

Genetic variant linked with kidney failure in diabetic women but not men

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A genetic variant on chromosome 2 is strongly linked with kidney failure in diabetic women but not in men, according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology (JASN)*. The findings may help explain gender-specific differences in kidney failure, as well as why some diabetic women are prone to develop kidney failure.

Worldwide, more than 370 million people have diabetes, which is the leading cause of kidney failure, or end stage [renal disease](#). Within the non-diabetic population, women are relatively protected from kidney failure until menopause, but this protection is reduced in diabetic women.

Niina Sandholm, MSc, Per-Henrik Groop, MD, DMSc (Helsinki University Central Hospital and Folkhälsan Research Center, in Finland) and their colleagues designed a study to detect genetic variants that might predispose diabetic women to kidney failure. Their initial study included 3652 Finnish patients with [type 1 diabetes](#).

The researchers identified a genetic variant on chromosome 2 that was linked with kidney failure in women with type 1 diabetes but not in men. Additional analyses revealed that it was also linked with kidney failure in diabetic women in the United Kingdom, the United States, and Italy. Diabetic women with the risk variant had a nearly two-fold increased risk of developing kidney failure compared with diabetic women who did not have the risk variant.

"This study reports the first genetic variant robustly associated with end stage renal disease in diabetic women but not in men. This finding may give valuable information on how some diabetic women lose their protection against end stage renal disease," said Sandholm. The genetic variant is located close to a gene for a factor that interacts with the [estrogen receptor](#) and also helps regulate [kidney function](#). It will be interesting to see if this

factor plays a role in the gender-specific protection against kidney failure seen in this study.

In an accompanying editorial, Marcus Pezzolesi, PhD and Andrzej Krolewski, MD, PhD (Joslin Diabetes Center) noted that "In identifying evidence of an association with end stage renal disease exclusively in women, this study offers the strongest evidence to date of a sex-specific genetic factor for diabetic nephropathy." They added, however, that the findings need to be verified by additional studies.

More information: The article, entitled "Chromosome 2q31.1 Associates with ESRD in Women with Type 1 Diabetes," will appear online on September 12, 2013, [DOI: 10.1681/ASN.2012111122](#)

The editorial, entitled "Diabetic Nephropathy: Is ESRD Its Only Heritable Phenotype?" will appear online on September 12, 2013, [DOI: 10.1681/ASN.2013070769](#)

Provided by American Society of Nephrology

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