

Summer Research- Neel Raval

To the Endourological Society,

First of all, I would like to thank the Endourological Society for providing me with the opportunity to conduct research in Urology over the course of my first summer in medical school. I have added profoundly to my fund of urologic knowledge and have also built relationships with the extremely dedicated physicians, research coordinators and associates here at Washington University.

I have been involved in the development and implementation of numerous projects, chief among them being 'A Prospective, Randomized, Controlled Study of Preoperative Anti-Inflammatory Treatment for Ureteral Stent Symptoms (USS) – A Pilot Study' with Drs. Ramakrishna Venkatesh and Alana Desai. This study addresses an important issue in the management of ureteral obstruction.

We are interested in evaluating the utility of administering Ketorolac for patients undergoing ureteral stent placements for urolithiasis. Ketorolac is a non-steroidal anti-inflammatory drug which provides an analgesic effect in numerous settings. In our research, patients are randomized to receive either Ketorolac or saline preoperatively. The primary outcome of interest is the reduction of stent related symptoms, which will be assessed through the administration of the Ureteral Stent Symptom Questionnaire (USSQ). A secondary outcome of interest is the evidence of a decrease in plasma inflammatory markers as measured by the V-PLEX Human Biomarker 40-Plex Kit (Meso Scale Diagnostics, Rockville, Maryland). We expect patients treated with Ketorolac preoperatively to have lower measured inflammatory markers and correspondingly report decreased stent-related symptoms.

Currently, we have obtained full IRB approval and are in the process of recruiting patients for this study. We have currently recruited 4 patients and seek to recruit 9 more before running our first set of analyses. I have been able to observe and even assist with lithotripsy and ureteral stent procedures in the OR. I will continue to help recruiting patients, analyzing biometric data and drafting our results for submission to Urology journals and conferences. My primary goal at this point is to submit an abstract for AUA 2019 in Chicago, Illinois. I am excited to share our preliminary results with the Endourological Society very soon.

Not only have I learned what is required to conduct a clinical trial, from writing an IRB protocol to recruiting patients, but I have gained insight into the impact these trials can have on clinical decision-making across the country. It has been eye-opening to hear patients tell their stories and voice their concerns about the severity of stent pain. Some have indicated it was among the worst pain they have ever experienced. I am confident that a seemingly minor intervention such as ours has the potential to significantly improve patient quality of life through better management of postoperative pain.

Once again, I would like to express my sincere gratitude and appreciation to the Endourological Society for this terrific experience. I have no doubt that my work over this summer will prepare me for a fulfilling and multi-faceted career in urologic surgery.

Best,



Neel Raval

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