CHRONIC KIDNEY DISEASE. CLINICAL EPIDEMIOLOGY - 1

CHRONIC KIDNEY DISEASE PREVALENCE: VARIATION ACROSS THIRTEEN EUROPEAN COUNTRIES

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Introduction and Aims: Chronic kidney disease (CKD) prevalence estimation is central to CKD management and prevention planning at the population level. The purpose of our study was 1) to estimate the CKD prevalence in the European adult general-population and 2) to investigate international variation in CKD prevalence by age, sex, and presence of diabetes, hypertension, and obesity.

Methods: We collected data from 19 general-population studies from 13 European countries. CKD stage 1-5 was defined as estimated Glomerular Filtration Rate (eGFR) <60 ml/min/1.73m² or albuminuria >30mg/g and CKD stage 3-5 as eGFR < 60 ml/min/1.73m² as calculated by the CKD-EPI equation. CKD prevalence was age and sex standardized to the EU27 population.

Results: We found considerable differences in both CKD stage 1-5 and CKD stage 3-5 prevalence across European study populations. The adjusted prevalence of CKD stage 1-5 varied between 3.31% (95% CI 3.30-3.33) in Norway and 17.3% (95% CI 16.5-18.1) in Northeast Germany. The adjusted prevalence of CKD stage 3-5 varied between 1.0% (95% CI 0.7-1.3) in central Italy and 5.9% (95% CI 5.2-6.6) in Northeast Germany. The variation in CKD prevalence stratified by diabetic, hypertension, and obesity status followed the same pattern as the overall prevalence.

Conclusions: The substantial variation in CKD prevalence across Europe is likely due to true differences caused by regional variation in lifestyle, environmental factors and public health policies, as well as to heterogeneity in sample selections and laboratory methods. This study is a first step in monitoring the impact of strategies designed to reduce the burden of CKD in Europe, and thereby assisting the medical community and policy makers in the further development of these strategies. Moreover, our results highlight the importance of accurate creatinine and albuminuria measurement methods to reduce misclassification in clinical practice.