Cholesterol lowering diet for pregnant women may help prevent preterm birth

Research question What are the effects of a cholesterol lowering diet on healthy pregnant women and their babies?

Answer A diet low in saturated fat and cholesterol improves serum lipid profiles in pregnant women but not in their babies. It may also reduce the risk of a preterm delivery.

Why did the authors do the study? People living Western lifestyles are often told to eat a healthier diet, including less saturated fat and more fish, pulses, fruit, and vegetables. These authors wanted to find out the effects of this healthier diet on pregnant women, since pregnancy induces the kind of changes to serum lipids that are usually associated with atherogenesis. They also wanted to know if an antiatherogenic diet could improve the outcome of pregnancy for healthy women.

What did they do? Two hundred and ninety healthy pregnant women from Norway took part in a randomised controlled trial comparing a normal Norwegian diet with a cholesterol lowering diet containing less saturated fat (<8% of total energy) and cholesterol (≤ 150 mg/day) but more pulses, whole grains, fruit, vegetables, and fish. The women, who were all non-smokers with low risk singleton pregnancies and a mean body mass index of 24, started their assigned diet at 17-20 weeks' gestation and continued with it until delivery. The authors measured the women's serum lipid concentrations four times during the study and recorded the outcome of all pregnancies from hospital notes. They measured serum lipid concentrations in cord blood and in the newborn infants at 4 days old. The study was single blind (investigators). All 290 women contributed data to an intention to treat analysis comparing serum lipid profiles and pregnancy outcomes between the two groups.

What did they find? Women eating the healthier diet had slightly but significantly more favourable serum lipid profiles in late pregnancy than women eating the control diet (at 36 weeks, total cholesterol 6.65 mmol/l v 6.70 mmol/l, low density lipoprotein cholesterol 3.83 mmol/l v 3.93 mmol/l; $P < 0.01$ for both comparisons). The diet had no effect on infants' birth weights or their serum lipid profiles, but it did seem to reduce the risk of preterm delivery. Only 1/141 (0.7%) women eating the modified diet delivered before 37 weeks' gestation, compared with 11/149 (7.4%) women eating the control diet (relative risk 0.10, 95% CI 0.01 to 0.77). Gestational age at delivery was increased by 4 days on average among women on the healthy diet.

What does it mean? These authors have shown that it's possible to modify cardiovascular risk factors in pregnant women by improving their diet. The benefits were modest, but the diet did no discernible harm. The impact of the diet on preterm delivery was more dramatic, and the authors cannot easily explain it. We still don't know, for example, whether it was the change in serum lipids or something specific in the diet that prolonged gestation in these women. Both are plausible. If these findings are confirmed, they could have important implications for pregnant women and the health professionals looking after them. Preterm delivery is a leading cause of neonatal complications and death.

Khoury et al. Effect of a cholesterol-lowering diet on maternal, cord, and neonatal lipids, and pregnancy outcome: a randomized clinical trial. *American Journal of Obstetrics and Gynecology* 2005;193:1292-301

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Editor's choice

Nervous laughter

"'Tsunami not our problem,' say top docs." So ran the spoof headline at our strategy day last week. David Tovey, head of the *BMJ's Clinical Evidence*, was drawing his vision of a worst case tabloid future for the *BMJ*. (Other headlines on his flipchart masterpiece were "Name that rash and win an iPod," and "Cox 6 inhibitors work for everyone.")

We were laughing at the time, if somewhat nervously, but the tsunami-rejecting, insular view within medicine is real (we have heard it from readers at focus groups). It is also to some extent understandable. After all, what can we as individuals do about natural disasters in far off places? Even those who are there to help, like Richard Villar writing in this week's journal, express feelings of hopelessness (p 1151). So what's the point of reading about healthcare challenges in developing countries? How does it help us practise better medicine and lead better lives?

Our answer is that medicine cannot be practised in isolation. As the world becomes smaller, health care around the world has more, not less, in common. All healthcare systems struggle with the challenges of limited resources and growing demand. As well as providing clinically practical information (this week Caroline Mitchell and colleagues present a comprehensive review of the diagnosis and management of shoulder pain (p 1124)), we think the *BMJ* has a role in presenting an international perspective on health care.

So we are proud this week to publish an important group of articles about health in the developing world. The authors—David Evans, Tessa Tan-Torres Edejer, and colleagues at WHO—use a uniquely systematic approach to examine the cost effectiveness of strategies to achieve the millennium development goals. All eight articles are published online this week and the first three appear in this week's journal (pp 1197, 1133, 1137).

Of course, doctors in the UK have their own problems closer to home. The NHS is going through what Nick Timmins, in the first of two articles published this week, calls "the biggest revolution in the way its services are delivered since its foundation in 1948" (p 1141). His lucid account of how private health care has developed within the NHS launches a series of articles on the NHS revolution and health care in the market place.

The *BMJ's* terrible tabloid future was not the only worst case scenario drawn at our strategy day. The other, from deputy editor Tony Delamothe, was a picture of an ivory tower muffled from external intrusion by thick shrubs, behind the comfortable walls of which the *BMJ's* editors sit and occasionally lob packages of stuff to whoever might be passing. The tag line was "From complacency to irrelevance." Fear is a terrific motivator. We came out of the meeting inspired with new purpose and a plan of action. We'll tell you all about it soon.

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