

# The preoperative dyslipidemia and high overactive bladder symptom score predict de novo overactive bladder after robot-assisted radical prostatectomy

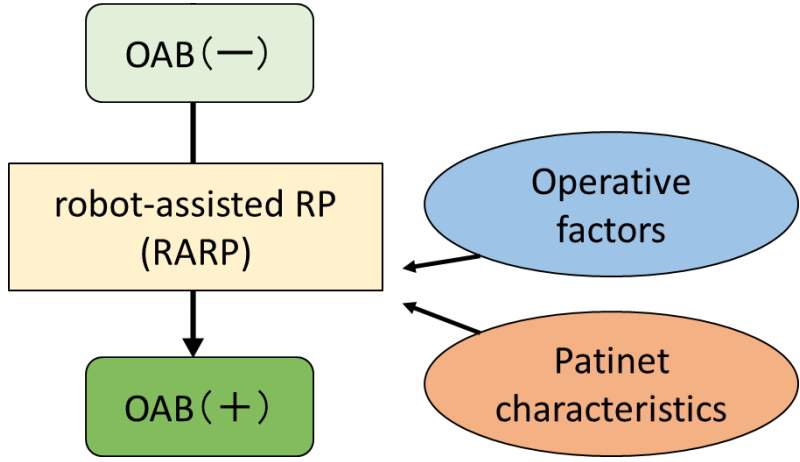
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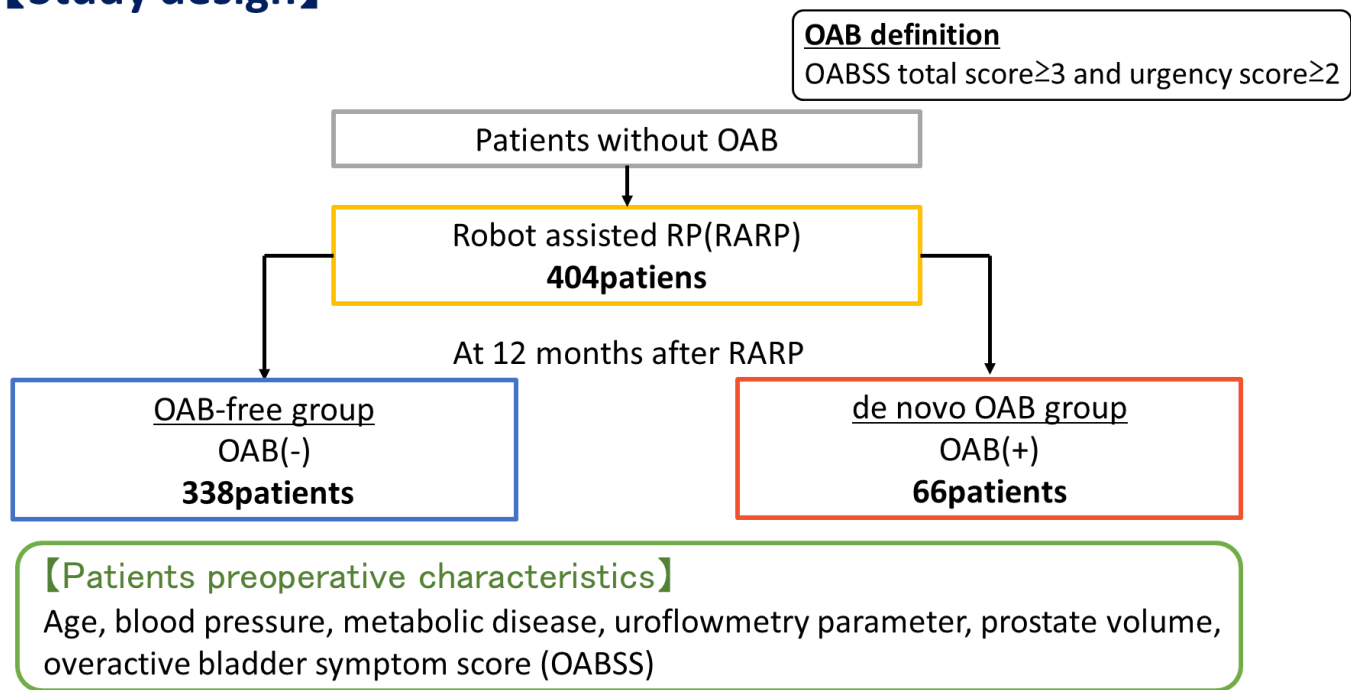
## Introduction

Overactive Bladder (OAB) is a nonspecific storage symptom complex with poorly defined pathophysiology. OAB have a negative impact on quality of life. Some patients have de novo OAB after robot-assisted radical prostatectomy (RARP). Although the operative procedure is one cause of de novo OAB after RARP, it is possible that the preoperative characteristics of the patient contribute to onset of de novo OAB after RARP. This study aims to determine whether the preoperative characteristics of the patients affect the de novo OAB after RARP.



