

HOLEP vs Bipolar TURP as Same Day Surgery: Analysis of Length of Stay and Costs

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HOLEP vs Bipolar TURP as Same Day Surgery: Analysis of Length of Stay and Costs

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Introduction

- Bipolar transurethral resection of the prostate (bTURP) and holmium laser enucleation of the prostate (HOLEP) are the standards of care for the surgical management of BPH
- Studies regarding bTURP and HOLEP have shown comparable outcomes with HOLEP having higher direct costs, almost doubling bTURP costs¹
- Costs are a barrier to HOLEP introduction
- We assessed the potential of these cases as same-day surgery
- Length of stay was investigated as a potential source of cost savings in a community hospital-based setting

Methods

- We performed a retrospective review of our prospectively collected database of 75 consecutive HOLEP and bTURP patients each from a single provider
- Patients were managed via same post-operative care pathway at a community hospital.
- Pathway included 2 hours of bladder irrigation post-operatively followed by a clamping trial and ambulation with catheter
- Patients were discharged home with the catheter when clinically appropriate
- Pre-operative, perioperative, and post-operative outcomes (Length of Stay, IPSS, PVR, Qmax, operative time, operational costs) were assessed via chart review.
- Length of stay and direct operating room costs were assessed for each procedure
- Hospital adjusted expenses were sourced from the Henry J. Kaiser Family Foundation statistics²
- Patients were excluded if: loss of follow up with in-network urology, incomplete Uroflow/PVR/IPSS data, or death (HOLEP 13/75, bTURP 14/75 were excluded).

Results

- HOLEP patients had significantly increased preoperative prostate volumes, longer operative times, higher preoperative PSAs, and preoperative PVRs
- HOLEP patients had higher operative costs: \$806 vs \$452
- HOLEP patients had a significantly shorter length of stay: 11.3 vs 18.4 hrs
- 81% of HOLEP patients were able to be discharged same day vs 57% of bTURP. Based on the USA average daily cost of hospitalization of \$2,271, a 7.1 hour reduction in LOS between bTURP and HOLEP would save \$671/case
- On 3-month follow-up, HOLEP outperformed bTURP in PVR and Qmax improvement
- IPSS improvement was similar between the two at 3-month follow up

Table 1: Comparison of baseline characteristics, intra-operative characteristics, and post-operative characteristics between same day HOLEP and bTURP

Baseline Characteristics	HOLEP	TURP	Difference	P-values
Age	69.03	67.09		
Prostate Volume (g)	116.22	60.35		
PSA	6.50	3.92		
IPSS	17.93	21.24		
Bother Score	3.77	4.61		
Max (mL/s)	6.19	7.22		
PVR (mL)	370.04	169.00		
Perioperative Characteristics				
Length of Stay (hr)	11.28	18.38	-7.10	0.001
% with Same-Day Discharge	81%	57%	0.24	
Total Operational Costs	\$806.64	\$452.01	\$354.63	
Operative Time (hours)	11.30	18.40		<0.001
Post-Op Characteristics				
3 Month ΔIPSS	-10.00	-9.26	-0.74	0.730
3 Month ΔPVR	-292.23	-105.98	-186.25	0.005
3 Month ΔQmax	11.20	4.91	6.29	0.050

Conclusions

- At 3 months post-op, HOLEP patients had greater improvements in PVR and Qmax than bTURP patients
- With a uniform post-op same-day care pathway, HOLEP outperforms bTURP in terms of length of stay although both can be safely done as a day procedure
- Potential savings from length of stay more than offsets the higher fixed costs associated with HOLEP
- Total costs for HOLEP compared to bTURP when factoring in savings from decreased LOS, suggest HOLEP may be a more cost effective surgical treatment for BPH

