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Gestational diabetes: what is the relevance of the glucose challenge test?

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TO THE EDITOR: The recent letter by McElduff and Hitchman¹ has some very practical implications. They were able to show that pregnant women having a glucose challenge test (GCT) in the afternoon were nearly twice as likely to have a positive result as women tested in the morning, so that more women tested in the afternoon were diagnosed with gestational diabetes mellitus (GDM). If the function of the GCT is to aid in the diagnosis of GDM, then either all women should be tested in the afternoon or the glucose "cut-point" for the morning test should be reduced.

But does the GCT now have any relevance? In the United States, where testing for GDM often still involves a three-hour glucose tolerance test (GTT) using a 100 g glucose load and four blood samples, the GCT was introduced to reduce the number of women who had to have this long and, because of the higher dose of glucose, relatively unpleasant procedure. In Australia, where a two-hour, 75 g GTT is used (requiring two blood samples), it is not as important to offer a simpler initial test.

With the use of an initial GCT, about a quarter of women will need to have a GTT for confirmation, and the definitive diagnosis of GDM will be delayed. Further, the GCT is not specific and some women who may have GDM will not have a GTT. In addition, there will inevitably be some women who are GCT-positive, some of whom will have GDM, who do not return for the definitive GTT.

Thus, while a GCT may be convenient for a busy hospital clinic with space

limitations, it may not necessarily be in the best interests of the patient. Whether a GCT is ultimately helpful or possibly a hindrance requires further evaluation.

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Mortality from prostate cancer is decreasing

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TO THE EDITOR: We conducted a joinpoint analysis of death certificate data on prostate cancer from the Australian Bureau of Statistics. Between 1979 and 1994, mortality rates increased by 2.1% per year (95% CI, 1.6% to 2.5%). However, between 1994 and 1999, mortality decreased by 4.2% per year (95% CI, -5.8% to -2.4%). The total decrease in mortality rates for the five years to 1999 (the most recent year for which data were available) was 22.6% (95% CI, -32.9% to -12.7%).

Joinpoint analysis is a statistical method that measures changing trends over time. It chooses the best-fitting points (called joinpoints) at which the rate of increase or decrease changes significantly.¹ We did not look at the data and then choose 1994 as the start of the decreasing trend in prostate cancer mortality. The significant decrease since 1994 (and the consistent increase between 1979 and 1994) were identified by the joinpoint analysis.

Whether early diagnosis and treatment of prostate cancer subsequent to screening with prostate-specific antigen (PSA) tests can save lives is still an open question that is best answered by randomised-controlled, long term trials. Nevertheless, it is important that we try to understand the recent decrease in population-based mortality. The mortality decline started in 1995, about five years after PSA testing became widely available in Australia. The use of PSA testing increased dramatically, reaching a peak in most States in 1994 and 1995.² In 1996, the Australian Health Technology Advisory Committee reviewed the evidence and recommended against screening.³ Since then, the number of PSA tests has decreased.²

Recent mortality declines have also been observed in the United States and the United Kingdom following increases in the use of PSA testing. The mortality decline in the US has been greater than that in the

UK, coinciding with more PSA testing in the US than the UK.⁴

At least three questions arise from these observations:

- Is it plausible that the decrease could be due to some factor other than PSA testing, such as better treatment?
- How do we explain these results to men who want to make an informed choice about whether to be tested?
- Is this type of evidence strong enough to warrant a change in the current recommendations on PSA testing?

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COMMENT: Using jointpoint analysis, Coory and Bade have identified a significant trend towards lower mortality rates from prostate cancer since 1994, and relate this chronologically to the increased use of prostate-specific antigen (PSA) testing in Australia. The authors raise three reasonable questions regarding this finding:

Is it plausible that the decrease could be due to some factor other than PSA testing, such as better treatment? Ecological data such as those presented by Coory and Baade are subject to the pitfalls of ecological fallacy and confounding.¹ Ecological fallacy exists when there is an apparent association (eg, more men in the population screened, fewer men in the population dying), but there is no association at an individual level. Confounding would occur when there are other factors that account for the outcome, or distort the relationship between PSA testing and mortality. Treatment is one such factor, but changes in diet and other factors could also play a role (eg, lycopene from tomato-based foods²).

How do we explain these results to men who want to make an informed choice about whether to be tested? If these data were presented to men, then it would have to be explained that the data

do not provide evidence of the benefits of screening and that many other factors could explain the relationship. Further, men need to be informed of the risks of false negative and false positive results associated with screening, and the risks of complications associated with treatment. It is important to assist men to make a balanced decision. Interestingly, studies in which men have been involved in such informed decisions show that information can reduce the probability that men will choose to be screened.^{3,4}

Is this type of evidence strong enough to warrant a change in the current recommendations on PSA testing? Ecological associations generate hypotheses that are worthy of further investigation. Randomised controlled trial evidence at best, or case-control studies at least, would be required to provide evidence of the benefit of screening using PSA. Some such studies are currently in progress, including the prostate, lung, colorectal and ovarian cancer screening trial of the National Cancer Institute,⁵ and the European Screening Study for prostate cancer.⁶

Those in favour of PSA testing argue that it is the only means of diagnosing prostate cancer at an early and potentially curable stage.⁷ Against this is the argument that many prostate cancers are not clinically significant, as they are slow growing and will not spread, and there is a danger of diagnosis and treatment adding substantially to men's psychological and physical morbidity without benefits in terms of survival or quality of life.⁸ In the absence of evidence from randomised controlled trials or case-control studies, screening for prostate cancer using PSA testing remains controversial.⁹

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