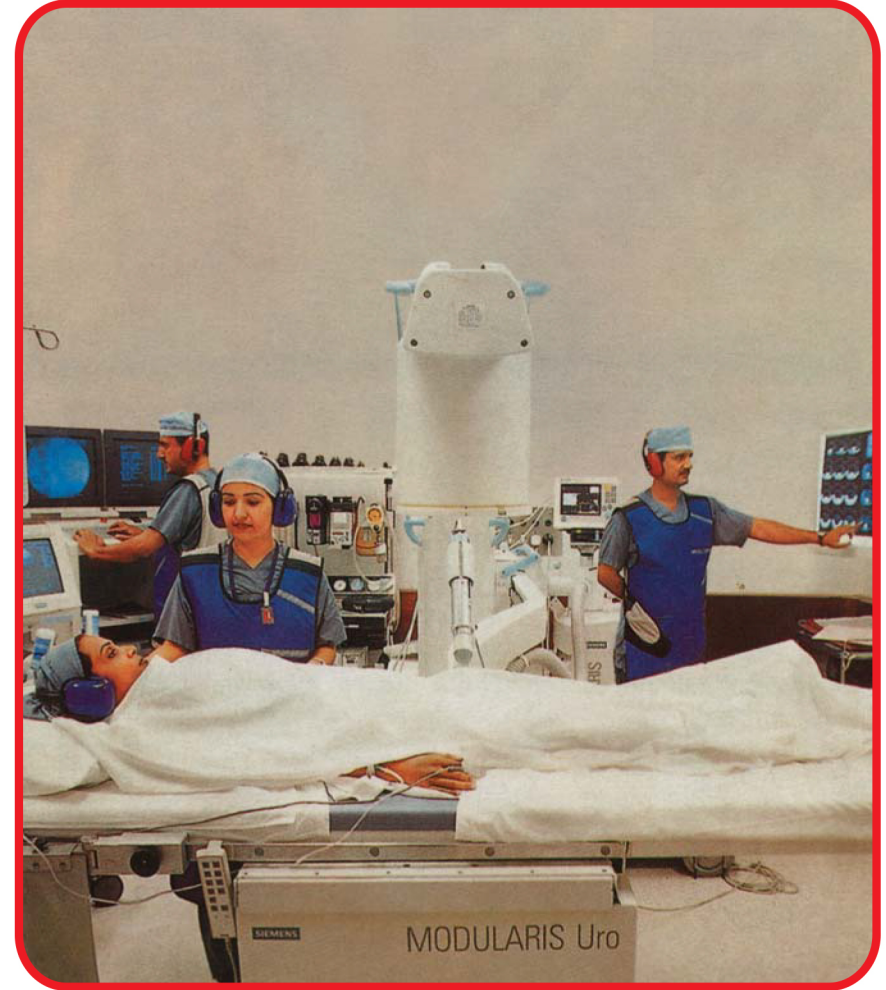


STONE DISEASES



How Comprehensive is the Stone Management Program at AKUH?



The Aga Khan University Hospital (AKUH) offers a **Total Care Program** including comprehensive diagnostic facilities for all kidney stones. The patient is cared for by a professional team, which includes surgeons, physicians, nephrologists, nurses, radiologists, pathologists and other technical support staff. The long experience with lithotripsy and stone management at the AKUH allows selective choice of the best treatment for the patient, with motto to save the

kidneys and prevent end stage failure and consequent need for dialysis and transplant.

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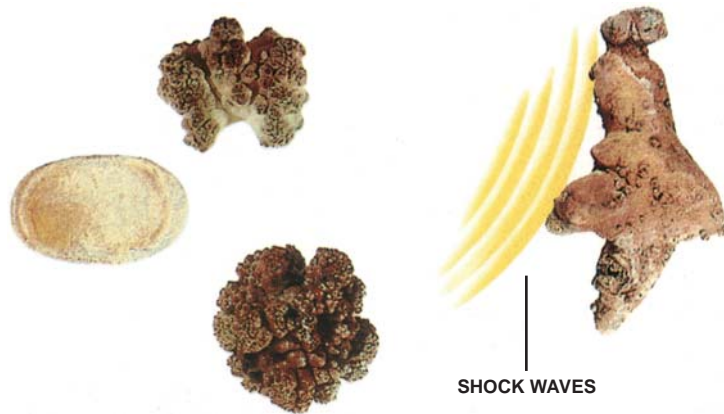


How Kidney Stones Are Formed?

