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Surgery

PREDICTIVE VALUE OF RESISTIVE INDEX IN SUCCESS OF MEDICAL EXPULSIVE THERAPY FOR URETERAL STONE DISEASE

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ABSTRACT Medical expulsive therapy is a reasonable treatment modality for ureteral stones in appropriately selected patients. Here, we evaluate for additional parameters to predict the success of MET.

OBJECTIVE: To evaluate the predictive value of resistive index in success of medical expulsive therapy for ureteral stone disease.
MATERIALS AND METHODS: This is a prospective observational study that included 120 men with ureteral stone disease attending the stone clinic between January and June 2018.
RESULTS: 75 (63%) of 120 men spontaneously passed the stone. Among the variables, resistive index values and stone size were independently associated with success of medical therapy.

KEYWORDS : resistive index, stone size, medical expulsive therapy

The incidence of stone disease is increasing with recurrence in up to 50% cases. Medical expulsive therapy is a reasonable treatment option for ureteral stone disease with a 20% additional stone passage in addition to the 60% spontaneous passage. However, up to 20 - 30% still fail MET with no reliable predictors of who would fail. We evaluate the predictive value of resistive index in success of medical expulsive therapy for ureteral stone disease

OBJECTIVE

To evaluate the predictive value of resistive index in success of medical expulsive therapy for ureteral stone disease

MATERIALS AND METHODS

120 consecutive consenting patients with ureteral calculus attending stone clinic at Madras Medical College from January to June 2019 were included.

- **Inclusion criteria**

1. age 18 years or older
2. distal ureteric calculus
3. size < 1 cm by NCCT

- **Exclusion criteria**

1. Multiple ureteric / co-existing renal calculus
2. Contraindication to alpha blockers
3. h/o urological interventions
4. CKD
5. significant comorbidities
6. severe HUN
7. intractable symptoms
8. solitary kidney
9. congenital anomalies
10. UTI

120 patients were included - received 0.4 mg of Tamsulosin once daily for 3 weeks. Baseline CBC, RFT, Urine micro and cultures were obtained. Ultrasound KUB with RI was performed at baseline, day 10 and at 21 days by a single urologist.

RESULTS

- Mean age – 32.4 years (18 – 59 years)
- Males – 74%, Female – 26%
- Mean treatment duration – 2.2 weeks (0-3 weeks)
- Mean stone diameter – 5.6 mm
- Spontaneous stone passage – 63%

Logistical regression analysis revealed resistive index and stone size to be independent variables predicting stone passage

ROC curve analysis:
Cutoff threshold of 0.74 predicts spontaneous passage with a sensitivity of 91.1% and a specificity of 75% and a AUC of 0.90

LIMITATIONS

- Not a randomized control study
- Small sample size

CONCLUSION

Resistive index value of the affected kidney appear to be a reasonable predictor of success of medical expulsive therapy in management of ureteral calculi.

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