Critical Care Nephrology: an Appealing Subspecialty for Young Nephrologists

By Marco Fiorentino

Many exciting opportunities and subspecialties have emerged within the field of nephrology. Among these, critical care nephrology has become an important specialty in both clinical and research settings. Acute kidney injury (AKI) is an increasingly recognized adverse outcome among critically ill patients, and its impact is both devastating and often underestimated (1).

Several critical care nephrology programs have been created in recent years to provide clinical care, research, and educational programs to interested trainees. The Center for Critical Care Nephrology in Pittsburgh is an example of the growing interest in promoting a multidisciplinary model of basic, translational, and clinical research to prevent and cure AKI in critically ill patients. However, the role of the nephrologist in the intensive care unit (ICU) is still an area of debate, as opinions regarding whether a nephrologist should be consulted vary widely across different institutions (2).

Both the prompt identification of high-risk patients as well as the correct management of AKI require a strong collaboration between critical care physicians and nephrologists. AKI is a multifactorial syndrome with a wide range of prevalence, pathophysiology, and different therapeutic approaches in the ICU, and nephrologists must have adequate intensive care training to ensure high-quality and efficient care of these patients. Complicated electrolyte and acid-base disorders are common in the ICU and require a robust knowledge of renal physiology. As such, the nephrologist needs to be an early and active participant in guiding and assisting critical care teams in the interpretation of data.

Furthermore, the nephrologist must play an active role in implementing strategies to minimize the risk of severe complications. He or she may assist with avoiding potentially harmful interventions such as the use of nephrotoxic medications, contrast exposure, and with over- or under-diuresis. In addition, the nephrologist can ensure early and appropriate implementation of certain treatment strategies. Early nephrology engagement is crucial when renal replacement therapy (RRT) is required, not only with regard to improving outcomes (6, 7). In addition, much is still unknown about the pathogenesis of AKI (e.g., septic-AKI vs. non-septic AKI) and the non-pharmacological management of AKI (e.g., preferred type and amount of fluid for resuscitation).

Research collaboration between intensivists and nephrologists will be critical in improving outcomes in AKI patients. Many exciting educational opportunities for fellows and young nephrologists are available in critical care nephrology (Table 1). Several multidisciplinary training programs and courses on topics such as AKI and continuous RRT are available around the world. Attending these courses could not only improve AKI knowledge and increase awareness of critical care nephrology, but it could also help foster interest in the field for future nephrology trainees.

Critical care nephrology is an emerging and challenging area in our field that deserves our continued attention. The area in our field that deserves our continued attention. The growing interest in promoting a multidisciplinary model of basic, translational, and clinical research to prevent and cure AKI in critically ill patients is an important specialty in both clinical and research settings.