

What's Up in Urology Journal, Summer 2012?

Urology for People is a section in the *Urology Journal* for providing people with a summary of what is published in this journal and describing urological entities in a simple language.

Important Note. The findings in medical papers are usually not directly applicable in clinical practice and patients should consult their physicians before any utilization of the results of medical studies.

EXTRACORPOREAL SHOCKWAVE LITHOTRIPSY

Lithotripsy (stone fragmentation) was developed in the early 1980s in Germany and came into widespread use with the introduction of the HM-3 lithotripter in 1983. Extracorporeal shockwave lithotripsy (SWL) uses high-energy shockwaves to break down a urinary stone (kidney and ureter) into small parts, which can more easily pass through the urinary tract and overtake from the body. After lithotripsy development, within a few years, SWL became a standard treatment of urinary stones. For stone fragmentation with SWL, the sedated patient lies down on the apparatus bed, with the back against a water-filled cushion placed at the level of the kidneys. To locate the stone, a fluoroscopic x-ray or an ultrasound imaging system is used. Then, high-energy sound waves pass through the body without injuring it and crack the stone into small pieces. Usually the procedure is done by a trained technician. The stone is positioned at a predefined focal point, like an optical lens. The treatment starts at the equipment's lowest power level and the power gradually increases to a desired level. The number of shock waves and treatments needed for fragmentation of stones depend upon their size and hardness. Up to 4000 shock waves are used until x-ray shows sufficient breakage.

Not all of the patients with kidney stone are candidate for SWL. Depending on the size, density, and position of your urinary stone, your doctor may recommend alternative treatment methods. Large stones are not good candidates for SWL. Sometimes, your doctor may prefer to perform SWL

even for large stones. In such situations, usually surgeon uses a stent. A stent is a small, short tube of flexible plastic that passes through the ureter into the kidney, which holds the ureter open. This helps the small stone fragments pass without blocking the ureter. After SWL, stone pieces usually pass in the urine in the next few days and cause pain. Sometimes, the produced pain is severe and needs analgesic prescription. If you have a larger stone, you may need more SWL sessions or auxiliary treatment modalities. Sometimes, smaller kidney stones move out of the kidneys into the ureters. The success of SWL for stone fragmentation of ureteral stones is much less than kidney stones. Extracorporeal shockwave lithotripsy can treat up to 90% of kidney and up to 70% of ureteral stones.

After SWL, you should drink as much water as practical to accelerate stone passage. Patients are also instructed to void through a stone screen in order to obtain stone fragments for future analysis. The following is a list of medications to avoid at least 7 to 10 days prior to SWL. These medications can alter platelet function or your body's ability to clot and therefore, make the patient susceptible to unwanted bleeding during and after SWL. Aspirin, Ibuprofen (Advil), Warfarin (Coumadin), Lovenox, Celebrex, Diclofenac (Voltaren), and Plavix. Do not stop any medication without contacting the prescribing doctor to get their approval. Extracorporeal shockwave lithotripsy is contraindicated in pregnancy. If you have heart pacemaker, tell your doctor.

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