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Women have lower blood pressure and are protected against cardiovascular disease compared to men of similar age. However, after menopause a woman's risk of developing hypertension increases greatly, and more women than men have hypertension after age 65. There is strong evidence that this sex difference in the development of hypertension is associated with differences in one of the key hormonal systems that controls our blood pressure, the renin-angiotensin system (RAS). Understanding the mechanisms that protected women may lead to the identification of new therapeutic targets for cardiovascular and renal disease.

Research Projects

1. **Whether it is possible to restore or enhance the depressor RAS pathways in aged males and females using drugs that target this system**
2. **Whether these pathways play a role in the normal decrease in blood pressure observed during pregnancy**
3. **Whether the pregnancy hormone relaxin contributes to these protective pathways. Results from these studies may lead to the identification of new strategies that reduce the risk of developing hypertension and associated disease**

Selected significant publications:

1. Lankadeva YR, Singh RR, Moritz KM, Parkington HC, *__Denton KM__, *Tare M. 2015. Renal dysfunction is associated with a reduced contribution of nitric oxide and enhanced vasoconstriction following a congenital renal mass reduction in sheep. *Circulation* 131:280-8.
   * Equal Authorship
2. Mirabito KM, Hilliard LM, Wei Z, Tikellis C, Widdop RE, Vinh A, **Denton KM**. 2014. Role of inflammation and the Angiotensin type 2 receptor in the regulation of arterial pressure during pregnancy in mice. *Hypertens*. 64:626-31.
3. Mirabito KM, Hilliard LM, Kett MM, Brown RD, Booth SC, Widdop RE, Moritz KM, Evans RG, **Denton KM**. 2014. Sex- and age-related differences in the chronic pressure-natriuresis relationship: role of the angiotensin type 2 receptor. Am J *Physiol Renal Physiol*. 307:F901-7
4. Hilliard LM, Jones, ES, Stekelings UM, Unger T, Widdop RE, **Denton KM**. 2012. Sex-specific influence of angiotensin type 2 receptor stimulation on renal function: a novel therapeutic target for hypertension. *Hypertens*. 59(2):409-14
5. Hilliard LM, Nematbaksh M, Kett MM, Teichman E, Sampson AK, Widdop RE, Evans RG, **Denton KM**. 2011. Gender differences in pressure-natriuresis and renal autoregulation: role of the AT2R. *Hypertens*. 57:275-82.