Key messages

- Women have been reported to have higher case fatality after admission to hospital after myocardial infarction
- Data from a community based coronary heart disease register were used to examine sex differences in case fatality before and after admission
- Women had a higher case fatality after admission but a lower case fatality before admission
- Total case fatality 28 days after an acute cardiac event showed no significant difference between men and women
- The higher case fatality after an acute cardiac event in women admitted to hospital is largely explained by confounding

sion, little angiographic information was available, and previously postulated theories which associated the extent and severity of infarcts to sex related differences in mortality were not assessed.[5] Furthermore, as information on deaths before admission was gathered from relatives, these data were not as complete or possibly as accurate as they were for those admitted to hospital. There is, however, no reason to believe that these missing data were associated with sex and therefore it is unlikely that they will bias the results. The addition of patients with missing data on medical treatment to the analysis made little change to the case fatality ratio, although this analysis required the removal of some variables from the model.

No previous study has examined in detail the relation between sex and mortality before admission to hospital after an acute coronary event. Brett and Madans included deaths before admission in their long term survival study but did not perform separate analyses on this subgroup of patients.[7] Our study shows that women, despite a less favourable risk profile, have a lower case fatality before admission to hospital and therefore an increased chance of arriving in a coronary care unit. This may be explained by more men experiencing a sudden or early death leading to a lower risk cohort arriving in hospital. It has been suggested, however, that women have a longer delay in seeking treatment,[12] resulting in more preventable deaths and a reduced survival before admission. The delay has been associated with women's lower awareness of the risk of coronary heart disease, their less specific symptoms of myocardial infarction,[13] and the higher proportion of women living alone.[14] These factors could adversely influence the outcome in women, and this is supported by the present study as correction for living arrangements increased the sex difference in survival before admission. Among patients in hospital, however, no difference between sexes was observed in time from onset of symptoms until arrival in coronary care unit, which suggests that the delay in seeking treatment is likely to be fatal before arrival in hospital. Previous studies on patients in hospital revealed a higher crude case fatality among women, and this is supported by our results.[2-6] Adjustment for age and a wide range of different covariates reduced the sex difference in some studies and completely explained it in others.

The observed paradox of a lower incidence of acute myocardial infarction in women and a higher case fatality in hospital is complex. This study shows that the higher case fatality in women after admission to hospital is balanced by their higher survival before admission and is largely explained by their unfavourable risk profile.

Funding: Health Research Council of New Zealand and the National Heart Foundation of New Zealand.
Conflict of interest: None.

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(Accepted 29 July 1996)

What information is available on request from drug advertisers in India?

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BMJ 1996;**313**:855–6

Drug advertisements rarely give complete information on the product, but advertisers usually offer to give more information on request. We studied how often this request is met and the quality of the information given.

Methods and results

We studied 87 advertisements in a recent issue of the *Monthly Index of Medical Specialities* (*MIMS-India*). Fifty five advertisements offered some more information; in 31 cases further information was offered, in 16 full prescribing information, in two complete prescribing information, in one detailed prescribing information, and in five further details. We posted a standard letter demanding the offered information to the given address of the 26 pharmaceutical companies that had placed the 55 advertisements for 58 products. Non-responders were reminded in a letter with a certificate of posting after six weeks. Information for 31 products was received after the first letter within three to 35 days (average 20). For a further 13 products a reply was obtained after the reminder letter within four to 89 days (average 21). Information was not made available for the remaining 14 products.

For 13 of the 44 products with further details, the information was in the form of promotional pamphlets with or without the prescribing details; for 11 it was the therapeutic index of the company (a list with some description of all products), for seven promotional booklets, for seven typed or printed text such as a statement of claims, for four package inserts, and for two a newsletter or trial report. We read and evaluated the information against standard,

Table 1—*Evaluation of information received for 44 pharmaceutical products*

Heading*	No of products with information made available
International non-proprietary name	42
Pharmacological data:	
Pharmacological effects	10
Mechanism of action	35
Clinical information:	
Indications	42
Dosage regimen and relevant pharmacokinetic data†	19-35
Contraindications	26
Precautions and warning	31
Adverse effects	32
Drug interactions	24
Overdosage‡	11
Pharmaceutical information:	
How product can be given	39
Content quantity for each means of administration	38
Additives (sweeteners, flavourings, colourings)	0
Storage conditions and shelf life	11
Pack sizes	30
Description of product and package	29
Legal category	0
Name and address of manufacturer	40

