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## SEASONAL INFLUENZA PLAYS A ROLE IN THE DEATHS OF MANY KIDNEY FAILURE PATIENTS

*Influenza-linked illness is associated with more than 1,000 deaths of kidney failure patients each year in the United States.*

### Highlight

- Influenza-like illness was linked with seasonal variation in the death rates of US patients with kidney failure.

**Washington, DC (January 24, 2019)** — In patients with kidney failure, influenza-like illness (ILI) likely contributes to more than 1,000 deaths per year. The finding, which comes from a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology (JASN)*, points to the importance of protection against, surveillance of, and, where possible, treatment of such infections in patients with kidney dysfunction.

Mortality rates among patients with kidney failure, or end-stage renal disease (ESRD), are very high, with seasonal fluctuations. ILI—a syndrome comprising potentially serious respiratory tract infections caused by influenza and other viruses—disproportionately affects vulnerable populations such as patients with ESRD, and it is also seasonal, peaking during the colder months of the year.

The extent to which ILI contributes to mortality in patients with ESRD is unclear. To investigate, David Gilbertson, PhD (Hennepin Healthcare Research Institute and the University of Minnesota) and his colleagues analyzed data from the Centers for Disease Control and Prevention Outpatient ILI Surveillance Network and the Centers for Medicare & Medicaid Services ESRD database from 2000–2013.

The team calculated mortality trends in each quarter of the year, with the ILI season represented by the fourth quarter (Q4) of each year and the first quarter (Q1) of the following year.

A 1% absolute increase in Q4 ILI was associated with a 1.5% increase in Q4 mortality relative to the average in Q3 (the summer), and a 1% absolute increase in Q1 ILI was associated with a 2.0% increase in Q1 mortality relative to Q3. The average number of annual deaths potentially attributable to ILI was substantial: about 1,100 deaths per year.

“Generally speaking, during influenza/ILI seasons when influenza and ILI peaked early, more deaths occurred early, and when the illness peak was later, the peak in deaths was also later. Similarly, years when influenza and ILI were particularly bad were generally years when the number of deaths was also higher than expected,” said Dr. Gilbertson. “While ILI may not be the direct cause of death in ESRD patients, it may contribute to other causes of death; for example, patients with ILI may experience a state of acute inflammation, making them vulnerable to other infections or cardiovascular events.”

Dr. Gilbertson provided suggestions for protecting ESRD patients against ILI. “Strategies could include increased disinfection efforts in dialysis units in the winter months, and making sure all patients with kidney failure get the influenza vaccination each year,” he said.

Study co-authors include Kenneth J. Rothman, DrPH, Glenn M. Chertow, MD, MPH, Brian D. Bradbury, DSc, M. Alan Brookhart, PhD, Jiannong Liu, PhD, Wolfgang C. Winkelmayr, MD, ScD, Til Stürmer, MD, MPH, PhD, Keri L. Monda, PhD, Charles A. Herzog, MD, Akhtar Ashfaq, MD, Allan J. Collins, MD, and James B. Wetmore, MD, MS

Disclosures: Dr. Rothman is employed by Research Triangle Institute. Dr. Chertow has received a research grant and consulting fees from Amgen. Dr. Bradbury owns stock in and is employed by Amgen. Dr. Brookhart has received research grants from Amgen and AstraZeneca, has ownership or partnership in NoviSci, and has received consulting fees from AbbVie, Amgen, Merck, RxAnte, CERobs, Genentech, Outcomes Insight, and TargetPharma. Dr. Liu has received consulting fees from Fibrogen. Dr. Winkelmayr has received consulting fees from Akebia, Amgen, AstraZeneca, Bayer, Daichii-Sankyo, Fibrogen, Relpysa, Vifor FMC Renal Pharma, and ZS Pharma. Dr. Stürmer has received research grants (NIA: R01/R56 AG023178, AG056479); owns stock in Novartis, Roche, BASF, AstraZeneca, and Novo Nordisk; and is involved in the Center for Pharmacoepidemiology, whose current members are GlaxoSmithKline, UCB BioSciences, Merck, and Shire. Dr. Monda owns stock in and is employed by Amgen. Dr. Herzog has received a research grant from Amgen and consulting fees from AstraZeneca and Fibrogen. Dr. Collins has received consulting fees from Fibrogen and is employed by NxStage. Drs. Gilbertson, Ashfaq, and Wetmore declare no conflicts of interest.

The article, entitled “Excess Deaths Attributable to Influenza-Like Illness in the End-Stage Renal Disease Population,” will appear online at <http://jasn.asnjournals.org/> on January 24, 2019, doi: 10.1681/ASN.2018060581.

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