

MP8-18 Micro-costing analysis demonstrates comparable costs for Lithovue versus reusable flexible ureteroscope use

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Introduction & Objective: Reusable ureteroscope durability and need for repair are significant sources of expense and inefficiency for patients and urologists. Utilization of LithoVue™ (Boston Scientific), a disposable flexible digital ureteroscope, may address some of these concerns. To identify its economic impact on clinical care, we performed a micro-cost comparison between flexible reusable fiberoptic ureteroscopes (URF-P6™: Olympus) and LithoVue™.

Materials and Methods: For this prospective, single-center micro-costing study, all consecutive ureteroscopies performed during one week each in July and August 2016 utilized either URF-P6™ or LithoVue™ ureteroscopes respectively. Workflow data were collected, including intraoperative events, post-operative reprocessing cycle timing, consumables usage, and scope cost data.

Results: Intraoperative data analysis showed mean total operating room time for URF-P6™ and LithoVue™ cases were 93.4 ± 32.3 and 73.6 ± 17.4 minutes, respectively ($p=0.093$). Mean cost of operating room usage per case was calculated at $\$1,618.72 \pm 441.39$ for URF-P6™ and $\$1,348.64 \pm 237.40$ for LithoVue™ based on institutional cost rates exclusive of disposables. Postoperative data analysis revealed costs of $\$107.27$ for labor and consumables during reprocessing for URF-P6™ cases. (Table 1) The costs of scope repair and capital acquisition for each URF-P6™ case were $\$957.71$ and $\$116.02$, respectively. The total ureteroscope cost per case for URF-P6™ and LithoVue™ were $\$2,799.72$ and $\$2,852.29$, respectively. (Figure 1)

Conclusions: Micro-cost analysis revealed that the cost of LithoVue™ acquisition is higher per case compared to reusable fiberoptic ureteroscopes, but savings are realized in labor, consumables, and repair. When accounting for these factors, the total cost per case utilizing these two scopes were comparable.

Table 1. Comparison of labor time and cost, supply and consumable cost between reusable (URF-P6™) and disposable (LithoVue™) flexible ureteroscopes.

	URF-P6™ reprocessing				LithoVue™ disposing		
	time	labor cost	supply cost	consumable cost	time	labor cost	cost
cable/scope decontamination	20.9 min	\$16.13	\$9.93	\$0.80	move to recycle bin	4.4 min	\$3.39
scope cleaning and quality check	19.6 min	\$15.12	\$5.38	\$8.56	dispose to trash bin	0.3 min	\$0.26
cable/scope assembly	6.5 min	\$5.05	\$3.03	\$1.49			
cable/scope sterilization	10.3 min	\$7.93	\$0.17	\$22.02			
total time	57.2 min				total time	4.7 min	
total cost		\$44.23	\$51.38		total cost		\$3.65

min. = minutes. Costs (\$) are shown in U.S. dollars.

Figure 1

