Lower polar stones

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Why Lower polar stones (LPS)?

- The most common
- Unlikely to pass spontaneously
- Treatment controversy (stone ≤ 2 cm)
Intravenous urography (IVU) has been the gold standard.

Randomized trials have shown that non contrast CT (NCCT) has similar or superior results to IVU in acute flank pain.

There is no level 1 evidence to suggest that CTU is superior to IVU in the work of urolithiasis.
CT provides important information that helps in determining the selection of appropriate treatment modality:

- Stone size
- Stone number and distribution (morphometry)
- Stone density (HU)
- Presence and degree of hydrolephrosis
- Skin to stone distance (SSD)
Treatment options?

- PNL
- RIRS
- ESWL
- Conservative (watchful waiting)
Management Algorithm

Lower calyceal stones

< 1 cm
1- ESWL
2- F-URS
3- PCNL

1-2 cm
Favourable factors for ESWL
Yes
ESWL or Endourology
1- Endourology
2- ESWL

No
> 2 cm
1- Endourology
(Grade B)
2- ESWL

EAU guidelines 2014, ICUD (SIU 2014)
Conservative (watchful waiting)

- Small $\leq 1$ cm
- Asymptomatic
- Non locally obstructive
- No UTI
- Non metabolic (Cystine, hyperuricosuria)
- Patient with high ASA score
Conservative management associated with increased risk of progression and invasive intervention
When to interfere?

- Symptoms
- Stone size
- Stone composition
Level 1a evidence for LPS

- Based on Stone free rate (SFR) at 3 months
  - PNL → highest SFR
  - RIRS > ESWL
  - ESWL → least SFR (stone 1-2 cm in size)

Donaldson JF et al; European Urology 2014.
- PNL → morbidities and convalescence
- Miniperc, Ultraperc, tubeless
- ESWL → least invasive, most acceptable by the patient (without multiple sessions)
Until gaps in the evidence base are addressed especially regarding PNL versus RIRS

The treatment decisions should be influenced by:

- The individual characteristics and expectations
- The experience
- The facility of equipments
Thank you