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UROLOGY-LETTER TO THE EDITOR

The safety of extracorporeal shock wave lithotripsy: an undervalued issue

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Extracoroporeal shock wave lithotripsy (SWL) with its characteristics—named the absence of anesthesia requirement, the outpatient basis and the substantial lack of severe immediate side effects—has been considered for decades the non-invasive treatment of urolithiasis [1].

However, in more recent years, SWL renown has been challenged by the widespread diffusion of endourology; together, as time goes by, some concerns on long-term safety of SWL have been raised as well. Hypertension and diabetes are regarded as possible long-term drawbacks, and their risk after SWL has been addressed by a recent manuscript from Fankauser et al [2]. Authors reported in 2018 on the prevalence of hypertension and diabetes—assessed with a questionnaire mailed in 2015—in a series of 764 patients treated with SWL between 1993 and 2013. Authors concluded that SWL of kidney stones was in general associated with higher prevalence of these side effects compared to control groups, even after adjusting for age and gender. Fankauser et al. should be recommended for the large series and the median follow-up of 13.7 years. However, the variability of time-lapse between the date of SWL treatment and the 2015 assessment could bother the quality of data analysis and interpretation; renal fibrosis and scarring as well as pancreatic damage—hypothesized as cause of secondary hypertension and diabetes—should require a supposed long time to exert their detrimental effect.

We would like to remark a further covariate to be pointed up. The matter of SWL safety—in terms of macroscopical or microscopical injury to tissues—cannot put aside from the modality of stone focusing. A radio-opaque renal stone can be targeted both with fluoroscopy and ultrasonography (US). Opposite to the former, US targeting of a renal stone allows the real time and continuous control of shock wave focal point and pathway; as a result, US checking may protect against the extensive injury to renal parenchyma or against the accidental damage to adjacent organs.

After a 16-year-old experience with Dornier Lithotripter S (GmBh, Germany) with most of the kidney stones focused with US, we reported on the safety of SWL both on the overall population [3] and considering apart the elderly subgroup [4]; an interim analysis on 100 subjects with 10-year follow-up after a renal SWL [5] found that the development of new onset hypertension or diabetes mellitus was unaffected by SWL and consistent with the incidence of the general population, matched for age group.

As a conclusion, we would like to underline that the long-term safety of SWL—based on a precise and monitored treatment together with a proper indication—can still be regarded as adequate and should not be forgotten even in the current era of multiple minimally invasive technologies available to treat urolithiasis.

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