Antihypertensive drugs help prevent headaches

Research question Do blood pressure lowering drugs prevent headaches?

Answer Yes. Commonly used antihypertensive drugs reduce the prevalence of headache by a third compared with placebo.

Why did the authors do the study? Doctors and patients have been debating for 50 years whether high blood pressure causes headache. Most doctors believe it doesn't, although there's limited evidence from clinical trials that treating hypertension can relieve headache, especially migraine. These authors wanted to clarify the picture by synthesising all high quality, unbiased data on the link between lowering blood pressure with drugs and headache

What did they do? They did a systematic search for all double blind, randomised, placebo controlled trials of four classes of antihypertensive drug published between 1966 and 2001, then combined in a meta-analysis the 94 trials that reported data on headache. The four classes of drug were thiazides, β blockers, angiotensin converting enzyme inhibitors, and angiotensin II receptor antagonists. Calcium antagonists were excluded because they can cause headache through vasodilation. The 94 trials included 23 599 people in all who were treated, double blind, for 2-14 weeks. Trials of patients with heart failure or acute myocardial infarction were excluded, otherwise trials were included regardless of the diseases of the participants.

What did they find? On average, active treatment lowered systolic and diastolic blood pressures by 9.4 and 5.5 mm Hg relative to placebo. People treated with an antihypertensive drug were a third less likely to report headache than control patients who took placebo (1416/17 641 (8%) *v* 818/6603 (12%); odds ratio 0.67, 95% CI 0.61 to 0.74; $P < 0.001$). The impact of treatment on the prevalence of headache was consistent across all four classes of drug, although there was a suggestion that β blockers were better at preventing headache than the other types of drug (odds ratio 0.47, 0.35 to 0.63). The authors estimate that one in 30 people who take these drugs get relief from headaches.

There was a clear and direct relation between the reduction in diastolic blood pressure achieved by a trial, and the reduction in headache reported by its participants. Prevalence of headache went down by an extra 13% (relative to placebo) for every extra 5 mm Hg reduction in diastolic blood pressure achieved by a trial. The authors say their findings are unambiguous: blood pressure lowering drugs help prevent headache.

What does it mean? It's likely that that these drugs relieve headache by lowering blood pressure, not by some other action. All four types of drug seem to work, and reducing blood pressure is one of the few pharmacological actions they have in common. If lowering blood pressure relieves headache, it follows intuitively that high blood pressure causes headache. Unfortunately, studies like this can never prove it, and a large body of observational evidence suggests otherwise. So the debate will go on, invigorated by this fresh ammunition. In the meantime, about one in 30 patients who take drugs that lower blood pressure will get welcome relief from headaches alongside the more conventional benefits to their cardiovascular risk.

Law et al. Headaches and the treatment of blood pressure: results from a meta-analysis of 94 randomized placebo controlled trials with 24 000 participants. *Circulation* 2005;112:2301-6.

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Editor's choice

Cure or care?

Dogmatism is something we try to avoid at the *BMJ*, whether our own or other people's. How far we succeed may be open to question. Our predecessors, however, suffered no such qualms, if an editorial published in 1880 is anything to go by. "The nurse," it says "must be a person who pays blind obedience to [doctors'] orders." Admirably clear cut, but as Nick Black points out in his article on the rise and demise of the hospital (p 1394), the apparent confidence of these words hides layers of antagonism and insecurity.

At the end of the 19th century, medicine and nursing were in the grip of conflict. Doctors feared that nurses were undermining their authority—fears that were fuelled, according to Black, by social insecurities based around class and sex. Nurses tended to be well educated with independent incomes. As Black puts it, "men had little or no experience of working with women of equal (or even superior) status."

Are things between doctors and nurses so very different today? Nurse prescribing has opened a potentially ugly demarcation dispute in the UK, as has the decision by some states in America to allow nurses to set up independently. Doctors' representatives on both side of the Atlantic are calling foul. But Ghislaine Young, a nurse practitioner who is a salaried partner in a general practice in West Yorkshire, says that she and her colleagues don't want to be mini-doctors but maxi-nurses (p 1415). And this could make sense, provided nurses continue to be cheaper and have more time than doctors to spend with patients.

One question though. If, as she argues, the distinction between medicine (cure) and nursing (care) will become increasingly blurred, how much blurring will it take before the distinction becomes meaningless?

There's another conflict we can't get away from—between medicine and industry. Last week's journal carried a warning that drug company sponsored trials may often breach the uncertainty principle that provides the ethical basis for randomisation. This week, Kenneth Rothman and Stephen Evans come to the defence of drug industry trials (p 1350). They say that JAMA's new policy requiring such trials to have independent statistical review is draconian and absurd. Even if it were workable it would still be unfair to judge work solely on the affiliation of the authors, they say.

Meanwhile, there is shock in some quarters that the word "trial" has become a verb, as in "to trial a drug." Should it not be "try" asks a respondent, as in "to try a prisoner"? We hadn't considered that option and instead had already moved recklessly on into the present continuous tense with the word "trialling" on last week's cover. What our respondent cannot have known but I am here to tell him, is that we had a heated debate about how we should spell this new word, whether with one "l" or two? In the end our style experts went for two. But I'm not so sure.

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