Abstract
Introduction of retrograde flexible ureteroscopy represented a leap forward in upper urinary tract endourology. Nowadays, areas of the pyelocaliceal system accessible otherwise only by percutaneous or open surgery, can be approached in a retrograde fashion, using the anatomical pathways. The flexible ureteroscopes evolved from the limited deflectable first generation ones to the digital very maneuverable models. The ancillary instruments and the energy sources underwent a similar evolution. Flexible ureteroscopy is a very useful investigative method, especially in patients with equivocal data provided by the imaging. Introduction of this procedure decreased significantly the number of cases with so called "essential" hematuria. The conservatively treated upper urinary tract tumors can be also followed-up more efficiently, the recurrence being identified before becoming radiological obvious. Initially reserved only for diagnostic purposes, flexible uretero-pyeloscopy may be used also in the treatment of various pathological conditions of the upper urinary tract such as lithiasis, stenosis, tumors, pyelocaliceal abnormalities etc. However, technical limitations regarding the visibility and access are still influencing the outcome of the method. The characteristics of the available flexible endoscope, and how they are influenced by the used energy sources and ancillary instruments is crucial for achieving the best performances. Also the particularities of the lesion and upper urinary tract anatomy have a significant impact over the flexible ureteroscopic approach. Despite the already achieved efficacy, the technological progress may still allow various improvements of the method, including robotic flexible ureteroscopy.

Keywords
Diverticulum, Deflection, Durability, Flexible ureteroscopy, Hematuria, Lithiasis, Pyelocalicial, Upper urinary tract, Urothelial tumors.