



# Factors associated with acute retention of urine (AROU) after MRI-US fusion biopsy

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**Objective:** MRI-US fusion biopsy, compared to TRUS biopsy, has a higher detection rate for prostate cancer. However, our early experiences showed that it was associated with a higher post-biopsy AROU. This study aims to investigate the factors associated with AROU after MRI-US fusion biopsy.

**Patients & Methods:** Patients who underwent MRI-US fusion biopsies under general anesthesia between February 2019 and June 2022 in Tseung Kwan O Hospital were retrospectively reviewed. Patient demographic, past medical history, operation information and histopathological results were analyzed. Independent samples *t* test and Chi square tests of independence were used for analysis, with significant difference defined as  $p \leq 0.05$ .

**Results:** Eighty-one patients who underwent MRI-fusion prostate biopsy under general anesthesia were included, of which 50.6% had additional peri-prostatic nerve block. Post-biopsy AROU rate was 19.8% (16/81). Prostate size was significantly larger in the retention group (mean 88.2cc vs 63.8cc,  $p = 0.004$ ). Age, operation duration, number of cores taken, use of alpha blocker, and history of AROU all did not show statistically significant correlation to post-biopsy AROU. Those who received additional peri-prostatic nerve block generally suffered less AROU, but the difference failed to reach statistical significance (AROU rate in LA vs non-LA group: 14.6% vs 24.3%,  $p = 0.247$ ).

**Conclusion:** Prostate size is the only statistically significant association factor for post-biopsy retention of urine. Use of peri-prostatic block may reduce the risk probably due to less post-biopsy pain.

	All patients (n = 81)	Non-AROU group (n = 65)	AROU group (n = 16)	Difference (p)
Mean age	67.4	67.0	69.0	0.158
Mean operation time (min)	50.2	49.3	53.8	0.266
Mean prostate size (ml)	68.6	63.8	88.2	0.004
Mean number of cores taken	28.1	28.0	28.4	0.631

Table 1: demographics and clinical parameters comparison

	Yes	No	Significance (p)
<b>On alpha blocker</b>	n=56	n=25	
AROU rate	21.4% (12/56)	16.0% (4/25)	0.576
<b>History of AROU</b>	n=6	n=75	
AROU rate	33.3% (2/6)	18.7% (14/75)	0.392
<b>Use of periprostatic nerve block</b>	n=41	n=40	
AROU rate	14.6% (6/41)	24.3% (10/40)	0.247

Table 2: past medical history and operative characteristics comparison

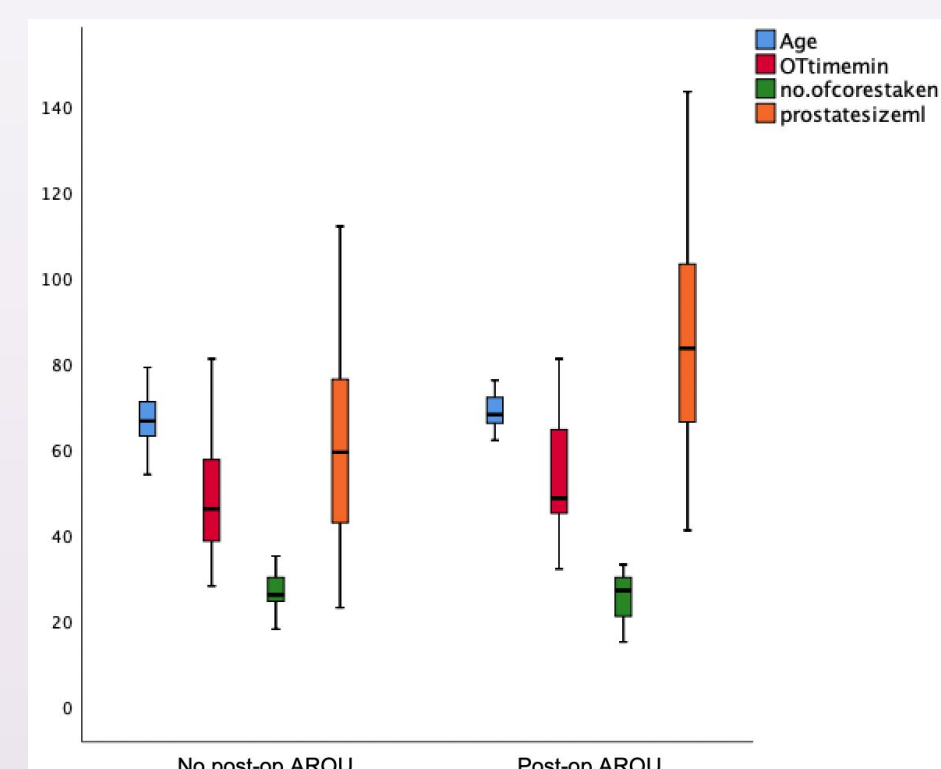


Figure 1. Demographics and clinical parameters comparison

