KHSC CEO's Research Brief

Addressing the complexities of pain

May 2019

Kingston Health Sciences Centre and Queen's University are working at the leading edge of pain research. These institutions comprise a multi-site laboratory where researchers and KHSC clinicians as well as nurses, therapists and social workers work together with patients to study the complex problem of pain, from the mechanisms that cause it, to the treatments that alleviate it. Enhancing this work is the formation, in 2018, of a research group, The Collaborative for Pain Research & Management (official name TBD). This group is a partnership between KHSC, Queen's and the Kingston community.

A national effort in chronic pain research

Director of Clinical Pain Research Dr. Ian Gilron (Anesthesia and Perioperative Medicine and Biomedical and Molecular Sciences, Queen's), is globally recognized for research that leads to better frontline treatments for pain. Dr. Gilron is also co-leader of the Chronic Pain Network (CPN), a Canada-wide, $25M CIHR-funded Strategy for Patient-Oriented Research initiative that is targeting new treatments to manage and prevent chronic pain. Within the CPN, Dr. Gilron is also Chair of a new Clinical Pain Research Network involving 12 chronic pain clinics across Canada. Here at KHSC/Providence Care/Queen's, Dr. Gilron is Principal Investigator of three new clinical trials of innovative chronic pain strategies, funded by CIHR and PSI Foundation.

Understanding pain's internal 'clock'

Dr. Nader Ghasemlou (Anesthesia and Perioperative Medicine and Biomedical and Molecular Sciences, Queen's) leads the Pain Chronobiology & Neuroimmunology Lab, carrying out translational research into the molecular and cellular mechanisms that cause pain. In one of these studies, working with Dr. Gilron, and other clinicians and patients at the Chronic Pain Clinic, he is uncovering intriguing connections between circadian rhythms – the internal 'clock' that regulates the body and its cells – and responses to pain. Ultimately he hopes to identify biomarkers in the blood that explain these changes in pain, leading to the development of better treatments and care for patients with chronic pain.

Urological pain

Dr. Curtis Nickel (Urology, Queen's) is an award-winning clinician-scientist addressing the often neglected issue of pelvic pain, including diseases of the urinary tract and prostate gland. He is a Tier 1 Canada Research Chair in Urologic Pain and Inflammation, and his current research is supported by more than $3M in research funding from CIHR and the National Institutes of Health.

The mobility analgesic

Does getting moving more quickly after surgery reduce postoperative pain? Dr. Michael McMullen

(Anesthesia and Perioperative Medicine, Queen's) and members of the Acute Pain Management Service are exploring the interaction between patient mobility, measures of pain interference and patient report outcomes, including quality of recovery. Currently in its early stages, this study will use ankle-mounted commercial mobility trackers on patients to see if a rapid return to mobility leads to shorter recovery times and faster discharge. Dr. Ghasemlou's lab is following up this research to identify pathways/targets of interest.

Local studies, broad impact

The Chronic Pain Clinic at KHSC's Hotel Dieu Hospital site, under the direction of Dr. Scott Duggan (Anesthesia and Perioperative Medicine, Queen's) offers patients a comprehensive pain management program. This clinic, with Research Coordinator Dr. Etienne Bisson (Anesthesia and Perioperative Medicine and School of Rehabilitation Therapy, Queen's), is also a key resource in chronic pain research collaborations both locally and nationally. As part of the Chronic Pain Network, the clinic is involved in a five-year national study of adults using cannabis for chronic pain, led by a team at McMaster University.

Locally, one notable research effort of the clinic is the creation of a chronic pain registry that includes patient self-reported outcomes. This registry, used clinically, is an outstanding resource for observational research. For example, one recent study used this data to examine the incidence and risk factors of falls in adults with chronic pain. Several other studies initiated at the clinic are looking at barriers and facilitators to exercise in people with chronic pain, evaluating the clinic's compliance to intrathecal therapy guidelines, and comparing the efficacy of two different psychological therapies for chronic pain. Knowledge gained through these studies leads to better treatment and care locally and nationally.