

RESEARCH DIRECTIONS

Gender and Heart Disease

Dr Joanne Lind from the School of Medicine is exploring how sex hormones and gender affect heart disease progression and symptoms through a National Health and Medical Research Council (NHMRC) Biomedical (Peter Doherty) Fellowship.

Women differ from men in the presentation, progression and outcomes of heart disease, however, many individuals are still unaware that heart disease is the leading cause of death in females. In Australia, three times more women died in 2005 from cardiovascular disease compared with breast cancer. Both women and men are at risk of death from ischemic heart disease and stroke with increasing blood pressure. 'A gender difference is evident in blood pressure recordings' says Dr Lind 'with women having lower blood pressures compared to men during early adulthood, but the prevalence of high blood pressure in females exceeds that of men in older adults.' Limited work has been performed with regard to the impact of sex hormones on the development of high blood pressure. This study will examine underlying genetic variation within sex hormone receptors and how they may contribute to differences in blood pressure.

Using a range of clinical assay techniques, DNA analysis and heart-disease measurement tests, Dr Lind will analyse the severity of heart disease and the levels and different types of sex hormones in study participants. These studies will identify if symptoms and effects of hypertension (high blood pressure) are associated with genetic variation within sex hormone receptors, and whether the effect is gender-specific. Measurements of the levels and mix of sex hormones in different individuals will also be taken and statistically analysed to determine



if the severity of disease can be explained, in part, by variation in sex hormone levels.

This project will lead to an enhanced understanding of the role of sex hormones and genetic variation in the development and progression of hypertension, and will lay the groundwork for significant improvements in the treatment of many cardiovascular diseases. Any genetic variant found to be associated with disease severity could be further studied to improve our understanding of the role played by sex hormones and their receptors in the triggers and underlying causes of hypertension.

Project Title: The modifying effect of gender in hypertension

Funding has been set at: \$274,000

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March 2008