Kidney stones are formed by deposits of mineral salts bound together by a protein matrix. These stones can block the kidney outlet.

What Damage Does Kidney Stone Cause?

Obstruction and infection can result in kidney failure.



Are Kidney Stones Common in Pakistan and What are the ways to Treat Them?

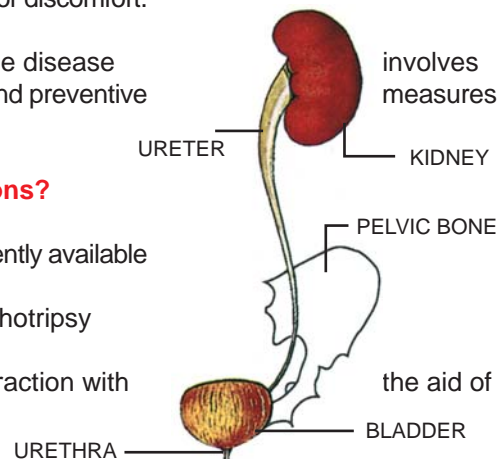
Kidney stones are very common in Pakistan, more so in the rural areas of the country. Now very effective ways are available to comprehensively treat these stones, with very little pain or discomfort.

The complete approach to stone disease treatment of the existing stone and preventive against recurrences.

What are the Treatment Options?

Three treatment options are currently available worldwide:

- Extracorporeal Shock Wave Lithotripsy (ESWL)
- Endoscopic Lithotripsy and extraction with telescopes.
- Surgery.



What is Minimally Invasive Treatment?

PCNL or Percutaneous Nephrolithotomy is minimally invasive surgery for large kidney stones. Stones in the kidney can be reached via a pencil sized skin hole and very large kidney stones can be broken down within the kidney and removed piecemeal. Consequently, the remaining small fragments become easily manageable with ESWL.

Is Conventional Surgery Still required for Stones?

Not all stones are amenable to treatment by the modern methods. In certain circumstances, the kidney or urteric stones are still best managed by open surgery, however, this accounts for only a small fraction of all stone patients. The doctor can now utilize a wide variety of instruments and diagnostic aids to select the most appropriate treatment for the patient. A combination of ESWL and minimally invasive treatment may be suitable alternative of open surgery.

How Can Recurrence be Prevented?

Kidney stones can occur in certain metabolic disorders or structural abnormalities of the genito-urinary system. Blood and urine chemistry along with an IVP are used to detect such abnormalities. Correction of the underlying disorder is the mainstay in prevention against recurrent disease. Additionally, the first degree relatives of stone patients have a higher risk of stone disease. It is advised that they should be screened with an ultrasound and KUB X-ray for asymptomatic disease.

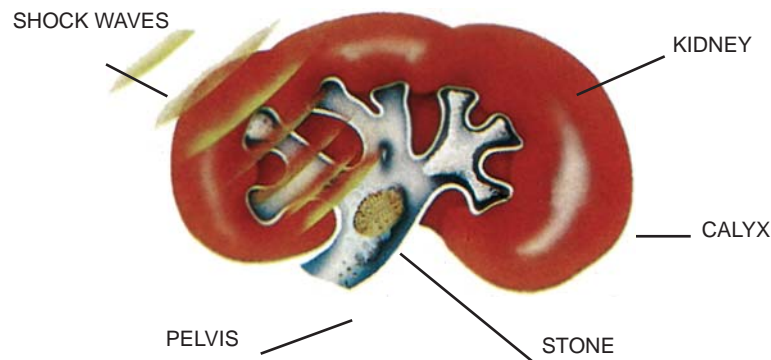
Many patients have no demonstrable abnormality on metabolic work-up. The best preventive measures is to increase water intake to **ENSURE THAT 2 LITRES OF URINE** is passed each day

What Test will be required before Treatment?

Before treatment, blood and urine tests, X-rays and ECG are done to determine the type of stone, function of the kidney as well as to ensure safety to the patient.

