

## SC21

### Is Greenlight laser photoselective vaporization of the prostate a safe technique? Results from a wide monocentric series complications analysis, with a focus on postoperative fever and sepsis

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**Aim of the study:** GreenLight laser Photoselective Vaporization of the Prostate (PVP) is an effective surgical treatment for Benign Prostatic Hyperplasia (BPH). Moreover, its high coagulative power makes GreenLight reliable in high-risk patients (pts). Despite this, post-operative complications still represent a source of concern when surgery is performed in the most fragile pts. The aim of our study was to retrospectively review a large cohort of pts underwent GreenLight PVP and perform a complications analysis, with a focus on post-operative fever and sepsis.

**Materials and methods:** From 01/2015 to 12/2017, 288 PVPs were performed in a single centre in Turin (Città della Salute e della Scienza, ospedale Molinette). A complete retrospective review of clinical, surgical and follow-up data was carried out for all pts, focusing on post-operative complications. All pts were treated under spinal anesthesia, with an XPS 180 Watt GreenLight laser. A pre-operative urine culture was collected in all cases. When positive, antibiogram based, antibiotic therapy was prescribed before the intervention. Moreover, all pts received antibiotic prophylaxis at the time of surgery. We divided post-operative complications in: immediate, if they occurred in the first 24 hours after the intervention, or late, if their onset took place from the 2nd to the 90th postoperative day. We graded complications' severity according to the Clavien-Dindo classification. Subsequently, an analysis of predictors for both immediate and late complications was carried out. Statistics: univariate and multivariate logistic regression. Software: STATA.

Table 1: baseline characteristics of included patients.

Age, median (IQR)	72 (67–77)
Smoking (%)	30 (10,4)
Diabetes (%)	46 (15,9)
Hypertension (%)	163 (56,5)
Previous cardiological disease (%)	138 (47,9)
IRC (%)	13 (4,5)
Antiplatelet/anticoagulant therapy (%)	149 (51,7)
CV before surgery (%)	119 (41,3)

Table 2: immediate and late complications divided according to their type. Immediate complications: onset within 24 hours from the intervention. Late complications: onset within 3 months from the intervention.

Complication type	Immediate, n	Late, n
Acute urinary retention	6	24
Fever	13	11
Sepsis/septic shock	1	1
Hematuria	13	42
Cardiological complication	3	2
Urethral stenosis	-	4

**Results:** Patients' median (IQR) age was 72 (67–77) years. Baseline characteristics of the sample are described in Table 1. Remarkably, 119 (41,3%) pts were indwelling catheter carriers. An immediate complication occurred in 35 (12,2%) pts. According to the Clavien-Dindo classification, immediate complications were distributed as follows: 20 (57,1%) grade 1; 11 (31,4%) grade 2; 3 (8,6%) grade 3; 0 (0%) grade 4; 1 (2,9%) grade 5. An immediate fever was reported in 13 pts (37,1%). Moreover, we registered one case of severe, urinary septic shock which hesitated in patient's death. Late complications occurred in 77 (26,7%) pts: 44 (57,1%) grade 1; 23 (29,9%) grade 2; 10 (13%) grade 3; 0 (0%) grade 4; 0 (0%) grade 5. The multivariate analysis failed to identify

general predictors of immediate or late complications. On the other hand, it revealed the indwelling catheter as a predictor of immediate postoperative fever, when this was analysed separately (OR 4.18; 95% IC 1.09–15.96;  $p = 0.036$ ; accuracy 74,2%).

**Discussion:** GreenLight PVP can be considered a safe treatment for BPH, as underlined by the limited incidence and the usually low severity of its postoperative complications. Among these, anyway, urinary infections still represent a critical issue, due to their potential risk of progression to a severe and life-threatening disease.

## SC22

### Comparison between Open, Laparoscopic vs Robotic simple prostatectomy in a real-life settings: Analysis of trifecta outcomes

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**Aim of the study:** In the past years, minimally invasive surgical techniques for the treatment of benign prostatic hyperplasia have been introduced. Open prostatectomy (OP) is still the most effective treatment for BPH, however it is as well the most invasive. To overcome the limitations of OP, robotic/laparoscopic simple prostatectomy has been recently introduced. Aim of our study is to analyse outcomes and safety of open, laparoscopic and robotic simple prostatectomy.

**Materials and methods:** A consecutive series of men with lower urinary tract symptoms and large prostates (>80 cc) undergoing laparoscopic (LSP), robotic (RASP) or open simple prostatectomy (OSP) were enrolled between January and September 2018 in three centers. Outcomes were evaluated considering the trifecta favourable outcome which was defined as reported in the literature as a combination of the following items: (1) no perioperative complications, (2) postoperative IPSS <8, and postoperative Qmax >15 ml/s. Complications were evaluated according to the modified Clavien classification system. Univariate and multivariate binary logistic regression was performed to identify predictors of a positive trifecta outcome. Predictive accuracy was assessed with L-ROC.

**Results:** Overall 159 patients were prospectively enrolled (32 Robotic, 66 Laparoscopic, 61 open). Preoperative characteristics are described in table 1. IPSS, Qmax significantly improved in all the three groups (table 1) when compared to baseline ( $p < 0.001$ ). The overall complication rate was 10/61 (16%) for OSP, 6/66 (9%) for LSP and 3/32 (9%) for RSP, however most of the complications were low grade complications according to modified Clavien-Dindo classification (Grade  $\leq 2$ ). Overall, 51/66 (77%) of the patients presented a positive trifecta outcome after LSP, 24/32 (75%) after a RASP and 49/61 (80%) after OSP;  $p = 0.517$ . On multivariate analysis, adjusted for ASA score, only Age (OR: 0.88; CI: 0.79–0.97,  $p = 0.014$ ), and preoperative symptoms (OR: 0.86, CI: 0.75–0.98,  $p = 0.028$ ) were independent predictors of positive trifecta outcome. The multivariable model has a predictive accuracy of 0.84.

Table 1: Preoperative characteristics and outcomes of the three groups

	OSP	LSP	RSP	p <sup>1</sup>	p <sup>2</sup>	p <sup>3</sup>
Age (years)	70 (65/76)	68 (63/73)	67 (63/72)	0,203	0,471	0,117
Preop PSA (ng/ml)	8 (5/14)	4 (3/8)	6 (4/8)	0,001	0,021	0,197
Prostate Volume (cc)	104 (91/123)	120 (92/140)	101 (85/118)	0,053	0,254	0,024
Preop IPSS	18 (14/18)	20 (18/22)	33 (27/33)	0,020	0,001	0,001
Preop Qmax ml/s	7 (5/10)	9 (6/12)	8 (7/8)	0,186	0,073	0,833
Postop Qmax ml/s	20 (18/28)	24 (19/31)	23 (21/27)	0,220	0,651	0,170
Postop IPSS	5 (3/6)	3 (2/6)	2 (1/3)	0,102	0,026	0,145
Positive Flow Outcome	59/61:96%	58/66:88%	32/32:100%	0,065	0,040	0,300
Positive Symptom Outcome	60/61: 98%	63/66: 95%	26/32: 81%	0,092	0,022	0,001
No complications	51/61: 83%	60/66: 91%	30/32: 93%	0,215	0,232	0,166
Trifecta	49/61: 80%	51/66:77%	24/32:75%	0,176	0,803	0,552

Data are presented as median (Interquartile range); Mann Whitney test: p<sup>1</sup>OSP vs LSP, p<sup>2</sup>OSP vs RSP, p<sup>3</sup>LSP vs RSP