1105. Chronic Kidney Disease and Invasive Pneumococcal Disease in Adults

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Background. Despite widespread vaccination, *Streptococcus pneumoniae* (SPN) continues to cause invasive pneumococcal disease (IPD), particularly in the immunocompromised. Current recommendations in the United States target the immunocompromised for use of the 13-valent conjugate vaccine. We examined the impact of chronic kidney disease on the development of invasive pneumococcal disease (IPD).

Methods. Kaiser Permanente Northern California (KPNC) is an integrated health care plan serving approximately 3.3 million members. IPD cases (defined as cultured from a normally sterile body site) were identified from the KPNC Lab system from May 2005 - April 2013. We used diagnostic codes from the electronic medical record to identify chronic kidney disease (CKD) as CKD3 (Glomerular filtration rate [GFR] 30-59 ml/minute), CKD4 (GFR 15-29 ml/minute) and CKD5,6 (GFR <15 or on dialysis). We estimated rates of IPD in KPNC members with CKD and compared to rates of IPD in the general membership. We used KPNC registries to identify members with asthma, coronary artery disease (CAD), diabetes (DM), stroke, heart failure (HF), and HIV infection for the analysis. We ran a single multivariate poisson regression model to estimate the incidence of IPD, and included age, race and each condition as predictor variables.

Results. The unadjusted relative risk of IPD in members of all ages with CKD compared to the general membership was 4.1 for CKD3; 5.7 for CKD4; and 15.1 for CKD5,6. After controlling for multiple underlying factors in the multivariate analysis, CKD3 was associated with a 2.29 (95% CI 1.63-3.19) RR for IPD; and CKD 4,5 with a 7.10 RR (3.95-12.23) (preliminary analysis).

Conclusion. In adults, chronic kidney disease is strongly associated with an increased risk of IPD. This has important implications for recommendations on who should receive conjugated pneumococcal vaccines.

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