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miR-223 is a biomarker of vascular damage in the course of chronic kidney disease, and an innovative therapeutic target

Laurent Metzinger
INSERM, France

Development of disease is often due to deregulation of gene expression. The gene program is controlled at the post-transcriptional level by the action of small non-coding RNAs known as microRNAs (miRNAs), short, single-stranded molecules that control mRNA stability or translational repression via base pairing with regions in the 3' untranslated region of their target mRNAs. Over the last decade, considerable progress has been made to elucidate the roles of miRNAs in vascular pathogenesis and develop the use of miRNAs as innovative biomarkers in diagnostics, and as groundbreaking drugs in pharmacological treatments. We have recently shown that miR-223 is implicated in the course of chronic kidney disease (CKD) and is associated with vessel damage, such as vascular calcifications and atherosclerosis. This inflammatory miRNA is increased *in vitro* in vascular smooth muscle cells subjected to uremic toxins and is also increased *in vivo* in more advanced stages of CKD. Finally, miR-223 levels have been found to be deregulated in murine and human serum in the course of experimental CKD and in human diabetic patients. We are now in the process of evaluating its role in pre-clinical models of cardiovascular diseases, and are finding clues concerning its gene regulatory actions, using a combination of transcriptomics, proteomics and metabolomics. In conclusion, miR-223 could play a role in CKD vascular remodeling and may therefore represent an useful target to prevent or treat complications of CKD.

laumet@u-picardie.fr

Experience in CRRT using PRISMA monitor in the ICU of a university hospital in Northeast Mexico

Rizo-Topete Lilia María
Universidad Autonoma de Nuevo Leon, Mexico

Introduction: The AKI appears in 5-25% of patients in ICU, of which 6% will require RRT. If the AKI is associated with MODS mortality will be 50% and if RRT is required this will be 80%. Sepsis and Acute tubular perfusion are causes of AKI. The CRRT is an option for hemodynamically unstable patients and those who cannot handle the volume or metabolic disorders. The hemodialysis (HD) in critical patients is a common practice; however, the use of continuous therapy with hemodiafiltration modality requires special characteristics.

Objective: To describe the experience using PRISMA monitor in our center.

Material & Methods: Retrospective, descriptive, observational study. All patients were given CRRT with PRISMA at our center from March 2013 to November 2014. Data analysis was performed using Excel and SPSS programs. There is no conflict of interest and was conducted according to the ethics committee of our hospital.

Results: CRRT was applied in an active way to 18 patients, 15 males (83%) and 3 females (17%), the average age was 43.9 years (Min. 17 Max. 78). 14 presented AKIN III, 4 where known with CKD. The most common cause of AKI was septic shock (83.3%). The oliguric AKI was the most common form of presentation in 86% of the patients. The average days of stay in ICU was 17.5 (SD 16.5). The average days of arrival and development of AKI is 2.6 days (SD 2.9). APACHE II and SOFA admission average was 30.5 (SD 6.5) and 13.6 (of 3.9) respectively. It was possible to stop CRRT in 5 of 18 patients (27.7 %), 2 patients continued with HD. There was a patient with combined therapy PRISMA-MARS. Only 3 out of 18 patients (20%) survived the hospital stay. In the comparative analysis of the groups: Survivors versus non survivors, there were no statistically significant differences in the SOFA and APACHE II scores or in the days of stay in the ICU with IC of 95%. As for the prescription, blood flow measured in ml/min, extraction measured in ml/hr, the dialysate, the reinjection and total UF, showed no statistically significant differences with IC of 95%.

Discussion & Conclusions: According to the results, our experience is similar to that reported in the literature with high mortality in patients with AKI and MODS, despite improvement in renal function. With the methodology used and the present number of patients, it´s not possible to point out a good or bad prediction factor on the clinical characteristics of the patients or the therapeutic prescription.

marili18@hotmail.com