

DISEASE MANAGEMENT II:

GENERAL RECOMMENDATIONS AND PRECAUTIONS FOR STONE REMOVAL

Antibiotic therapy:

Urinary tract infections should always be treated if stone removal is planned. In patients with clinically significant infection and obstruction, drainage should be performed for several days before starting stone removal. A urine culture or urinary microscopy should be performed before treatment

Recommendations	Strength rating
Obtain a urine culture or perform urinary microscopy before any treatment is planned.	Strong
Exclude or treat urinary tract infections prior to stone removal.	Strong
Offer peri-operative antibiotic prophylaxis to all patients undergoing endourological treatment.	Strong

Antithrombotic therapy and stone treatment:

Patients with a bleeding disorder, or receiving antithrombotic therapy, should be referred to an internist for appropriate therapeutic measures before deciding on stone management.

In patients with an uncorrected bleeding disorder, the following are at elevated risk of haemorrhage or perinephric haematoma (high-risk procedures): Shock Wave Lithotripsy (SWL), Percutaneous nephrolithotomy (PCNL), nephrostomy; laparoscopic surgery and open surgery.

Recommendations	Strength rating
Offer active surveillance to patients at high risk of thrombotic complications in the presence of an asymptomatic calyceal stone.	Weak
Decide on temporary discontinuation, or bridging of antithrombotic therapy in high-risk patients, in consultation with the internist.	Strong
Retrograde (flexible) URS is the preferred intervention if stone removal is essential and antithrombotic therapy cannot be discontinued since it is associated with less morbidity.	Strong

Obesity: A high body mass index (BMI) can pose a higher anaesthetic risk and a lower success rate after SWL and PCNL and may influence the choice of treatment.

Stone composition: Stones composed of brushite, calcium oxalate monohydrate, or cystine are particularly hard, as well as homogeneous stones with a high density. Percutaneous nephrolithotomy or Retrograde intrarenal surgery (RIRS) and ureteroscopy (URS) are alternatives for removal of large SWL-resistant stones.

Recommendations	Strength rating
Consider the stone composition before deciding on the method of removal, based on patient history, former stone analysis of the patient or Hounsfield unit on unenhanced computed tomography.	Strong
Attempt to dissolve radiolucent stones.	Strong

Contraindications of procedures:

Contraindications of extracorporeal SWL

- Pregnancy, due to the potential effects on the foetus
- Bleeding disorders, which should be compensated for at least 24 hours before and 48 hours after treatment
- Uncontrolled urinary tract infections (UTIs)
 - Severe skeletal malformations and severe obesity, which prevent targeting of the stone
- Arterial aneurysm in the vicinity of the stone
- Anatomical obstruction distal to the stone.

Contraindications of URS

Apart from general problems, for example with general anaesthesia or untreated UTIs, URS can be performed in all patients without any specific contraindications.

Contraindications of PCNL

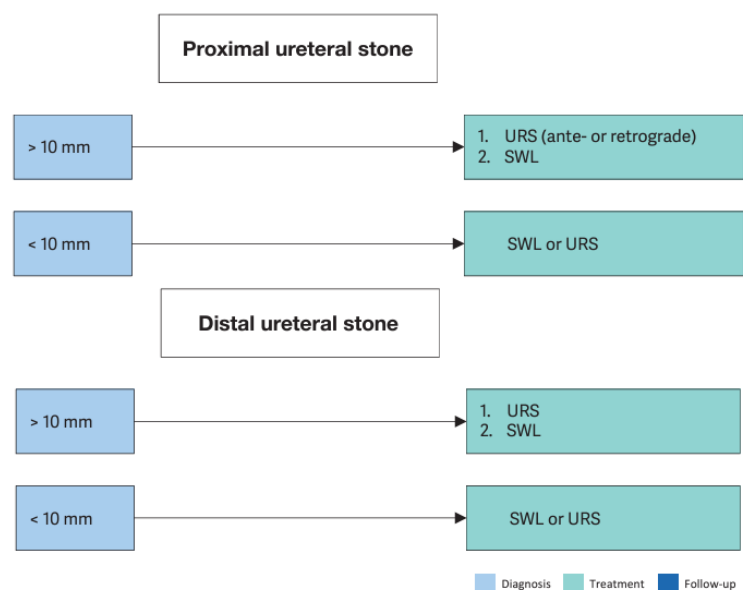
- Patients receiving anti-coagulant therapy must be monitored carefully pre- and post-operatively. Anti-coagulant therapy must be discontinued before PCNL.
- Untreated UTI
- Tumour in the presumptive access tract area
- Potential malignant kidney tumour
- Pregnancy

General contraindication for endourological procedures

Endourological interventions do not adversely affect renal function although care must be taken in those with poor pre-operative renal function, diabetes and hypertension. Patients with impaired renal function and stones, may in fact benefit from the procedure to preserve their renal function.

SPECIFIC STONE MANAGEMENT OF URETERAL STONES

- Observation is feasible in informed patients who develop no complications (infection, refractory pain, deterioration of renal function).
- Medical expulsive therapy seems to be efficacious for treating patients with ureteral stones who are amenable to conservative management.
- The greatest benefit might be among those with > 5 mm (distal) stones.
- Compared with SWL, URS was associated with significantly greater stone-free rates (SFRs) up to four weeks, but the difference was not significant at three months.
- Ureteroscopy was associated with fewer retreatments and need for secondary procedures, but with a higher need for adjunctive procedures, greater complication rates and longer hospital stay.
- In the case of severe obesity, URS is a more promising therapeutic option than SWL.



Recommendations	Strength rating
If active removal is not indicated (Section 3.4.9.3) in patients with newly diagnosed small* ureteral stones, observe patient initially with periodic evaluation.	Strong
Offer α -blockers as medical expulsive therapy as one of the treatment options for (distal) ureteral stones > 5 mm**.	Strong
Inform patients that ureteroscopy (URS) has a better chance of achieving stone-free status with a single procedure.	Strong
Inform patients that URS has higher complication rates when compared to shock wave lithotripsy.	Strong
Use URS as first-line therapy for ureteral (and renal) stones in cases of severe obesity.	Strong