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Gender Matters in Cardiology



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Meet pioneering gynaecardiologist Angela Maas, who explains why there's still a lot to do when it comes to cardiovascular disease in women.

Cardiovascular disease in women is an enduring passion for cardiologist Angela Maas, who has been a pioneer in Europe in this field. Prof. Maas started an outpatient cardiology clinic for women in 2003 and founded the Heart for Women Research Fund in 2014. She is co-founder of the gender working group of the Dutch society of cardiology. She has written and researched widely on cardiovascular disease in women, and is co-editor of the Manual of Gynecardiology: female-specific cardiology, published by Springer in 2017.

What are the most important female-specific risk factors for cardiovascular disease?

Specific risk factors only present in women relate to hormonal status and pregnancy: pre-eclampsia and hypertensive pregnancy disorders. Pre-eclampsia has been incorporated in the European Society of Cardiology cardiovascular prevention guidelines (Piepoli et al. 2016), but still many cardiologists and primary care physicians never ask about it and they neglect this important risk factor, which leads to hypertension at a young age.

You have written that the heart may be considered 'the victim of success' of modern breast cancer therapy (Maas et al. 2016). Please explain.

Due to good oncology therapy, the breast cancer mortality rate has declined enormously over the past 20-25 years. Around 4% of women who get breast cancer will die of it. However, due to modern chemotherapy such as trastuzumab the damage done to the myocardium and the vessels is increasing. There are many women who after ten years of breast cancer therapy get severe heart failure and may even die of it. We successfully treat the breast cancer, but we get more cardiovascular disease —heart failure and hypertension.

Doctors focus on breast cancer recurrence risk and forget about the rise in cardiovascular risk that occurs with ageing and the potential damage from cancer therapies. After breast cancer therapy many women complain of tiredness and fatigue, which may be caused by hypertension for instance, but doctors think it is due to previous breast cancer.

For women diagnosed with breast cancer, how can oncologists and cardiologists work together to protect the heart?

At the moment it is quite difficult. I have talked about this with national and international colleagues, and one important factor is the difference in culture of the different specialisms. We are not used to working together in this way. Oncologists are very focused on curing cancer and avoiding recurrence, and cardiologists are looking at other issues. Oncologists are also a bit afraid that cardiologists may disturb their treatments. We

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have to identify earlier which women are at higher risk of getting damage from breast cancer therapy. These are elderly women who perhaps have a history of cardiovascular disease and the women who get very severe oncology treatment. We should fine-tune our efforts for individual patients, and see to what extent it is necessary to work together more for each individual patient, and provide more specific and tailored therapy for the individual woman.

What are the best imaging tools to evaluate the heart in breast cancer patients?

In cardiology we have developed more advanced imaging techniques over the past few years. In echo we now have strain techniques, which are more timeconsuming but better able to identify early damage of the heart. Magnetic resonance imaging (MRI) also takes more time, but if you can differentiate and send highrisk women for an MRI, you may see the first signs of cardiovascular damage and start treatment earlier than we do nowadays. With better echo and MRI techniques we can see early signs of damage. We need to use these techniques for the women who are at highest risk.

Are women perhaps more aware of risk factors for breast cancer than they are about cardiovascular disease risk factors?

They are. Most women will say breast cancer is their greatest risk, but it's cardiovascular disease. It is so important, and it's sometimes difficult to get women motivated to take pills for high blood pressure for example, because they say to themselves that it's stress, they were too busy, it will pass. It is difficult to convince women that they need to be treated.

You recommend a multidisciplinary and lifecourse approach to cardiovascular disease risk assessment in women (Maas and Leiner 2016). What is the ideal?

In healthcare, we are used to looking in a sort of vertical way; every specialist looks inside their discipline. But the life course of a person may have consequences for the future. For instance, if women have suffered from migraines at a young age they will be at high risk of having hypertensive pregnancy disorder, then subsequently at higher risk to have microvascular coronary disease or premature hypertension when they are in their fifties. Health events that happen in the past need to be taken into account when we consider an individual patient and we forget that. To optimise patient care we should look more at the whole picture of the individual.

Is there enough research into gender differences in cardiovascular medicine?

I think gender differences are important. It is something we need to look at more, because we have to differentiate in our guidelines. For example, for atrial

fibrillation, we have different advice for men and women, and women have anticoagulant therapy at an earlier stage. There are still many guidelines that do not apply the gender differences we have already identified. For instance, there are very different types of acute coronary syndromes in women compared to men, but women are still considered by diagnostic and treatment standards for males. For example, one type of acute coronary syndrome we see very often in young women is coronary artery dissection, especially when women are in their 40s and 50s; we see it more and more related to stress. Men and women act differently on stress factors, so there are so many aspects of risk and manifestations of underlying disease that we need to fine tune in our guidelines and clinical practice.

There is so much knowledge already but we just don't use it. To address this knowledge gap, just published is Manual of Gynecardiology, which I co-edited with U.S. cardiologist, C. Noel Bairey Merz (Maas and Bairey Merz 2017). It includes contributions from the editors and from outstanding colleagues from Europe. It is a handbook with patient cases aimed at tackling the issues of gender difference in clinical practice. For example, if you have a woman with symptoms of angina for instance, they have the diagnostic workups along the male standard, which doesn't fit. It didn't fit 35 years ago when I started, but we still behave like that. This is a waste of money, and I see so many women for second opinions, who have been treated badly because there is lack of knowledge in current cardiology.

Not all women are the same, not all men are the same, so we should stop comparing apples and pears, but have a look at who is the high-risk patient—the man, the woman or the age group. This century is more for personalised medicine, but we don't use it very well.

You started an outpatient cardiology practice for women in 2003. Why did you start this? What were the challenges?

I was motivated to do it when I attended the first world conference on heart disease in women in Victoria, Canada in 2000. It was fascinating to meet so many people from Canada and the United States, who were already involved in female heart centres, and I wanted to start this in the Netherlands. At the time I worked in a large cardiology practice, where I was the only woman with 15 male colleagues. I decided to start an outpatient clinic for women to get a better look at high- and low-risk women and to learn more. The cardiologists and primary care physicians said it was a crazy idea and would stop in a year's time and be a disaster. I received hate letters and phone calls. There were a lot of forces against

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doing this, but I have quite a strong character and after a few years it went very well. As a result I was appointed Professor of Women's Cardiac Health in 2012. It was very unpleasant in the beginning— this is the fate of people who are a pioneer in any specialism. But in the end you are rewarded and in April I was awarded Officer in the Order of Orange Nassau in the Dutch royal honours.

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