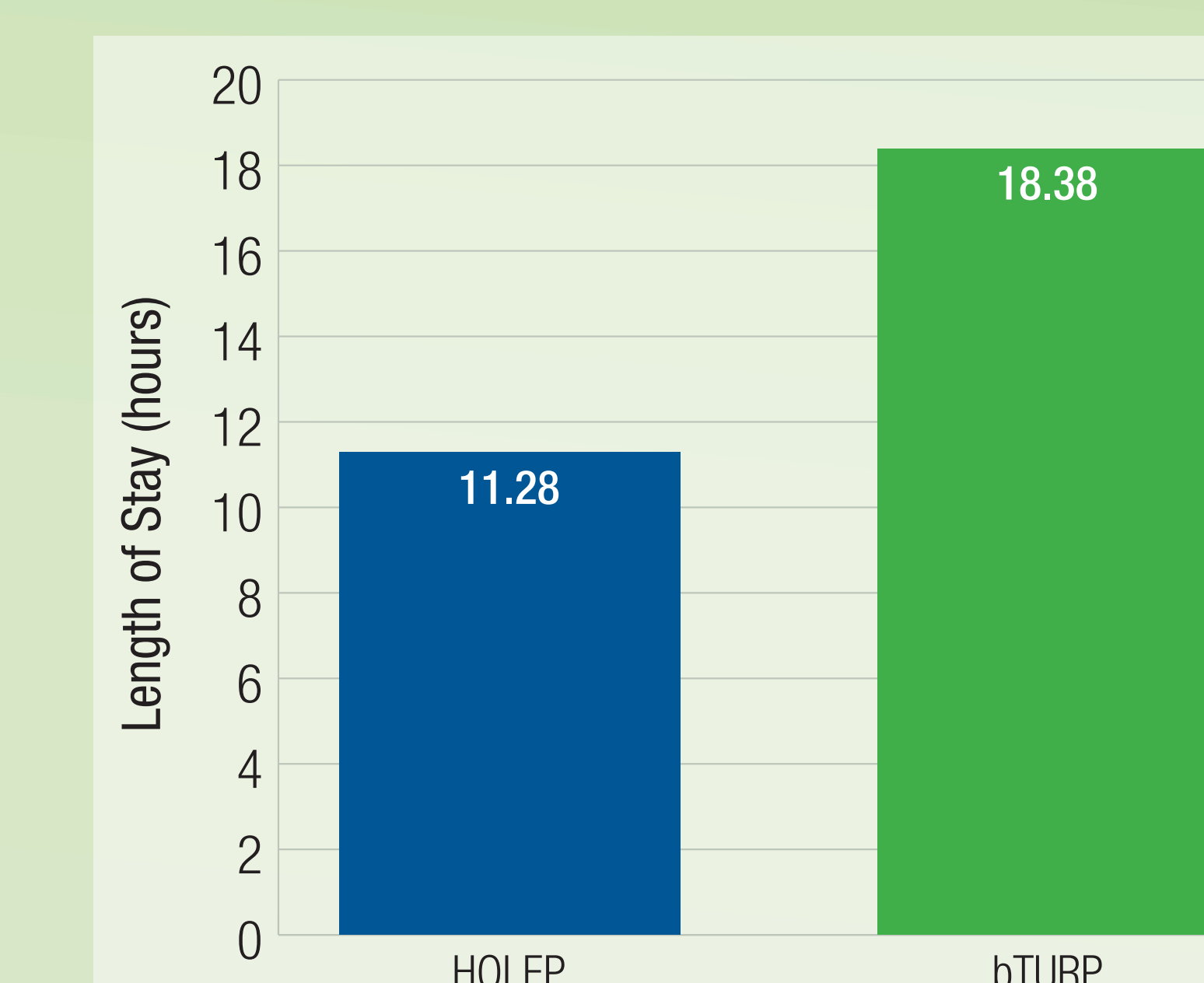


Figure 1: Comparison of length of stay between same-day HOLEP and bTURP

7.1 HOURS
bTURP REDUCTION
IN LENGTH OF STAY

\$671.00
