

Thames regions, the authors report that, among all patients with a main diagnosis of angina or chronic ischaemia, men were significantly more likely than women to receive surgical treatment. None of the several possible clinical explanations satisfactorily explains the differences, and the true explanation is more likely to arise from a system of beliefs that leads to women with disease being referred for investigation and treatment much less commonly than men. Although the well known excess of coronary heart disease in men might explain this bias, substantial evidence exists that such different patterns of referral and treatment apply in other conditions such as renal failure in which no such male preponderance exists.

This study raises questions about a systematic difference in the treatment received by men and women in Britain which lacks any clinical justification. Instead, treatment seems to reflect the different attitudes that doctors, and possibly patients, have to the risks and benefits of intervening in coronary heart disease in men and women. The authors suggest that these attitudes may be influenced by the fact that most studies of prevention and treatment of cardiovascular diseases (and indeed many other conditions) have been conducted exclusively on male populations. They point out that whether women's reduced access to surgery necessarily implies disadvantage in Britain is unclear: we do not have sufficient comparative information to make sensible judgments.

There is now a consensus for more studies in women and, indeed, further studies in overlapping populations such as elderly people and ethnic minorities.<sup>17</sup> We need to know whether the present recommendations for preventing, investigating, and treating coronary heart disease, which are largely based on the experience in white middle aged men, are equally appropriate in women, elderly patients, and other ethnic groups. We need studies to identify differences in the recognition of symptoms, the results of diagnostic tests, and referral rates and to assess the impact of any such differences on prognosis and recovery from coronary heart disease. Trials of specific interventions for coronary heart disease such as oestrogen replacement treatment and dietary or pharmacological interventions in women are also required.

How can this be taken further? The Office of Research on Women's Health was set up by the National Institutes of Health in the United States to address the inequality of women in health research and care; a 10 year, \$500m research initiative that started in 1991 includes clinical trials and observational studies as well as research on methods to promote healthy behaviour in women. Do Britain's women deserve something similar? The deficiency of data on risk factors, prevention, and treatment of heart disease in women in Britain is even greater than in the United States despite the fact that British women have one of the highest rates of coronary heart disease worldwide.

Arguments that we may be duplicating the American efforts and, given the constraint on resources for research in Britain, should await the findings from these studies are easily countered. Just as generalising findings from men to women is difficult so too is extrapolating findings from one country to another with different distributions of risk factors, incidences of disease, secular trends, and health care organisation. We need locally relevant data.

Findings from any one study in any one place are never completely conclusive: even if biological mechanisms are universal, differing prevalences of risk factors, changing natural courses of disease, and the ways that interventions are applied may profoundly influence the absolute benefits from interventions tested under the strictly controlled conditions of a particular research study. This implies the need not only for definitive trials but also for continually monitoring and evaluating the impact of practices in changing circumstances. Problems, priorities, and optimal solutions may differ from place to place.

As a first step women should be included in future research studies unless good reason exists for excluding them. More formally, we need an organisational framework to identify the gaps in our knowledge that inhibit our ability to recommend best clinical practice and prioritise research needs. Britain's NHS research and development programme under the direction of Professor Michael Peckham may provide the framework for addressing the lack of information not only on coronary heart disease in women but also on other conditions and in other previously neglected groups. High among its list of research priorities is likely to be the need for better evidence on which to base our policies for prevention and health care in women. Funding initiatives within the research and development programme or encouragement from other research funding bodies may stimulate such research.

The test of medical research will be its impact on influencing and improving practice and ultimately, health outcome. Inadequate understanding of the process of disease in women and how and why it may differ from that in men may result not only in inappropriate interventions in women, whether in preventing or in treating disease, but also in limited understanding of the pathophysiology of disease in humans in general. While more research in women may directly benefit women, it could provide further benefits to men.

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- 1 Healy B. The Yentl syndrome. *N Engl J Med* 1991;325:274-6.
- 2 Gurwitz JH, Col NF, Avorn J. The exclusion of the elderly and women from clinical trials in myocardial infarction. *JAMA* 1992;268:1417-22.
- 3 Ayanian JZ, Epstein AM. Differences in the use of procedures between women and men hospitalized for coronary heart disease. *N Engl J Med* 1991;325:221-5.
- 4 Steingart RM, Packer M, Hamm P, Coglianese ME, Gersh B, Geltman EM, et al. Sex differences in the management of coronary artery disease. *N Engl J Med* 1991;325:226-30.
- 5 Khan SS, Nessim S, Gray R, Czer LS, Chaux A, Matloff J, et al. Increased mortality of women in coronary bypass surgery: evidence for a referral bias. *Ann Intern Med* 1990;112:561-7.
- 6 Petticrew M, McKee M, Jones J. Coronary artery surgery: are women discriminated against? *BMJ* 1993;306:1164-6.
- 7 Fair of face and sick at heart [editorial]. *Lancet* 1991;338:1366-7.

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## Correction

### Short acting benzodiazepines

Owing to a printer's error two references were omitted from this editorial by Michael C O'Donovan and Peter McGuffin (10 April, pp 945-6):

- 15 Bayer AJU, Bayer EM, Pathy MSJ, Stoker MJ. A double blind controlled study of chlormethiazole and triazolam as hypnotics in the elderly. *Acta Psychiatr Scand* 1986;73(suppl 329):104-11.
- 16 Bliwise DL, Seidel WF, Cohen SA, Bliwise NG, Dement WC. Profile of mood states changes during and after 5 weeks of nightly triazolam administration. *J Clin Psychiatry* 1988;49:349-55.