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# PSMA-PET in Canada: More questions than answers

The era of PSMA-PET has arrived in Canada, and while patients and physicians are excited about how it may personalize treatment and improve outcomes, in many circumstances, it remains unclear how to apply information from PSMA-PET to patient care and if treatment modification based on PET improves outcomes. Furthermore, current access to PSMA-PET in Canada is limited, inequitable, and costly, forcing physicians to contemplate how to best use this resource.

It is well-established that PSMA-PET has superior sensitivity and specificity than conventional imaging for prostate cancer detection.<sup>1</sup> While Health Canada approved its first PSMA avid radiopharmaceutical, Gallium-98, in October 2022, routine use of PSMA-PET is not established in Canada, and access is mainly through trials, private healthcare, and registries.

In this month's *CUAJ*, Arifin et al examine the impact of PSMA-PET on prostate cancer management and outcomes.<sup>2</sup> The authors examined a cohort of patients with or without access to F-DCFPyL PSMA-PET prior to receiving salvage radiotherapy (RT) following biochemical recurrence (BCR) after radical prostatectomy (RP). The PSMA-PET cohort had a higher median pre-salvage RT prostate-specific antigen (PSA), a longer time from surgery to RT, and a higher proportion of patients receiving RT to pelvic lymph nodes. Despite the higher PSA levels in the PSMA-PET group, oncological outcomes were similar between the two cohorts. When specifically comparing late-salvage RT PSMA patients to early-salvage non-PSMA patients, the outcomes remained similar. These results insinuate that delays in treatment to access PSMA scans may not impact outcomes, or that information obtained from PSMA scans may allow physicians to tailor treatments to render them more effective. Of note, the authors excluded patients who did not receive RT due to negative PET imaging but acknowledged that future studies could include these patients. Emmet et al found that of the patients with a negative PSMA-PET scan who did not receive salvage RT, 66% had PSA progression, with a mean PSA rise of 1.59 ng/mL over the three-year period.<sup>3</sup> Further research that includes patients with treatment de-escalation based on PSMA-PET results is required to determine the safety of this approach.

A prospective trial of 635 patients reported PSMA-PET-directed therapy alone resulted in a PSA response in 80% of patients.<sup>1</sup> A meta-analysis reported a pooled change in management after PSMA-PET of 56% for patient with BCR.<sup>4</sup> Higher-level evidence will hopefully be available in the coming years from a Canadian randomized control trial (PATRON) that is accruing and will examine if PSMA-PET-guided treatment improves cancer outcomes compared to conventional imaging in patients at high risk of recurrence.<sup>5</sup> Other exciting areas of research with PSMA-PET include metastasis-directed therapy<sup>6</sup> and directing radioligand therapy.<sup>7</sup>

While it seems certain PSMA-PET imaging will soon have a more established role for Canadian prostate cancer patients, further studies are required to determine how to best use results to improve patient care and how to make this technology available to Canadian patients in an equitable fashion.

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