



## Words of Wisdom

### Re: Single-use Versus Reusable Ureterorenoscopes for Retrograde Intrarenal Surgery (RIRS): Systematic Comparative Analysis of Physical and Optical Properties in Three Different Devices

Deininger S, Haberstock L, Kruck S, et al

World J Urol 2018;36:2059–63

#### Experts' summary:

The authors assessed the technical and optical properties of three flexible digital ureteroscopes: two single-use devices (Boston Scientific Lithovue and Pusen Uscope UE3011) and one reusable device (Storz Flex C). They performed a comparative study in vitro and in fresh porcine cadaveric kidney models with a focus on flow rates and intrarenal pressures with empty working channels and after insertion of various devices such as stone baskets and laser fibers. Light intensity was assessed and user satisfaction was evaluated via a dedicated questionnaire focusing on image quality. Overall, the results demonstrate that the reusable device displayed better technical and optical characteristics, including significantly higher light emission. Intrarenal pressures favored the reusable device, with maximum flexion ability after device insertion in the working channel slightly better in the single-use devices. In terms of subjective optical properties, the satisfaction score was higher for the reusable device.

#### Experts' comments:

Flexible ureteroscopy is continuously evolving and single-use devices are currently replacing reusable ones in many centers. The authors of this in vitro study demonstrated that single-use devices displayed high-level characteristics, although their optical value was slightly lower than that of reusable devices. Nevertheless, the overall quality of single-use devices was excellent and nearly equal to that of reusable devices, although some characteristics were slightly inferior.

Recently, Legemate et al. [1] demonstrated in a durability clinical study that the median number of procedures with a digital reusable ureteroscope was 27. Nevertheless, the

current cost-effectiveness of single-use devices remains unfavorable at a purchase price between €800 and €1000, and Martin et al. [2] showed that single-use devices would be of interest only in centers performing low case volumes.

However, the risk of persistent contamination of reusable devices after sterilization is a concern. Ofstead et al. [3] demonstrated substantial stigmata of contamination in association with various other abnormalities in reusable ureteroscopes. This study questions the quality and effectiveness of reprocessing of reusable devices and this important point could be an additional argument in favor of single-use devices in the near future.

The overall quality of single-use devices is now close to that of reusable devices, and it is not unreasonable to assume that they will progressively replace the latter in most centers, and all the more quickly if their price decreases below an economically favorable threshold.

**Conflicts of interest:** The author has nothing to disclose.

#### References

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- [3] Ofstead CL, Heymann OL, Quick MR, et al. The effectiveness of sterilization for flexible ureteroscopes: A real-world study. *Am J Infect Control* 2017;45:888.

Paul Meria\*

St-Louis hospital, department of urology, 1 avenue Claude Vellefaux, Paris, France

\*St. Louis Hospital of Urology, 1 Avenue Claude Vellefaux, Paris 75475, France.

E-mail address: [paul.meria@sls.aphp.fr](mailto:paul.meria@sls.aphp.fr).

<https://doi.org/10.1016/j.eururo.2019.02.037>

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