MEDICINE AND THE MEDIA

The press release, relative risks, and the polypill

A press release about a recent paper gave only relative risks, which the lay media then reported. This information is meaningless, writes Margaret McCartney, without any sense of absolute risk.

The polypill unleashed! On 26 May 2011 the Wellcome Trust announced, “International trial finds polypill halves predicted heart disease and stroke risk.”

In a press release it stated, “The once a day polypill contains aspirin and agents to lower blood pressure and cholesterol . . . many experts believe that combining them into a single pill will encourage people to take the medications more reliably” (www.wellcome.ac.uk/News/Media-office/Press-releases/2011/WTVM051508.htm).

The press release contained several statistics, claiming a “halving in heart disease and stroke,” and a “20-50 per cent lower death rate from colon cancer, plus reductions in other major cancers, heart failure and renal failure.” Numbers needed to treat (NNTs) were given for the risk of side effects (“1 in 6 experienced a side effect . . . 1 in 20 overall stopped treatment due to side effects”). At the end of the press release it was noted that “one in three of all deaths are attributable to cardiovascular disease.”

With this surfeit of relative risks we should not have been surprised, therefore, when the Daily Telegraph led with the statement that “10p polypill ‘halves heart disease and stroke risk,’” quoting from the press release in their article. They quoted Professor Sir Nicholas Wald, an early proponent of the polypill, as saying, “Taking a preventive pill should be as automatic as ‘brushing your teeth’” (www.telegraph.co.uk/health/healthnews/8535957/10p-polypill-halves-heart-disease-and-stroke-risk.html). The Metro followed suit, with a “halves disease risk” quote as their headline (www.metro.co.uk/news/864479-polypill-halves-heart-disease-risks-trial-of-new-four-in-one-drug-shows). In the Guardian it was noted that the risk of heart disease and stroke was “cut by 50%, not 80%” as had been predicted by Wald and Malcolm Law in 2003 (www.guardian.co.uk/society/2011/may/25/single-pill-for-heart-disease). It also quoted another author of the trial, Professor Anthony Rodgers, as saying, “we know from other trials that long term there would be a 25-50% lower death rate from colon cancer, plus reductions in other major cancers, heart failure and renal failure.” The same numbers were shared on Fox News (www.foxnews.com/health/2011/05/26/polypill-halves-risk-heart-attacks-strokes-study-claims/) and many other outlets.

What is notably absent is any mention of absolute risk. To know the meaning of a reduction in relative risk, you have to know how likely it was to happen in the first place. The Wellcome Trust is a “global charitable foundation dedicated to achieving extraordinary improvements in human and animal health . . . our breadth of support includes public engagement, education, and the application of research to improve health.” It has a mission for science communication and teaching, saying that the “future of science depends on the quality of science education today.” Has good science communication been achieved with such an emphasis on relative risks?

Here is what the research paper, published in PLoS ONE, said (2011;6:e19857). In all, 378 adults with raised cardiovascular risk entered a randomised, controlled, double blind study to receive a polypill containing aspirin, lisinopril, hydroxycholothiazide, and simvastatin. The study was done in seven countries with small numbers recruited from most. The largest group was from the UK with 113 participants. After 12 weeks of the study, changes to systolic blood pressure, low density lipoprotein cholesterol, and tolerability, along with other secondary outcomes, were assessed. Twenty three per cent of the polypill group stopped their treatment compared with 18% in the placebo group. The changes in blood pressure and cholesterol were calculated to result in various risk reductions from which the “halving” comes. The measured results are effectively proxy measures hoped to reflect long term benefits on cardiovascular risk. The authors also noted that they would expect a “50% increase in the risk of extracranial bleeding.” The number needed to treat, which they do give in the discussion section, is 18. So for every 18 patients treated with the polypill, one will benefit; 17, or 94%, will not.

So the data on absolute risk were in the paper but not conveyed in the press release or media reports. Is this fair, particularly as the Red Heart polypill study is in active recruitment for participants (www.guardian.co.uk/society/sarah-boseley-global-health/2010/may/17/heart-attack-stroke-prevention)? Is the polypill overselling its virtues? It is unrealistic and unreasonable to suppose that every reader of headlines shall wish to obtain clear statistical information. Over the past decade a persistent call has been made for patients and citizens to be presented with fair information about health choices: providing only relative risk is almost meaningless. Scientists have not finished the job until they have communicated their findings clearly. Organisations like the Wellcome Trust have done a great deal to focus and improve on science communication, but without using fair statistics into their own press releases, it can only be concluded that we have a long way to go.

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