Within the nondiabetic population, women are relatively protected from kidney failure until menopause, but this protection is reduced in diabetic women. A new study published in the *Journal of the American Society of Nephrology* now helps explain gender-specific differences in kidney failure, as well as why some diabetic women are prone to develop it.

“More than 371 million people have diabetes worldwide, and diabetes is the leading cause of end stage renal disease that requires dialysis or kidney transplant for patient survival,” said first author Niina Sandholm, MSc, of Helsinki University Central Hospital and Folkhälsan Research Center, in Finland. “As gender differences exist in the development of kidney disease, our aim was to detect genetic variants that predispose diabetic patients to end stage renal disease in a gender-specific manner,” she explained.

**Genetic clues revealed**

Despite evidence that sex influences the risk of kidney failure in patients with type 1 diabetes, no large-scale sex-specific genetic studies had been reported until now. Sandholm, along with senior author Per-Henrik Groop, MD, DMSc, and their colleagues, conducted a genome-wide association study in a cohort of 3652 patients with type 1 diabetes who participated in the Finnish Diabetic Nephropathy (FinnDiane) Study. The FinnDiane discovery cohort included 258 women and 387 men with kidney failure. These patients were compared with those without signs of diabetic nephropathy.

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**CKD Prevalence Varies Widely Across European Countries; Dialysis Prevalence Skyrocketing Worldwide**

By Tracy Hampton

The prevalence of stage 3 to 5 chronic kidney disease (CKD) in some elderly populations in Europe is well above 20%, according to new research. In addition, the prevalence of dialysis therapy for kidney failure is increasing much faster than population growth in most parts of the world.

The findings come from two separate studies presented at ASN Kidney Week 2013, which was held in Atlanta in November. The European CKD Burden Consortium used standardized definitions to determine the prevalence of CKD across Europe. Katharina Brueck, MD, Vianda Stel, PhD, and Kitty Jager, MD, PhD, of the ERA-EDTA Registry in the Netherlands, initiated the analysis with a literature review to identify relevant population-based studies that could provide data on CKD prevalence. The team has received data on prevalence from 19 studies originating from 13 countries. The crude prevalence of stages 1 to 5 CKD in individuals aged 20 years and older ranged from 4.4% in the Netherlands to 31.1% in northeast Germany. The crude stage 3 to 5 CKD prevalence for this age group ranged from 1.1% in the Netherlands to 9.9% in northeast Germany.

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CKD Prevalence

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In adults aged 65 to 74 years, the age and sex standardized prevalence of stage 3 to 5 CKD ranged from 4.1% in Switzerland to 25.4% in northeast Germany.

“This is the first study on international differences in the prevalence of CKD across European countries using standardized definitions based on the same GFR estimating formula, and with adjustment for general population demographics,” Steh said. “Future studies should focus on the explanation for this diversity in CKD prevalence in Europe.”

Another team that presented research at ASN Kidney Week 2013 looked at the trajectory of treated end stage renal disease (ESRD) rates at the global and regional level between 1990 and 2010. The effort was led by Bernadette Thomas, MD, of the University of Washington, in Seattle.

“Maintenance dialysis is an expensive form of life support,” Thomas said. “Understanding the prevalence of maintenance dialysis throughout the world, and how these rates have grown within the past two decades is important information for countries to plan how to maintain providing this treatment to a rapidly growing ESRD population.”

Thomas also noted that identifying regions of the world that are unable to provide maintenance dialysis treatment will indicate where greater efforts are needed to identify and treat ESRD patients.

She and her colleagues examined data from the Global Burden of Disease database, the largest existing database for global causes of illness and death. They also analyzed data from national and regional ESRD registries and performed a literature review of studies from 1990 and 2010. Data from 23 countries providing 100% dialysis access and 138 countries providing partial dialysis access were included, while data from 26 countries that lack routine access to dialysis were excluded.

The investigators found that worldwide, there has been a 165% increase in dialysis treatments for ESRD over the past two decades—a rate that has far outpaced the rate of population growth in most regions of the world.

The global prevalence of ESRD treatment with dialysis for countries with universal dialysis access increased by 132% after adjusting for population growth and aging (145% in women versus 123% in men). For countries whose populations lack universal dialysis access, adjusted prevalence increased by 102% (116% for women versus 90% for men). Five world regions did not experience a substantial increase in dialysis prevalence: Oceania, South Asia, central sub-Saharan Africa, Eastern Europe, and tropical Latin America.

“The prevalence of maintenance dialysis is growing rapidly, both in countries with and without the ability to provide universal access,” Thomas said. “This speaks to increased disease activity. It will be difficult to continue to finance such a trajectory of growth without consequent development of transplant programs and aggressive screening and intervention programs for earlier stages of chronic kidney disease.”

ASN Kidney News accepts correspondence in response to published articles. Please submit all correspondence to kidneynews@ASN-online.org