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Anticipating acute kidney injury diagnosis using simple and easily assessed blood and urine biochemical parameters

Early diagnosis of acute kidney injury (AKI) is a major challenge and a great area of research, particularly in critically ill patients. However, serum creatinine (sCr) and urine output (UO) remain so far the only two widely accepted and available parameters for AKI diagnosis, although they are clearly late markers of renal damage. Tubular damage markers have gained a lot of attention but none of them are widely available especially in developing countries and their roles are not clearly established in clinical practice. We have observed that some biochemical alterations in blood and urine occur in a standardized way during most AKI development, even before increases in sCr. Sequential assessment of urine sodium, urine creatinine and the fractional excretion of potassium are simple, low cost and widely available parameters that have a still under-recognized potential to help in the early detection of kidney impairment. Many controversies still remain in how to interpret their values especially after increasing evidence that urine biochemistry is not a tool for renal perfusion evaluation as suggested for decades in the classic “pre-renal” paradigm. More research is needed in order to optimize the use of urine biochemistry in AKI diagnosis and management.

Biography

Alexandre Toledo Maciel was graduated in Medicine at the Federal University of Rio de Janeiro and made his Medical Residency at the University of Sao Paulo in the area of Intensive Care Medicine. He works as an intensivist and is also the Clinical Research Manager of the Imed Group, which is a group of physicians and nurses dedicated to improve the care of critically ill patients. He has published more than 35 papers in international critical care journals.

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