*As suggested by World Health Organisation.[1]
†Includes average dose and range, dosing interval, duration of treatment, and modifications as required.
‡Symptoms, treatment, and antidote.

desirable headings (table 1).[1] None of the replies mentioned the legal category or the additives (sweeteners, flavourings, and colourings) used in the product. Pharmacological actions and details of overdosage and storage conditions were missing for 33 products. Side effects, precautions, contraindications, and drug interactions were not described in 12-20 products. Non-proprietary names, mechanism of action, indications, average dose, dosage form and its content quantity, or manufacturer's name were not given for nine products.

Comment

We found that a request for further information was usually answered, albeit slowly, although some requests were never answered. This may reflect the lack of appropriate legislation. Advertisers use different phrases to offer further information, which might just be a difference in semantics but could be of great importance legally. A uniformly worded offer would therefore be desirable.

Companies were also clearly unsure about the form of further information. In fact, the helplessness of the medical executive of a company was obvious when he wrote: "We are not clear about the type of information you need...." Generally, the information supplied was either too little (therapeutic index), too much (booklets up to 34 pages long), irrelevant (newsletter), purely promotional (pamphlets), or difficult to read (package inserts). Even when information seemed to be in order it was presented so mechanically that it would fail to impress busy practitioners who are not trained to understand clinical pharmacology.

The basic information given to prescribers is generally poorly presented and difficult to use.[2] Several formats of drug information have been suggested and are in use.[3] In our study we used a format suggested by the World Health Organisation,[1] and we find it to be reasonable. The desired information can be given in this format in an easily read printed document of four to five pages long. However, information can lead to the optimum use of a drug only if it is comparative for every point. This is essential in developing countries with few sources of drug information and many commercial pressures. Our results are likely to be similar in most developing countries. We would, however, be interested to see how matters differ in developed countries.

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(Accepted 17 November 1995)

Hepatitis B and admission to medical school: an audit of British medical school policy

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See editorial by Gilson

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BMJ 1996;313:856–7

In 1993 the health departments in the United Kingdom issued guidance on hepatitis B,[1] requiring all healthcare workers (including medical students) who perform exposure prone procedures to be vaccinated against hepatitis B and to have their serological response to the vaccine checked. Healthcare workers who perform invasive procedures and who do not respond to vaccination must be tested for hepatitis B carrier status. Those who are found to be positive for surface antigen without "e" markers (HBsAg positive) need not be excluded from any work. Workers who have "e" markers (HBeAg positive) should be excluded from invasive procedures.

In 1994 the Committee of Vice Chancellors and Principals agreed guidelines for universities on the fitness of students to practise medicine.[2] They recommended that "all successful applicants for entry into medical school should produce satisfactory evidence of non-infectivity and immunisation against hepatitis B by the time of registration as a medical student." The advice was expanded to say: "All applicants should be screened for hepatitis B virus and antibody, and subsequently immunised if necessary, before entry to medical school."

These guidelines do not specify which tests should be performed or what antigenic status is incompatible with medical school entry.

Subjects, methods, and results

To ascertain how British medical schools interpreted the guidance, we sent a questionnaire to all 27 medical school deans in Britain in October 1995. The questionnaire asked what policy the medical school adopted for the 1995 student entry and the requirements of the policy.

Valid replies were received from 23 medical schools (85%). Two deans replied but declined to answer any of the questions, and no reply was received from two medical schools.

All respondents had a policy on hepatitis screening and vaccination for prospective students. Twelve medical schools expected students to have started a course of vaccination, but only four expected them to have completed the course by registration. A variety of hepatitis screening tests were sought (table 1), but only two medical schools adopted the conventional approach of looking for surface antigen and "e" markers only in students who fail to seroconvert after hepatitis B vaccine. Two medical schools are asking for tests for hepatitis C, ahead of anticipated guidance.