Establishing the Incidence of CKD in Irish Adults

By Donal Sexton

Investigators at The Irish Longitudinal Study on Ageing (TILDA), School of Medicine, Trinity College Dublin, Ireland, have conducted a study to discover the incidence and prevalence of chronic kidney disease (CKD) in community-dwelling individuals aged 50 years or over in Ireland (1).

TILDA was established at Trinity College Dublin to assemble comprehensive health, social, and economic data from Irish adults aged 50 years or over at a national level. TILDA recruited a stratified clustered sample, representative of the community-living Irish population. A random sampling of geographical clusters was used to select households (RANSAM sampling framework), so that each residence in Ireland had an equal probability of selection. Data collection involved an in-home interview, a self-completion questionnaire (using the Computer-Assisted Personal Interview instrument), and a comprehensive health assessment undertaken in a health center or at the respondent’s home. The baseline (i.e., wave 1, 2009–2011) sample included 8175 adults, of whom subsequently, 5751 participants completed the health assessment at wave 1. All components of the above design were repeated at wave 3 (2014–2015). All of the participants provided informed signed consent. These data were linked with Irish census data from the Central Statistics Office from 2016. The Research Ethics Committee of Trinity College Dublin approved the study protocol.

Using the race-adjusted combination serum creatinine and serum cystatin C CKD Epidemiology Collaboration (CKD-EPI) estimated glomerular filtration rate (eGFR) equation, CKD was present in 11.7% of the Irish general population at wave 1 and rose to 15.6% of participants at wave 3. This 15.6% equates to approximately 225,937 people or 1 in 7 of the general population in the same age range. Using the race-neutral combination of the serum creatinine and serum cystatin C CKD-EPI eGFR equation resulted in slightly lower estimates of CKD at wave 3, at 13.29% (192,234 in the same-age population). Surprisingly, 98% of people in the community with CKD were unaware of it.

During the 13,851 person-years of follow-up, 218 individuals developed CKD stage 3 or higher using the race-adjusted cystatin-creatinine CKD-EPI combination equation eGFR threshold. Accordingly, 208 new CKD cases were estimated using the race-neutral GFR equation. The overall CKD incidence rate was 16 per 1000 person-years (95% confidence interval [CI], 13–18) using the race-adjusted eGFR equation. The incidence increased gradually with increasing age category from 5 per 1000 person-years in participants aged 50 to 59 years up to 87 per 1000 person-years in participants aged 80 years or older. Additionally, the incidence rates for CKD were 16 (95% CI, 13–19) per 1000 person-years in male and 15 (95% CI, 13–18) per 1000 person-years in female participants and were more than two times higher in those with prevalent comorbidities (i.e., self-reported diabetes or hypertension) (Figure).

Prevalent CKD became more common over time in Ireland, consistent with the country’s rapidly aging demographic profile. This highlights the importance of action in primary and secondary care to raise awareness and improve the outcomes for people living with CKD in Ireland is essential.

This was the largest CKD study performed in Ireland to date and provides unique data pertaining to trends in prevalence of CKD over time as well as the incidence of CKD with aging. The presence of CKD identifies individuals who are at increased risk of adverse health outcomes, including cardiovascular disease, premature death, and potentially progression to requiring dialysis or a kidney transplant. As such, preventing and managing CKD constitute a key public health priority. In Ireland, the incorporation of CKD into the primary care chronic disease management program may allow for improved treatment of CKD, particularly in light of the availability of contemporary treatments with proven benefits in reducing the progression of CKD, as well as adverse cardiovascular outcomes, including sodium-glucose cotransporter-2 inhibitors, glucagon-like peptide-1 analogues, and finerenone, in addition to blood pressure management and renin-angiotensin system antagonism.

Donal Sexton, MD, PhD, is a clinical associate professor with TILDA, School of Medicine, Trinity College Dublin, and a consultant nephrologist at St James’s Hospital Dublin, Ireland.

The author reports no conflicts of interest.

Reference


Figure. Chronic kidney disease in Ireland: Evidence from TILDA

www.tilda.ie

Chronic Kidney Disease in Ireland: Evidence from TILDA

About Chronic Kidney Disease

Chronic kidney disease (CKD) is linked to a considerably increased risk of cardiovascular disease and premature death. Many of those with CKD progress to kidney failure requiring dialysis or kidney transplantation. Over the past 10 years, the number of patients with kidney failure on dialysis increased by 3% each year, costing the state €1M a day or $1,069,700 in the United States.

Risk Factors

People with hypertension or diabetes are up to 3 times more likely to be diagnosed with CKD.

Early detection and treatment lead to better outcomes, including prevention of the need for dialysis.

Maintaining Kidney Health

Proper management of blood pressure and blood sugar levels can help keep kidneys healthy, in addition to maintaining a healthy weight.

Reprinted with permission from TILDA.