

INTERNAL MEDICINE RESIDENTS' KNOWLEDGE OF CHRONIC KIDNEY DISEASE COMPLICATIONS AND MANAGEMENT. A NATIONAL SURVEY

Varun Agrawal, Mohit Agarwal, Michael A. Barnes, Amit K. Ghosh,, Peter A. McCullough, William Beaumont Hospital, Royal Oak MI.

Identification and management of chronic kidney disease (CKD) complications is not well recognized among primary care physicians. Suboptimal management of CKD complications leads to increased morbidity and mortality. It is not known if current postgraduate training adequately prepares a future internist in this aspect of CKD management. We performed an online questionnaire survey of internal medicine residents in United States to determine knowledge of CKD complications and their management. 479 residents completed the survey with postgraduate year (PGY) distribution 166PGY1, 187PGY2 and 126PGY3. Most of the residents correctly recognized anemia (91%) and bone disease (82%) as complications at estimated glomerular filtration rate (eGFR) $<60\text{ml/min/1.73m}^2$, however only half of the residents identified coronary artery disease (54%) and fewer identified malnutrition (38%) as CKD complications. For a patient with $\text{eGFR} < 60\text{ml/min/1.73m}^2$, two-thirds of the residents would workup for anemia (62%); while half of the residents would check for mineral and bone disorder (56%). With regards to anemia of CKD, less than half knew the goal hemoglobin level of 11-12g/dl (44%); most would supplement iron stores (86%), while fewer would consider nephrology referral (28%). For mineral and bone disorder, many residents would recommend dietary phosphorus restriction (68%) and check 25hydroxy vitamin D (62%); fewer residents would start 1,25dihydroxyvitamin D (40%) or refer to the nephrologist (45%). Residents chose to discontinue angiotensin converting enzyme inhibitor for medication related complication of $>50\%$ decline in eGFR (68%) and potassium $>5.5\text{meq/l}$ (93%). Mean performance score improved with increasing PGY (PGY1 $59.4 \pm 17.6\%$, PGY2 $63.6 \pm 15.6\%$ and PGY3 $66.2 \pm 16.5\%$; $p=0.002$). Our study identified specific gaps in knowledge of CKD complications and management among internal medicine residents. Educational efforts, such as instruction on use of CKD clinical practice guidelines, may help raise awareness of CKD complications, benefits of early intervention and improve CKD management.