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### POD-2

#### Sublingual vaccination with MV140 prevents recurrent urinary tract infections in women: Preliminary results from a randomized, double-blind, placebo-controlled trial

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**Introduction:** Recurrent urinary tract infections (rUTI) affect 5–10% of women, resulting in enormously high use of antibiotics contributing to morbidity in individual patients and the massive rise of antimicrobial resistance. MV140 (Uromune®) is a polybacterial sublingual vaccine consisting of whole-cell inactivated bacteria (*E. coli* 25%, *K. pneumoniae* 25%, *E. faecalis* 25%, and *P. vulgaris* 25%) that has shown clinical benefit in observational studies of >1000 individuals.<sup>1</sup> Confirmation of its clinical efficacy has awaited results from a randomized placebo-controlled trial (RCT). We present the late-breaking preliminary results of this RCT, which is presently in the analysis stage.

**Methods:** A phase 3, multicenter, double-blind, parallel-group RCT enrolled 240 women aged 18–75 with rUTI (≥5 uncomplicated UTI during the previous year). They were randomly allocated to receive placebo for six months or MV140 (active) for three or six months, in a 1:1:1 ratio. Primary and major secondary endpoints were number of UTIs and UTI-free rate in the nine-month study period following three months of intervention, respectively.

**Results:** The median number of UTI episodes was 3.0 (interquartile range [IQR] 0.5–6.0) for placebo group compared to 0.0 (IQR 0.0–1.0) in both groups receiving MV140 (p<0.001). A significant increase (over two-fold) in the UTI-free rate was observed (p<0.001) in the treatment groups (55.7% and 58.0% in subjects receiving MV140 for three or six months, respectively) compared to the placebo group (25.0%). Only five subjects reported non-serious adverse reactions, two in the placebo group and three in the MV140 three-month group.

**Conclusions:** The preliminary, late-breaking analysis of this first MV140 RCT shows clinical efficacy and safety in reducing the incidence and preventing recurrence of UTIs. Clinical use of this novel sublingual bacterial vaccine prophylaxis will offer women an effective evidence-based alternative to antibiotics in the management of rUTI.

#### Reference

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### MP-6

#### Influence of the COVID-19 pandemic on the burnout rates of graduating Canadian urology residents

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**Introduction:** Burnout is a work-related psychological syndrome characterized by emotional exhaustion, decreased sense of personal accomplishment, and depersonalization.<sup>1</sup> Burnout among surgeons is increasing, with prevalence rates exceeding 50%.<sup>2</sup> COVID-19 has affected the medical system, with evidence of increased stress and levels of depression in our medical trainees.<sup>3</sup> This study aims to assess the influence COVID-19 is having on burnout rates in Canadian urology trainees.

**Methods:** Thirty-seven chief residents among the Canadian urology residency programs attended the Queen's Urology Exam Skills Test (QUEST) on December 2019, pre-pandemic, and 39 chief residents attended virtually on November, 2020 during the pandemic. The Maslach Burnout Inventory (MBI) questionnaire was administered anonymously. The MBI covers emotional exhaustion, depersonalization, and personal accomplishment.<sup>4</sup> Descriptive statistics were used to analyze the data.

**Results:** There was 100% response rate in the convenience sample (n=37) in 2019 and 64.1% response rate (n=25) in 2020. Seventy percent of chief residents in Canadian urology programs showed evidence of burnout in 2019 compared to 88% in 2020. There was a statistically significant difference between the two cohorts in emotional exhaustion (45.9% in 2019 and 68% in 2020, p=0.005) and depersonalization scores (62.2% in 2019 and 80% in 2020, p=0.02).

**Conclusions:** This study is the first to examine the impact of the pandemic on burnout rates in urology trainees. Burnout rates are high in trainees at baseline, and the pandemic appears to have exacerbated this problem. Vigilance and proactive steps need to be implemented to alleviate this crisis.

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**MP-7****Prospective evaluation of postoperative pain and opioid use after minor urologic surgery**

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**Introduction:** The opioid crisis has reached epidemic proportions in North America. Strategies to reduce the number of opioid medications reaching the community are critical. The aim of this study is to describe opioid prescribing patterns for common minor urological procedures at a Canadian academic center.

**Methods:** From September to December 2020, a prospective, observational study was conducted at St. Joseph's Health Care in London, Ontario. We invited patients over 18 years old undergoing minor urological procedures. Consenting participants were provided with a pain diary and postoperative pain questionnaire. Patients on chronic pain medications or who had undergone major surgery in the prior six months were excluded. Overall response rate, pain on visual analog scale, pain control satisfaction, quantity of opioids prescribed, and consumption of opioid and non-opioid medication were collected and analyzed.

**Results:** Forty-three patients met our inclusion criteria. The average age was 64.6 years, with 95% being male. Overall response rates for the opioid diary and pain questionnaire were 58% and 60%, respectively. On average, patients used pain medications for 3.6 days following their procedure. Eight patients (31%) filled an opioid prescription, with an average of five oral morphine equivalents (OME) consumed. We identified 66 unused opioid pills from post-procedure prescriptions; only 10.6% were returned to pharmacy for disposal. The mean overall pain score for patients who did and did not fill opioid prescriptions were 3.69/10 and 2.28/10, respectively, with mean overall pain management satisfaction score of 6.75/10 and 8.44/10, respectively.

**Conclusions:** Most patients undergoing minor urological procedures do not require opioid medication use for postoperative pain control, and those that do require very few OME. Current narcotic prescribing patterns result in significant overprescribing of opioid medications and practice changes are warranted to address the opioid crisis.

