P102 Is the introduction of single use flexible ureteroscopes capable of preventing reusable scopes breakages? Results from a high-volume center

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Ventimiglia E.[1], Doizi S.[2], Quadrini F.[2], Pauchard F.[2], Villa L.[1], Kamkoum H.[2], Traxer O.[2]

[1]IRCCS Ospedale San Raffaele, Division of Experimental Oncology/Unit of Urology; URI, Milan, Italy, [2]Hopital Tenon, Dept. of Urology, Paris, France

Introduction & Objectives: Single-use flexible ureteroscopes (SUfURS) have clear advantages in terms of availability, sterility, and lack of maintenance costs compared to reusable flexible ureteroscopes (fURS). We aimed to assess whether the introduction of SUfURS at our high-volume center had an advantageous impact on the turn-over and breakage rates of reusable fURS.

Materials & Methods: We retrospectively analyzed data related to reusable fURS (URF-P5 and URF-V, Olympus, Japan) number of usages and breakages at our center between February 2015 and December 2018. We kept track of the number of usages for each analyzed scope between the first usage until a breakage requiring reconditioning was recorded. Usage count was restarted following reconditioning. Since SUfURS (Lithovue, Boston Scientific, USA), were introduced and routinely employed at our center in September 2016, we had the chance of comparing different reusable ureteroscope life cycles according to both SUfURS availability and usage intensity (i.e. number of SUfURS used during each reusable fURS life cycle). We then graphically explored the relationship between SUfURS usage intensity and reusable scopes survival (i.e. number of utilizations before any breakage requiring reconditioning) using locally weighted scatterplot smoothing (LOWESS) approach. Moreover, we used Poisson regression model in order to estimate relative risks (RR) for reusable scope survival according to single-use scope usage intensity.

Results: During the analyzed time frame, 5 different fURSs (4 URF-P5 and 1 URF-V) were employed at our center, for a total of 1820 usages and 40 breakages requiring reconditioning. Median (interquartile range, IQR) number of usages before breaking was 38 (25-51) overall. A total of 98 SUfURS were used during the study period. After SUfURS introduction, median (IQR) reusable fURS number of usages increased from 28 (19-46) until 45 (34-59), (+62%, p=0.01). The graphical relationship between SUfURS usage intensity and reusable scopes survival showed a linear survival increase after 10 or more SUfURS scopes were used per each life cycle. At Poisson regression analysis, the SUfURS usage intensity was positively associated to increased reusable fURS survival, RR (95% CIs) 1.02 (1.01-1.03), p<0.001.

Conclusions: Life-time cycle of reusable fURS increased by 62% after the introduction of SUfURS. Ten or more used SUfURS per life cycle were associated to increased fURS survival.