bTURP
SAVED PER CASE

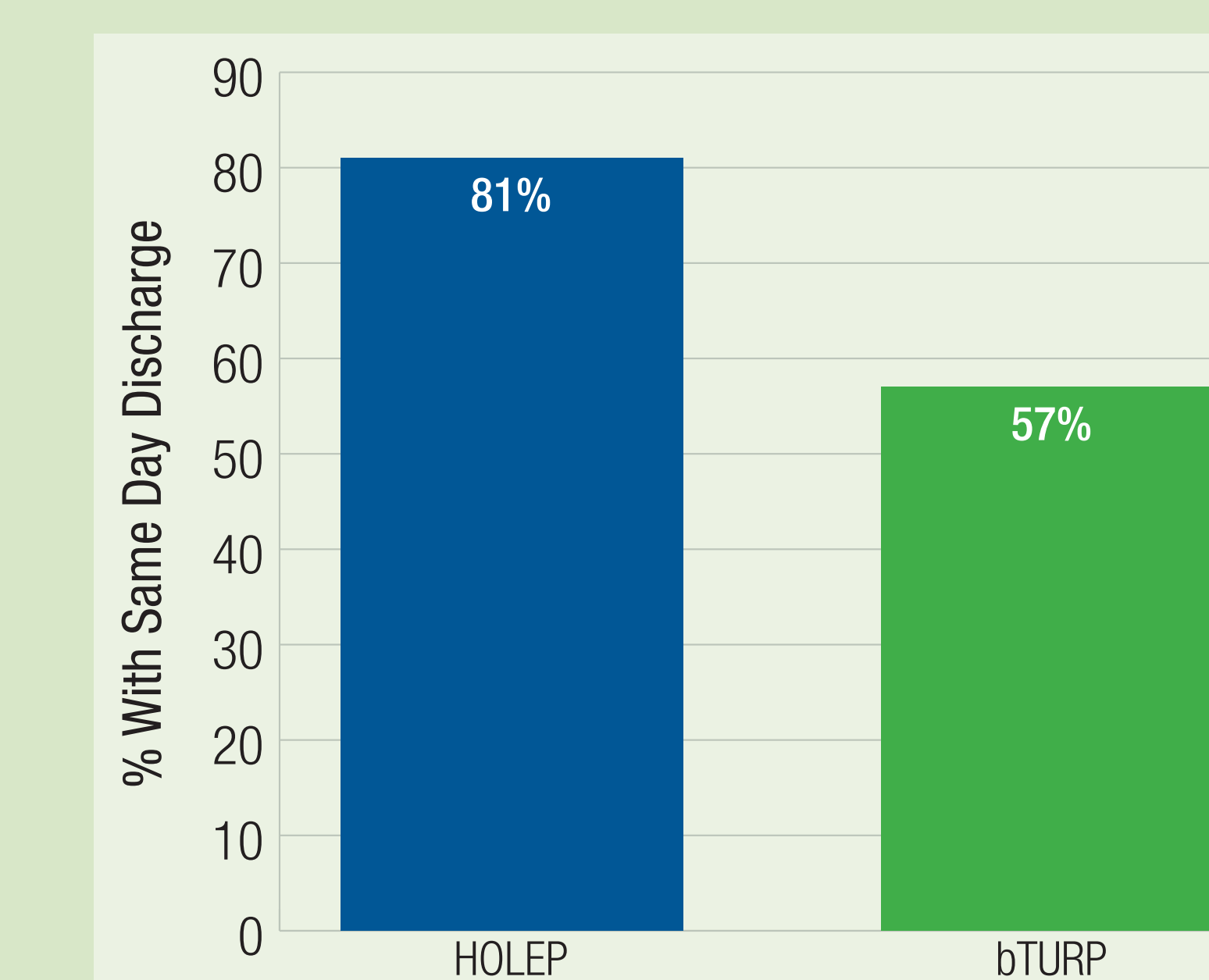


Figure 2: Comparison of percent of patients with same-day discharge between same-day HOLEP and bTURP

