INTRODUCTION AND OBJECTIVES: Surgical options are limited when treating large (>80cc) prostates for lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH); there is a need for novel surgical approaches with shorter learning curves and effective treatment. Aquablation (AquaBeam System, PROCEPT Bio-Robotics, Inc., USA), an ultrasound-guided, robotically executed waterjet ablative procedure, could be this novel tool. This analysis compares the outcomes of Aquablation in 30cc to 80cc prostates with the outcomes in 80cc to 150cc prostates.

METHODS: WATER (NCT02505919) is a prospective, double-blind, multicenter, international clinical trial comparing the safety and efficacy of Aquablation and transurethral resection of the prostate in the treatment of LUTS/BPH in men 45 to 80 years old with a prostate between 30cc and 80cc. WATER II (NCT03123250) is a prospective, multicenter, single-arm international clinical trial of Aquablation in men with a prostate between 80cc and 150cc. We herein report baseline parameters and 6-month outcomes in 116 WATER (W-I) and 101 WATER II (W-II) study subjects undergoing Aquablation. Students’ t-test or Wilcoxon tests were used for continuous variables and Fisher’s test for binary variables.

RESULTS: Mean operative time was 33±17 minutes in W-I and 37±13 minutes in W-II. The average length of stay post-procedure was 1.4±0.7 days (W-II) vs. 1.6±1.1 days (W-II). Mean changes in International Prostate Symptom Score (IPSS) and IPSS quality of life were substantial, occurring soon after treatment and averaging (at 6 months) 16.9 and 3.5 points, respectively, in W-I and 17.4 and 3.2 points in W-II (p=0.8046 and .2607 respectively). By 3 months, Clavien-Dindo grade 2 or higher events occurred in 19.8% of W-I subjects and 34.7% of W-II subjects (p = .4680). One W-I subject (0.9%) and 6 W-II subjects (5.9%) required postoperative blood transfusion (p = .0517).

CONCLUSIONS: Aquablation clinically normalizes outcomes between patients with a 30cc to 80cc prostate and patients with an 80cc to 150cc prostate treated for LUTS/BPH with an expected increase in the risk of complication. It is effective in patients with large prostate glands (>80cc) with acceptable complications.

Submitted on behalf of the WATER and WATER II authors.