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Women, coronary artery disease and diabetes

Diabetes is now recognised as a ‘coronary equivalent’. However, both the diabetes community and health professionals may not recognise that the presence of diabetes equalises the risk of men and women for coronary artery disease. This article reviews the impact of coronary artery disease for women with diabetes and identifies the importance of early and active intervention.

■ **What do you think women over the age of 50 years are more concerned about: breast cancer or heart attack? Would they think that having diabetes makes either more likely?**

In supermarket surveys women aged 50–60 years were more concerned about breast cancer.¹ After all, most people don’t think women suffer heart attacks until they are over 50 years of age.

However, the ‘big C’ for women is not cancer; it is coronary artery disease (CAD). One in 10 women will get breast cancer during their lifetime and one in 30 will die from it. Coronary artery disease kills one in three women and has more impact on mortality in women than the combination of all cancers.¹

On a positive note, over the past 20 years age adjusted coronary mortality has decreased. In patients without diabetes, coronary mortality decreased in a cohort followed from the 1980s to the 1990s compared to a cohort followed from the 1970s to the 1980s. However, mortality decreased by a lesser absolute amount in women than in men.² For men with diabetes, coronary mortality decreased, although less than in men without diabetes. But for women with diabetes, mortality increased (*Figure 1*).²

The American Heart Association made CAD in women its priority issue for 5 years (2004–2008).³ In Australia, the National Heart Foundation has adopted the campaign marketed with the image of a red dress: ‘It doesn’t matter what women wear – heart disease is, or will be, an issue for them’.⁴

The ‘big D’

The ‘big D’ is diabetes. One in 30 women die from breast cancer, one in three die of CAD, but two out of three women with diabetes die of CAD.⁵

Women without diabetes and no coronary history have one-fifth the risk of dying from CAD compared to men. A prior coronary event reduces this advantage to one-third (*Figure 2*). Diabetes dramatically increases the risk for both men and women, with the risk increasing in women more than in men, effectively eliminating the risk advantage of women (*Figure 2*).^{5,6}

Figure 1. CAD, diabetes and women (1970s vs. 1980s)

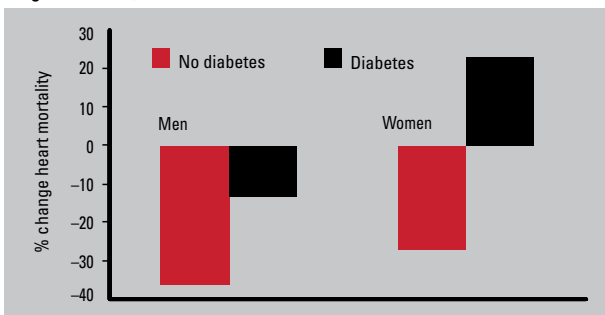
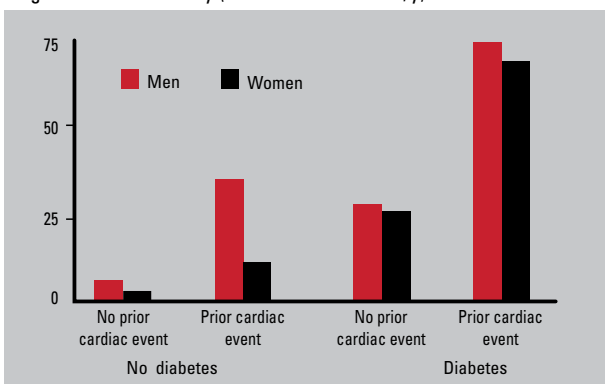


Figure 2. CAD mortality (men vs. women 1000/y)



If you are concerned about CAD in men with diabetes in your practice (and you should be) you should be just as worried about the women (and you may not be).

Diabetes in women travels in bad company

Diabetes is said to travel in bad company – hypertension, dyslipidaemia, prothrombosis – and this applies particularly to women. Diabetes increases coronary risk for both men and women but diabetes increases the absolute rate of coronary events in women by more than in men. The reason for this is not clear, and may relate to biological differences, differences in treatment, or both.⁶

Diabetes has a gender specific effect on coronary risk factors. Compared to men without diabetes, women without diabetes have lower levels of three of the four coronary risk factors: hyperglycaemia, hypertension and smoking (*Figure 3*).⁷ But compared to men with diabetes, women with diabetes have higher levels of three of the four coronary risk factors: hyperglycaemia, hypertension and dyslipidaemia (*Figure 3*).⁷ Higher rates of coronary risk factors partly explains why women with diabetes have virtually equivalent rates of coronary mortality as men with diabetes. However, the effect of diabetes on coronary risk in women is more than that associated with traditional risk factors. Diabetes virtually wipes out the coronary protection that women usually have compared to men.

Recent studies (mostly in men but probably applicable to women) have shown that coronary events and deaths will be reduced in high risk patients with diabetes by multifactorial interventions.⁸

Women have more risk factors and more untreated risk factors so there is an opportunity to intervene and reduce coronary events.

Cutting the big D down to size

In a general practice of 1000 adults there would be 20 women with known diabetes.⁹ Assuming coronary mortality is the same as in Finland (*Figure 1*)⁵ and that none of the women has had a coronary event, five of the 20 women will die from CAD over the next 10 years.

If you intervene earlier (now) and actively, and patients take your advice, and the results of the trials apply to them, the rates of cardiovascular events could be cut dramatically. Successfully applying the results of recent trials⁹ and using the evidence based medication

schedule (metformin, angiotensin converting enzyme inhibitor [ACEI], statin and aspirin, the so called 'type 2 tablet')¹⁰ could theoretically cut the 5 year risk of coronary mortality by 80% – from one in four to one in 20.¹⁰

Treat women with the 'type 2 tablet' and one will die of CAD in the next 10 years. Don't treat them, and five will die (number needed to treat: 5 women for 10 years).

Summary of important points

- For women aged over 50 years with diabetes, CAD should be number one on the health agenda.
- For doctors treating women aged over 50 years with diabetes, CAD and the 'type 2 tablet' should be number one and number two on the treatment agenda.
- Early active intervention in women with diabetes has the potential to dramatically lower coronary mortality.

Conflict of interest: none declared.

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Figure 3. Diabetes, gender and coronary risk factors