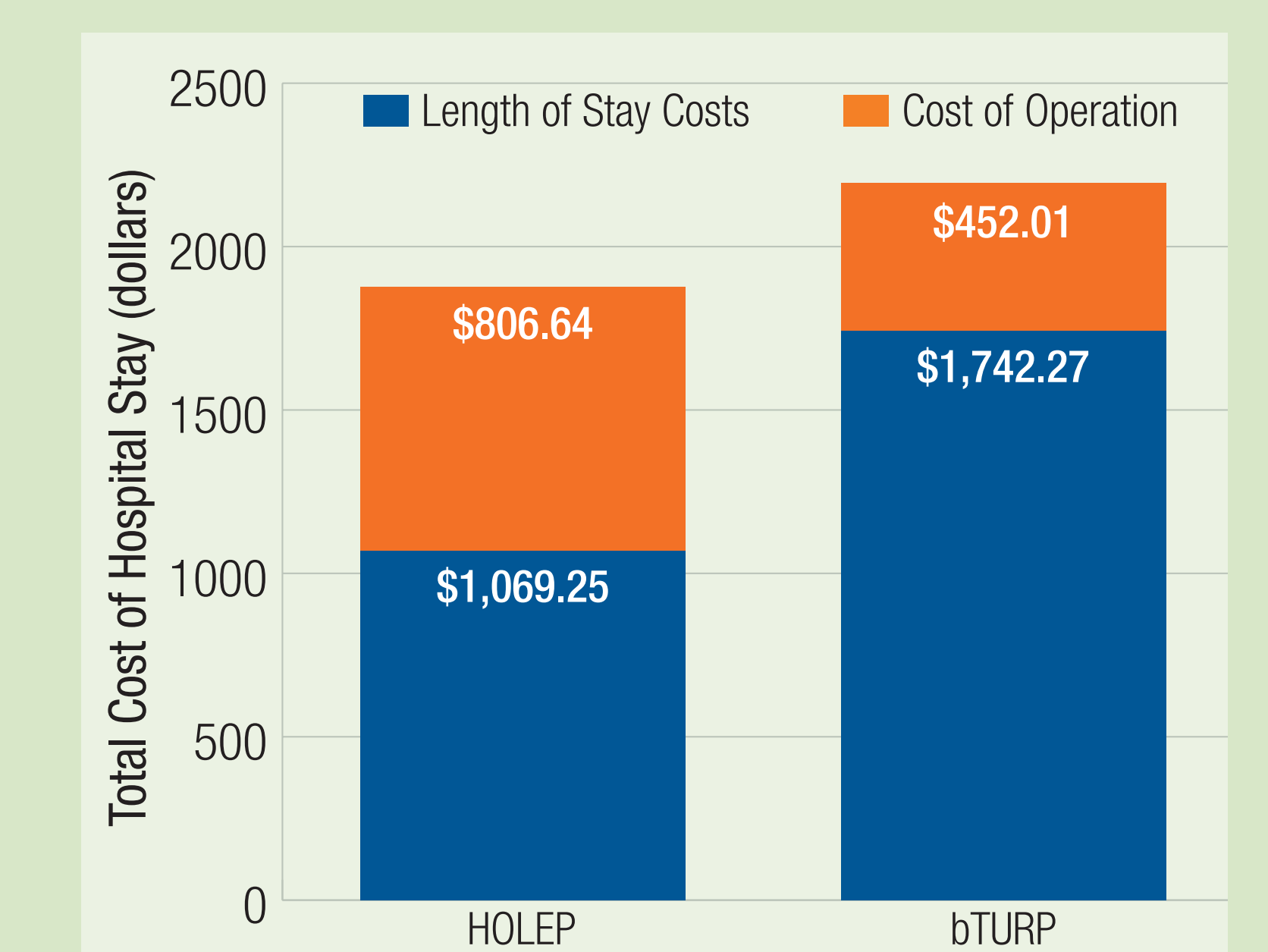


Figure 3: Stacked Comparison of Total Cost of Hospital Stay with operation and length of stay costs between same-day HOLEP and bTURP

Citations

- ¹Amr S. Fayad, Mohamed G. El Sheikh, Tamer Zakaria, Hazem A. Elfotouh, and Rageb Alsergany. *Journal of Endourology*. Aug 2011. ahead of print <http://doi.org/10.1089/end.2011.0059>
- ²Gill BC, Ulchaker JC. Costs of Managing Benign Prostatic Hyperplasia in the Office and Operating Room. *Curr Urol Rep*. 2018;19(9):72.