

KRC Newsflash

Research advances, awards and upcoming events in the kidney research community

Research Advances

The therapeutic effects of microRNAs in preclinical studies of acute kidney injury: A systematic review protocol.

"Acute kidney injury (AKI) is a serious medical problem that is associated with high death rates, and often leads to chronic kidney disease or need for long-term dialysis or kidney transplant. There are currently no treatments that can help repair kidneys after AKI. MicroRNAs are short sequences of RNA nucleotides produced by all cells, and can block production of proteins by binding to messenger



RNA sequences. Studies in experimental models have demonstrated promising potential for microRNA therapy in AKI, as these agents often reduce injury and/or stimulate repair pathways. Dr. Kevin Burns and colleagues have published a protocol to conduct a detailed systematic review of experimental studies on the effects of microRNAs as therapy for AKI. The results of this review will identify the most promising microRNA candidates, and guide further research regarding dose, timing and route of administration, with a goal to accelerate potential use of these agents in humans with AKI.

Zankar S, Rodriguez RA, Vinas JL, Burns KD. The Therapeutic Effects of microRNAs in Preclinical Studies of Acute Kidney Injury: A Systematic Review Protocol. Systematic Reviews 2019 Oct 10;8(1):235. doi: 10.1186/s13643-019-1150-1.

Prostaglandin E2 receptor EP1 (PGE2/EP1) deletion promotes glomerular podocyte and endothelial cell injury in hypertensive TTRhRen mice.

Hypertension and diabetes are major causes of cardiovascular illness and death worldwide and leading causes of chronic kidney disease. The role of the prostaglandin E2 receptor (EP1) in hypertensive kidney disease remains controversial, depending on the duration and magnitude of hypertension. The purpose of this study by **Dr. Richard Hébert** and colleagues was to examine the



contribution of the Prostaglandin E2 receptor/EP1 to longstanding hypertensive kidney disease in mice, in comparison with hypertensive diabetic mice. Dr. Hébert found that hypertensive mice bred without EP1 receptors had increased albuminuria and reduced glomerular filtration rate (GFR) resulting in worsened renal outcomes. The work of Dr. Hébert's Lab suggested that the deletion of EP1 receptors caused tubular dilatation and

Join our community!



Follow us on Twitter @krc_events Find us on Facebook @krcevents

Donate—Support Research Online

The Ottawa Hospital Foundation https://bit.ly/2SeEKWO

or

Mail-in

- 1) Complete the donation form
- 2) Mail donation along with donation form to: The Ottawa Hospital Kidney **Research Centre** 2518-451 Smyth Road Ottawa ON K1H 8M5

Living Kidney Donor Program

Information regarding The Ottawa Hospital's Living Kidney Donor program is available on The Ottawa Hospital website.

www.ottawahospital.on.ca/en/ clinical-services/deptpgrmcs/ programs/kidney-donation/.

The KRC Newsflash is published by scientists and staff at the KRC. For more information, please contact the KRC Administrative Assistant, Jennifer Brownrigg.

Email: iebrownriaa@ohri.ca Tel. 613-562-5800 x.8240

http://www.ohri.ca/centres/KRC/

The dedicated laboratory scientists and clinician investigators at the Ottawa Hospital Research Institute's Kidney Research Centre (KRC) work together to improve the lives of people affected by kidney disease.





October 2019



KRC Newsflash

Research advances, awards and upcoming events in the kidney research community

Research Advances (continued)

injury in the diabetic mice. Receptor EP1 is protective against glomerular and endothelial injury in hypertensive kidney disease but harmful in diabetic kidney disease. **Dr. Hébert's** research highlights the importance of carefully examining disease state (diabetes vs hypertension).

Nasrallah R, Zimpelmann J, Robertson SJ, Ghossein J, Thibodeau JF, Kennedy CRJ, Gutsol A, Xiao F, Burger D, Burns KD, Hébert RL. Prostaglandin E2 receptor EP1 (PGE2/EP1) deletion promotes glomerular podocyte and endothelial cell injury in hypertensive TTRhRen mice. *Laboratory Investigation* 2019 https://doi.org/10.1038/ s41374-019-0317-7.

Facility variation and predictors of do not resuscitate orders of hemodialysis patients in Canada: DOPPS.

Advanced care directives (ACD) outline the specific care protocols in the event of critical illness and may lead to the patient's end of life care being most consistent with their wishes. Life expectancy of patients with end-stage kidney disease treated with hemodialysis (HD) is reduced compared to people without need for dialysis, and as such, the presence of an ACD may improve the quality of



death for the patient and their family. Strategies to discuss and implement ACDs are limited with little known about the status of "Do Not Resuscitate" (DNR) orders in the Canadian HD population. With the goal of improving end of life care **Dr. Manish Sood** and colleagues analyzed data from the Dialysis Outcomes and Practice Patterns Study (DOPPS). The study found that 96% of patients treated with HD had a documented ACD and 10% had a DNR order. Patients with a DNR order reported lower energy, more difficulty with meal preparation, household tasks and financial management. Age, cardiac disease, stroke, dialysis duration and intradialytic weight gain were associated with patients who had a DNR order. Researchers noted variability in the number of patients with a DNR order across the provinces and within Ontario. The introduction of provincial or national end of life (EOL) care plans could reduce the variability of DNR orders found by **Dr. Sood's** study.

Moorman D, Mallick R, Rhodes E, Bieber B, Nesrallah G, Davis J, Suri R, Perl J, Tanuseputro P, Pisoni R, Robinson B, Sood MM. Facility Variation and Predictors of Do Not Resuscitate Orders of Hemodialysis Patients in Canada: DOPPS. *Canadian Journal of Kidney Health and Disease*, 2019. https://www.ncbi.nlm.nih.gov/pubmed/31632682.

Awards & Distinctions

Dr. Manish Sood was appointed as a Scientist at OHRI, started as Secretary Treasurer of the Canadian Society of Nephrology Executive Committee and was appointed to the editorial Board of the American Journal of Kidney Disease and the Canadian Journal of Cardiology.

October 2019

Dr. Swapnil Hiremath was appointed to the Editorial Board of the American Journal of Kidney Disease and appointed to the Board of Directors of Hypertension Canada.







The dedicated laboratory scientists and clinician investigators at the Ottawa Hospital Research Institute's Kidney Research Centre (KRC) work together to improve the lives of people affected by kidney disease.