## Methods and Materials

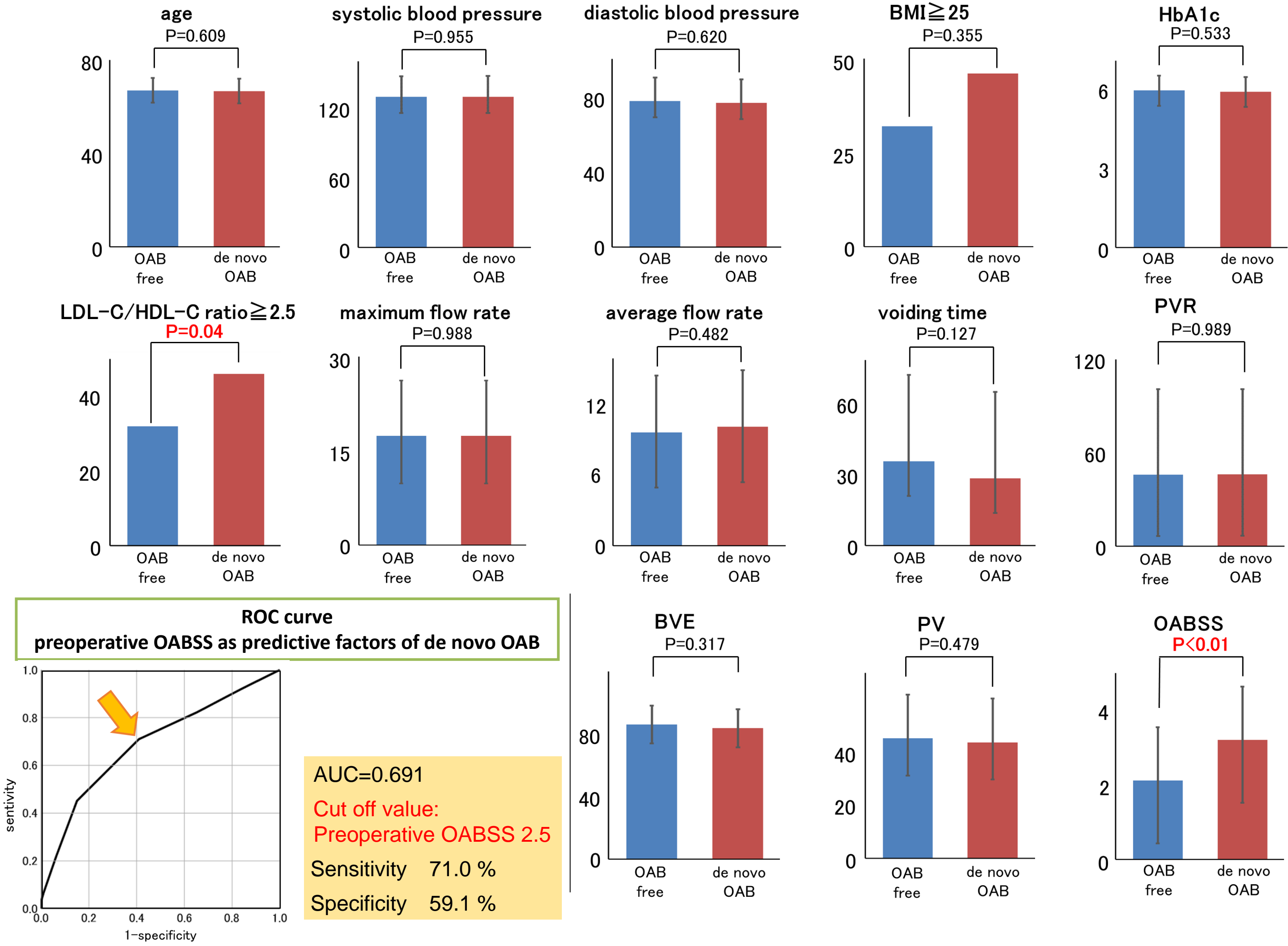
### 【Study design】



Patients without OAB who underwent RARP for localized prostate cancer at our hospital between February 2013 and October 2020 were included in this study. At 12 months after RARP, these patients were divided into the OAB-free group and de novo OAB group according to absence or presence of OAB. The preoperative age, systolic blood pressure, diastolic blood pressure, obesity (BMI  $\geq 25$  kg/m<sup>2</sup>), dyslipidemia (LDL-C/HDL-C ratio  $\geq 2.5$ ), HbA1c, uroflowmetry parameter, post-void residual urine volume (PVR), bladder voiding efficiency (BVE); (voided volume/total bladder capacity)  $\times 100$ , prostate volume (PV) and overactive bladder symptom score (OABSS) were compared between the OAB-free group and de novo OAB group. All values were expressed as mean  $\pm$  standard deviation. Mann–Whitney U test was used for analysis of categorical variables, and linear regression analysis was used for continuous variables. P-values of  $<0.05$  were considered to be statistically significant.

## Results

A total of 404 patients ( $67.0 \pm 5.3$  years) entered the study (OAB-free group: 338 patients, de novo OAB group: 66 patients). The percentage of patients with dyslipidemia was significantly higher in the de novo OAB group than in the OAB-free group (OAB-free group vs de novo OAB group: 32.0 % vs 45.5 %,  $P=0.04$ ). The total OABSS was significantly higher in the de novo OAB group than in the OAB-free group (OAB-free group vs de novo OAB group:  $2.1 \pm 1.4$  points vs  $3.2 \pm 1.6$  points,  $P<0.01$ ). A cut off value of preoperative OABSS 2.5 offered the optimal accuracy in receiver operating characteristics analysis. The preoperative age, blood pressure, obesity, HbA1c, uroflowmetry parameter, PVR, BVE and PV were not significant differences between two groups.



## Conclusions

- The preoperative dyslipidemia (LDL-C/HDL-C ratio  $\geq 2.5$ ) and high OABSS (OABSS  $\geq 2.5$ ) were one cause of de novo OAB after RARP.
- Elevated LDL-C/HDL-C ratio is associated with progression of atherosclerosis. The atherosclerosis is well known to cause OAB by chronic bladder ischemia.
- The patients with preoperative high OABSS might have bladder instability although they were not diagnosed as OAB. After RARP, the bladder instability might become worse, resulting in de novo OAB.
- The preoperative dyslipidemia and high OABSS may be useful marker of de novo OAB after RARP.

## References

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2. Martin S, et al: Risk factors for progression of improvement of lower urinary tract symptoms in a prospective cohort of men. J Urol. 2014;191:130-7