What Preparations am I suppose to Do Before Treatment?

A high liquid intake is recommended the night before the treatment. The patient will be called to the hospital on the morning of lithotripsy



treatment after an overnight fast. If you are suffering from constipation, a mild laxative on the eve of procedure is recommended.

What will I Feel During the Treatment?

During the treatment, which is usually least painful, the patient can relax comfortably on the treatment table and talk to doctors and nurses. Appropriate medications will be provided in case of any discomfort.

How Long Does the Treatment Take?

The average treatment is 40-60 minutes. Single small stones may take less time to clear and large or multiple stones will take longer and multiple treatment sessions.

When will I Have the Tube placed inside the Kidney ?

For larger stones, a Double J Stent is usually placed before ESWL. This is often done under general anaesthesia but can be done under local anaesthesia, on patient's choice.



How would I Feel after the Treatment ?

The patient is free to walk about, can go the same day and resume work the next day. Patient usually passes red urine for 12-24 hours and there is no cause for alarm. Patients should drink plenty of liquids in order to let stone particles pass out quickly. Follow-up X-rays will be needed to assess stone clearance. Stone particles are collected by the patient for analysis. So that necessary preventive measures can be recommended.



What will happen to the Stent in the Kidney ?

Remember, if a Double J Stent is in place it has to be removed once complete clearance of stone fragments is achieved. Patients MUST have the Double J Stent removed within six months of its placement. The stent can be removed without General anaesthesia using a flexible cystoscope.

Do Stones Always Pass Out After Lithotripsy Treatment ?

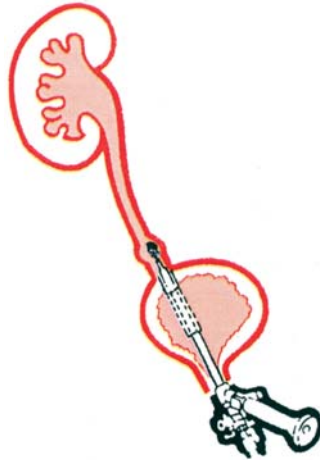
Sometimes stone clearance is delayed by a fragment, which blocks the ureter. The doctor may advise the patient to have this removed by ureteroscopy.

What is Endoscopic Lithotripsy ?

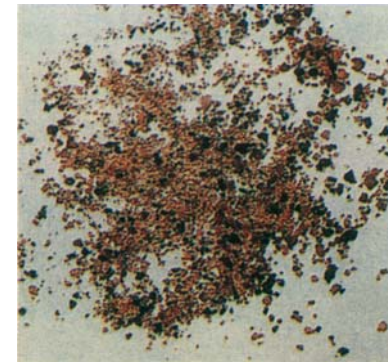
Many stones can be removed without conventional surgery by introducing small telescopes into the body either through normal urinary passage or through a pencil size hole in the skin (the percutaneous approach).

How Stones in The Ureter are Removed ?

Suitable stones within the ureter can be removed, pushed back to the kidney for subsequent ESWL or broken down by small portable lithotripter under direct vision and removed using forceps. This avoids the need for open surgery.



What Is Extracorporeal Shock Wave Lithotripsy (ESWL)?



Extracorporeal Shock Wave Lithotripsy (often called "ESWL for short) is a method of blasting kidney stones without surgery. High pressure shock waves produced outside the body are focused on the stone. This reduces the STONE to SAND GRAIN SIZED PARTICLES which are subsequently passed out in the urine. For large stones, a Double J Stent (a temporary ureteric tube) is at times placed by a cystoscope through the normal urinary passage. One end

of the stent lies in the kidney while the other in the bladder with nothing visible from outside. This dilates the ureter and prevents obstruction during the passage of stone particles. When the patient is stone free, the stent is removed with the help of cystoscope without any operation.

What are the advantages of Lithotripsy over Surgery?

- No incision and no scars as after surgery.
- Lot less painful than traditional surgery.
- The treatment is very safe and effective.
- Time spent in hospital is minimal.
- Almost no side effects.
- Patients unfit for traditional surgery can be treated by this modality.
- In case of recurrent stones, treatment can be safely repeated.
- Most patients tolerate the procedure under minimal sedation and pain killers (analgesics).