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Acute kidney injury: Past, present and future

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Acute Kidney Injury is a life-threatening disease that occurs in about 9-16% of hospitalized patients, however it can be higher in different settings, like in Intensive Care Units, where AKI can be seen in about 22-57% of the patients, depending on the population studied. AKI increase the morbidity and mortality of the patients, even in episodes of subclinical AKI, as demonstrated by Husain-Sayed F et al and many others authors. Besides that, the costs after an episode of AKI can increase dramatically the cost of hospitalization, the length of stay and can also lead to late no complete recovery of kidney function, leading to a real public health problem. In a recent past and also in the majority of Countries, the diagnosis of AKI is still based on increase in creatinine levels and low urinary output. However, there are promises advances in techniques trying to detect the presence of AKI in subclinical stages, what could be a great step in prevention and also in precise interventions that could try to stop that damage caused by an episode of acute kidney failure. A promising in earlier diagnosis of AKI is the use of cell-cycle arrest biomarkers of acute kidney damage, like the use of Urinary tissue inhibitor of metalloproteinases-2 (TIMP-2) and insulin-like growth factor binding protein 7 (IGFBP7). The combination of these both biomarkers can detect AKI in a subclinical stage when there were still no changes in creatinine level or urinary output. In a recent paper published by Husain-Syed F and co-workers, in a specifically population of patients undergoing to elective cardiac surgery, the use of the biomarkers [TIMP-2]. [IGFBP7] in the immediate postoperative could predict the development of AKI with an AUC of 0.87. But we cannot talk about the advances in the treatment of AKI when the patients had to go to hemodialysis. The machines are becoming each day more precise, with control of the amount of volume that should be removed from the patient, different kind of alarms that prevent eventual complications during the therapy and also the possibility to combine hemodialysis with others treatments like ECMO, machines to support patients for liver transplantation and many others. In conclusion, there are still a lot of to do, but all community of nephrologists, critical care intensivists and physicians are focus on studying ways to make an early diagnosis, interventions that could prevent the development of AKI and new strategies of treatment.

Biography

Pércia Bezerra has completed his Graduation in Medicine at Federal University of Pernambuco (2002), Internal Medicine Residency and Nephrology Residency at São Paulo University.

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