

Research Advances

Risk of hospitalization for serious adverse gastrointestinal events associated with sodium polystyrene sulfonate use in patients of advanced age.

A high blood potassium level is a potentially life threatening electrolyte imbalance often due to kidney disease or an adverse effect of certain medications. Sodium polystyrene sulfonate (Kayexelate) has been used for the treatment of high potassium for over 60 years. Case reports have suggested the possibility of gastrointestinal injury (including lack of blood flow, blood clots, ulcers and perforations) with the use of Kayexelate. Using data from the Institute of Clinical Evaluative Sciences (ICES) on over 20,000 patients prescribed Kayexelate, a new study led by **Dr. Manish M. Sood**, found a nearly 2-fold higher risk of hospitalization or emergency room visits for severe gastrointestinal injury within 30 days of Kayexelate use. This study is the first to examine the risk of Kayexelate on a population-level and raises serious concerns about its ongoing use.

Noel JA, Bota SE, Petrich W, Garg AX, Carrero JJ, Harel Z, Tangri N, Clark EG, Komenda P, Sood MM. Journal of the American Medical Association – Internal Medicine doi: 10.1001/jamainternmed.2019.0631, 2019.
<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2735447>

PBI-4050 via GPR40 activation improves adenine-induced kidney injury in mice.

An ongoing collaborative effort between **Dr. Jean-François Thibodeau** of Prometic Biosciences Inc., and **Drs. Chris Kennedy** and **Richard Hébert** of the KRC has led to the publication of a paper in the journal 'Clinical Science'. The research paper describes the beneficial effects of an anti-fibrotic compound, PBI-4050, in a model of kidney injury induced in mice. In addition, the authors demonstrate that the new drug's activity in the kidney relies heavily on its ability to activate a cell-surface receptor known as G-protein receptor 40 (GPR40). These exciting findings add further support for PBI-4050's therapeutic potential in kidney diseases where fibrosis is involved and identifies GPR40 as being beneficial for kidney function. PBI-4050 is Prometic Biosciences lead drug candidate and is currently in clinical studies for metabolic syndrome, liver, lung and kidney injury.

Thibodeau JF, Simard JC, Holterman CE, Blais A, Cloutier MP, Medeiros T, Leduc M, Groulx B, Leblond FA, Burger D, Hébert RL, Kennedy CRJ, Gagnon L. Clinical Science pii:CS20190479, 2019.
<http://www.clinsci.org/content/early/2019/07/15/CS20190479>



(Continued...)

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/deptpgmcs/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: jebrownrigg@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.



Kidney Research Centre
Centre de recherche sur
les maladies du rein

KRC Newsflash

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

July 2019

Research Advances (continued)

Use of directly observed therapy to assess treatment adherence in patients with apparent treatment-resistant hypertension.

Among hypertensive patients, those with true resistant hypertension (HTN) have the highest risk of adverse cardiovascular outcomes. Pseudoresistance secondary to non-adherence to prescribed drugs (i.e. not taking medicine as prescribed) contributes to the overestimation of the prevalence of true, drug-resistant HTN. In addition, unrecognized pseudoresistance may also result in unnecessary medical visits, diagnostic tests, and sometimes even invasive treatment procedures.



Dr. Marcel Ruzicka and colleagues studied to what extent non-compliance with blood pressure (BP) lowering drugs goes undetected by standard methods for evaluation of non-adherence and contributes to apparent hypertension resistance to medical therapy. There is currently no unified approach to the diagnosis of non-adherence to BP lowering drugs. Indirect measures such as asking the patient, pill counts and review of pharmacy filling reports are helpful, but may not reveal the full extent of non-adherence. The effect of BP lowering drugs, in particular their peak BP lowering effect within 1-4 hours post administration, can allow a response to direct observed therapy (DOT) to unmask non-adherence.

The results indicate a high prevalence (about 30%) of non-adherence that went undetected by standard methods used for evaluation of adherence to BP lowering drugs in patients with apparent resistant hypertension.

Direct observed therapy identifies non-adherence, thereby optimizing resources for diagnostic tests and therapeutic procedures for those who truly need them. Furthermore, detecting intentional non-adherence may “cure” the non-adherence in the medium term.

Ruzicka M, Leenen FHH, Ramsay T, Bugeja A, Edwards C, McCormick B, Hiremath S. *Journal of the American Medical Association – Internal Medicine* doi:10.1001/jamainternmed.2019.1455, 2019.

<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2735985>

KRC Outreach

KRC Golf Tournament



Register before **August 26, 2019** and you will be entered into a draw for an **amazing trip to Montreal (2 tickets on Via Rail, 2 tickets to a Montreal Canadiens Game and 1 night in a hotel)**, courtesy of **The Ottawa Nepean Canadian Sports Club**.

Register today for the 16th Annual Kidney Research Centre Golf Tournament to be held on **Monday, September 9, 2019** at **The Meadows Golf and Country Club**.

Register to golf or to become a sponsor at: www.krc-golf.ca

If you have any questions about this event or if you would like to discuss supporting Kidney Research at The Ottawa Hospital, please contact Julie Beckett at jbeckett@toh.ca or by phone at 613-798-5555 ext 17418.

Thank you for your support of Kidney Research at The Ottawa Hospital.

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.

