height, weight, age at operation, or original measurements of bone mass we considered that the groups reported on here were typical of the parent population. The average daily dose of mestranol was 26 μ g.

The bone mineral content of the lumbar spines (L2-L4) and right femoral neck was estimated by dual photon absorptiometry (DP3, Lunar Radiation Corporation, Wisconsin). The coefficient of variation of the technique obtained by triplicate estimates in 24 women was 1.7% within the ranges of bone mass reported here. The significance of differences in mean values was determined with Student's *t* test as bone mass is normally distributed within age groups.

The mean number of years of treatment was similar in both groups. The table

Comparison of bone mineral density (g/cm²) in 25 women given mestranol and 25 given placebo. Values are means (SD)

Site of measurement	Treatment		Significance	
	Mestranol	Placebo	<i>t</i>	<i>p</i>
Lumbar spines (L2-L4)	1.17 (0.16)	0.94 (0.13)	5.5	<0.001
Femoral neck	0.87 (0.13)	0.77 (0.10)	2.9	<0.01
Ward's triangle	0.77 (0.15)	0.64 (0.13)	3.1	<0.01
Greater trochanter	0.71 (0.14)	0.68 (0.12)	0.72	NS

shows the bone mineral density at each site. Except in the trochanteric area, bone mineral density was significantly greater in the group treated with oestrogen.

Comment

Our results show that oestrogen prevents bone loss at three of the four skeletal sites at which bone mineral density was measured. The risk of fractures of the femoral neck and vertebral bodies has been attributed to differing pathogenetic influences.⁵ Nevertheless, the importance of preservation of bone mass in reducing the incidence of fractures cannot be overemphasised.

We found that bone mass was preserved not only in cancellous bone but also in compact bone, although the effect in cancellous bone was much more pronounced. Thus adequate oestrogen replacement therapy in postmenopausal women should result in the incidence of fractures among women falling to that among men.

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Complications of nose piercing

Both ear and nose piercing for decorative purposes are widely practised, the latter being particularly popular among Asian women. Though subcutaneous stud retention after ear piercing has been described,^{1,2} to the best of our knowledge this is the first report of similar complications from nose piercing.

Case histories

Case 1—A 20 year old Asian woman presented to the casualty department one week after having had her nose pierced and a decorative stud retained by a butterfly clasp inserted. Her nose had become increasingly painful, and the stud had apparently disappeared. External examination of the nose showed a firm, tender nodule covered by a dark crust (figure (a)), and internal examination showed the butterfly clasp partly buried in granulation tissue within the nostril

(figure (b)). The positions of the stud and clasp were demonstrated radiographically (figure (c)). Under local anaesthesia the stud and clasp were withdrawn through a small incision inside the nostril. One week later the nose had healed completely.

Case 2—A 12 year old Asian girl presented with a painful nose. Two months previously it had been pierced and a stud inserted. Externally the stud was visible but internally the butterfly clasp was concealed within a tender swelling on the lateral wall of the vestibule. This was confirmed radiographically. Under local anaesthesia an intranasal incision was made over the swelling, the clasp identified and removed from the stud, and the latter withdrawn separately. Healing was uneventful.

Case 3—A 17 year old Asian woman presented with a painful swelling on her nose, which had been pierced and a stud inserted three months earlier. The clinical features were the same as for the first case, and after removal of the stud the wound healed rapidly.

Case 4—A 70 year old Asian woman presented with left sided nasal obstruction, worse on inspiration. This side of the nose had been pierced 53 years previously, and she had worn a decorative stud for much of this time. The lateral wall of the left nostril was very thin and it collapsed on inspiration. Her alar collapse was treated satisfactorily with a Frances nasal dilator.

Comment

Poor standards of hygiene in the care of the puncture site have led to problems after ear piercing.³ Maintaining hygiene must be more difficult in the nose, particularly as so many people are nasal carriers of staphylococci. A stud placed through the lateral wall of the nose may penetrate the lateral nasal cartilages, with the possibility of inducing perichondritis and necrosis of the cartilage. This might explain the alar collapse seen in case 4.

Studs made from base metals have caused more problems in the ear than those made from gold or silver.³ Interestingly, all of our patients' studs were made of gold. The use of smaller butterfly clasps increases the risk of problems after ear piercing.⁴ Nevertheless, none of our patients had used small clasps.

Before the 1980s none of us had come across anyone other than Asian girls and women wearing nasal studs. Since the "punk rock" era, however, it is now fashionable for young women of any ethnic origin to undergo nasal piercing. One can observe this by visiting trendy wine bars and other places, even hospitals. Thus complications of nose piercing may be encountered more often in the future. In our experience simple removal of the retained stud has resulted in uneventful healing and antibiotic treatment has not been required.

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The nose in case 1: (a) external; (b) internal; (c) plain x ray film.