

Predicting the Stone Fragility and Eswl Success Rate with Non Contrast Ct – KUB

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Abstract: *To study the density of renal stone by Non contrast CT Scan as measured in HU and its correlation with susceptibility of fragmentation by ESWL.*

I. Introduction

Study Design

This is a prospective study conducted in 150 patients of renal stone disease who underwent ESWL treatment at Meenakshi medical college, kanchipuram, during the period September 2013 to april 2015.

Inclusion Criteria

- Patients with renal stones 8mm – 35mm in diameter who have not received any previous treatment for the same.
- All stones located in a satisfactory functioning, non obstructed renal unit.

Exclusion Criteria

- Bleeding diathesis
- Pregnant females
- Uncontrolled infection
- Ureteric calculi
- Distal obstruction
- Congenital Anomalies
- Patients with cardiac pacemaker
- Lower calyceal stone with unfavourable anatomy.

150 patients with renal stones included in the study. In all patients history and physical examination was done. Baseline investigations included were Complete haemogram, RFT, urine C/S, X-ray KUB, USG KUB and CT KUB.

NCCT Scan was done in 3mm cuts. Stone density in HU was obtained on the particular cut in which the stone was seen in the greatest diameter. Mean stone density was calculated in some cases. Patients were explained about the study, ESWL procedure and informed consent obtained.

ESWL was done as outpatient procedure. Patient datas recorded in the proforma.

All treatments were done with **Dornier Compact Delta II** (Electromagnetic Generator) Machine. Patients were administered sedation IV Fortwin (20mg), 30 minutes before procedure. In paediatric patients Endotracheal General Anaesthesia was given by anaesthetist. Topical EMLA cream was used in some patients

II. Conclusion

1. **For stones with HU < 750 and stone size even upto 3.5cm, stone free rate of 100% can be achieved with ESWL.**
2. **For stones with 750 – 1000 HU patient may need retreatment (Multiple Sittings ESWL).**
3. **For stones with HU >1000 other modalities of treatment (Endoscopic and Open Stone Surgery) are preferable to ESWL.**
4. **NON CONTRAST CT estimation of stone density by HOUNSFIELD UNIT predicts the successful outcome of ESWL therapy**

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