**MP-8****Survey of Canadian urology residency programs: Perception of virtual education during the COVID-19 pandemic and beyond**

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**Introduction:** The COVID-19 pandemic has caused many residency programs to pivot from traditional face-to-face to virtual teaching. The objective of this study is to assess the present state of virtual education in Canadian urology programs and gauge interest in a national virtual curriculum.

**Methods:** An electronic, 15-item survey was distributed to all 13 Canadian urology programs — both to program directors and administrative assistants — for circulation to residents. Data collection took place over six weeks from September to November 2020. A mixed-methods approach was used, including descriptive statistics. A qualitative synthesis of responses to open-ended questions was conducted as an inductive thematic analysis.

**Results:** Eleven program directors and 32 residents from all four geographic regions responded to the survey. Most (95.3%) respondents indicated a role of virtual education in their program during the pandemic. Residents reported an average of 6.9±1.1 hours spent per week in online learning. Most respondents (74.4%) believe there is a significant or very significant role for a virtual national urology curriculum. All program directors indicated they are at least somewhat likely to require resident participation in a national urology curriculum; 90.6% of resident respondents indicated they believe such a curriculum will be at least somewhat important to their learning. Commonly described benefits include exposure to subspecialties and expertise at other institutions, and standardization of

teaching. Commonly described barriers include difficulty with engagement, time zone differences, and lack of dedicated time for attendance.

**Conclusions:** During the COVID-19 pandemic, virtual education has become well-integrated in Canadian urology programs. This study highlights interest in the development and implementation of a national virtual urology curriculum and some key considerations to maximize its success and value to the Canadian urological community.

**MP-9****Development and national implementation of virtual urology electives during COVID-19 pandemic**

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**Introduction:** The COVID-19 pandemic hindered in-person rotations internationally. The Society of Academic Urologists (SAU) predicted the problem would be amplified for elective students and proactively developed a committee that developed a thorough, multifaceted guidebook and curriculum. We surveyed the country's programs and all students regarding virtual electives (VE) during the pandemic.

**Methods:** The vSIU guidebook was distributed to all 142 member programs in June 2020. Programs were encouraged to offer VE. We developed surveys using a previously published comprehensive framework for evaluating technology-enhanced learning. Following the interview cycle, surveys were distributed to all registered SAU programs and AUA students.

**Results:** A total of 156 students (30%) and 58 programs (41%) responded. Seventy-four (47%) students participated in one or more VE of the 30 (21%) programs offered. Of these VE, 63% were two-weeks, 47% were full-time, and 77% were accredited. VE consisted of a range of didactics, clinical/surgical sessions, and self-directed learning. Most (68%) programs used the SAU guidebook and assessment tools. The most important goals for both groups were assessing culture and "a good fit" (>50% rated "extremely important"), and these goals were achieved by >75% of students and program directors (PDs). Overall, 77% of PDs and 78% of students rated the VE "very good" or "excellent." Longer elective duration, full-time commitment, and use of the SAU guidebook and assessment tools were associated with higher ratings (p<0.05). Although the majority found VE less effective than in person, about 3/4 of PDs and 1/2 of students would recommend incorporating virtual components into future electives — especially for teaching foundational knowledge.

**Conclusions:** The vSIU was a successful nationwide initiative to provide virtual urological education to senior medical students. The electives were highly rated and achieved the most important objectives for students and programs. The most successful courses were those with longer duration, full-time commitment, and use of SAU resources.

**MP-10****The impact of COVID-19 on urology resident surgical experience: An analysis of national case logs**

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Support: Resilience Software Inc.

**Introduction:** The emergence of the COVID-19 pandemic resulted in elective surgical closures across Canada beginning March 2020. The impact of these closures on residents training experience is uncertain. Our objective is to evaluate the impact of COVID-19 on urology resident surgical experience using a national case log surgical registry.

**Methods:** Urology resident case log data in T-Res was analyzed from September 15, 2019 to September 14, 2020 for 14 common urological procedures. The six-month time period (September 15, 2019 to March 14, 2020) prior to COVID-19 was compared to the six-month time period after COVID-19 (March 20, 2020 to September 14, 2020). Data

was analyzed from 122 residents in 11 residency programs, with active users generating case logs over this time period. Total number of cases per program for the 14 surgeries, as well as specific surgery volumes, were analyzed. A paired sample t-test was used for comparison of mean cases pre- and post-COVID-19, with an alpha of 0.05 defined as significant.

**Results:** A total of 12 831 procedures were recorded over the 12-month period. In the pre-COVID window, 7211 procedures were logged, while 5620 procedures were logged in the post-COVID window. Nine of 11 (81.8%) programs reported a reduction in surgical volumes. Mean total case numbers were significantly reduced in the six months after COVID-19 (510.9 vs. 655.5,  $p=0.05$ ). Mean volumes after COVID-19 for transurethral resection of bladder tumor, percutaneous nephrolithotomy, hypos-

padias repair, ureteroscopy, stent insertion, radical prostatectomy, radical nephrectomy, and partial nephrectomy were not significantly reduced ( $p>0.05$ ). However, mean surgical volumes after COVID-19 for transurethral resection of the prostate ( $p=0.02$ ), circumcision ( $p=0.02$ ), hydrocelectomy ( $p=0.01$ ), orchidopexy ( $p=0.03$ ), radical cystectomy ( $p=0.006$ ), and cystolithopaxy ( $p=0.04$ ) were reduced.

**Conclusions:** Based on this national case log sample, there appears to be an overall decline in urology resident surgical experience in the six months after COVID-19. This decline should be monitored closely in the context of the degree of resident case involvement and competency