

# How effective is our mobile lithotripsy service?

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## Aim

- To assess the efficacy of our mobile lithotripter unit with respect to stone clearance

## Factors affecting ESWL outcomes

- Stone Related
  - Stone Burden
  - Stone Location
  - Stone Density
- Renal Related
  - Intra-renal Anatomy
  - Drainage
- Patient Related
  - BMI
  - Musculo-skeletal deformity

## Standards

<b>Study</b>	<b>Year</b>	<b>Lithotripter</b>	<b>Number</b>	<b>SFR (%)</b>
<b>Cope et al</b>	<b>1991</b>	<b>Wolf Piezolith</b>	<b>220</b>	<b>75</b>
<b>Mykulak et al</b>	<b>1992</b>	<b>Therasonic</b>	<b>172</b>	<b>56</b>
<b>Cass et al</b>	<b>1995</b>	<b>HM3</b>	<b>4796</b>	<b>63</b>
<b>Cass et al</b>	<b>1995</b>	<b>Medstone STS</b>	<b>6195</b>	<b>64</b>
<b>Elhilali et al</b>	<b>1996</b>	<b>Dornier Compact</b>	<b>191</b>	<b>73</b>
<b>Lalak et al</b>	<b>2002</b>	<b>Dornier Compact Media</b>	<b>500</b>	<b>63</b>
<b>Johnson et al</b>	<b>2003</b>	<b>Dornier Doli S</b>	<b>204</b>	<b>74</b>

## **Our Lithotripsy Service**

- Our mobile lithotripsy service started in 2008 and was introduced to offer a local stone service
- Wolf Piezolith 3000 Lithotripter
- 100mg pr diclofenac, no routine antibiotics
- 3+1 clinic sessions per month

## **Methods**

- Retrospectively over 12 months between 2010 and 2011
- Two doctors measured calculi diameter pre and post treatment
- Primary outcome measure was stone free rate (fragments <2mm)
- Variables analysed included stone to skin distance, Hounslow Units and need for subsequent operative intervention

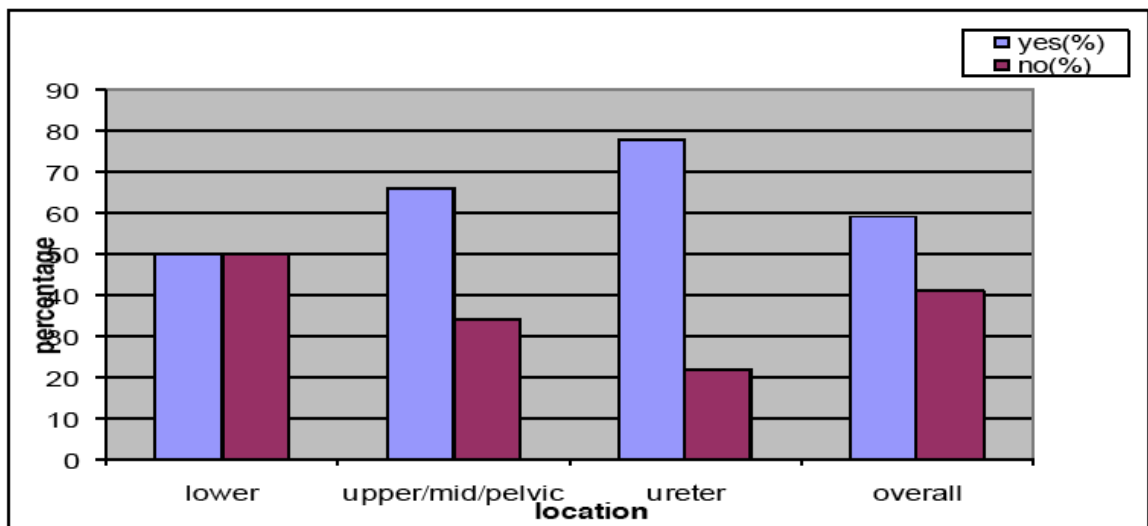
## Results

- 137 patients analysed
- Mean no. of ESWL sessions per patient 2.2 (Range 1-8)
- Imaging modality used for pre op and post op:

	Pre op imaging	Post op imaging
CT	81%	26%
USS	7%	13%
XR	12%	61%

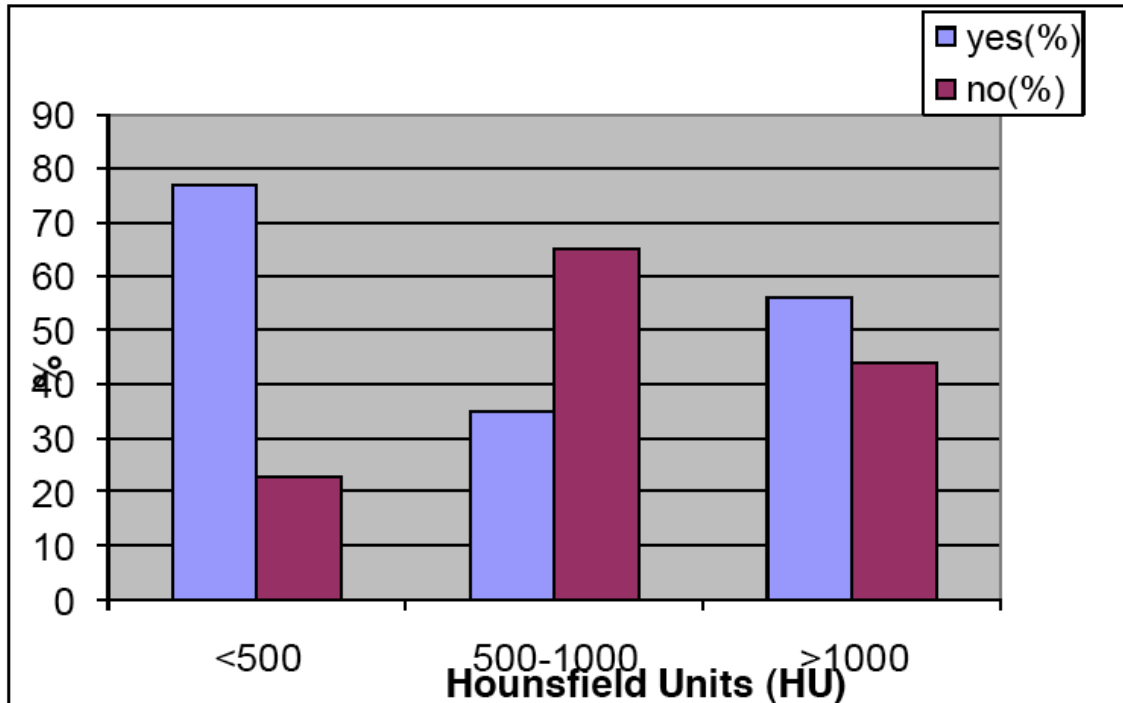
- Mean pre-treatment stone size 7.5mm SD +/- 4.9mm (Range 1-25mm)

## Stone free rates according to renal position



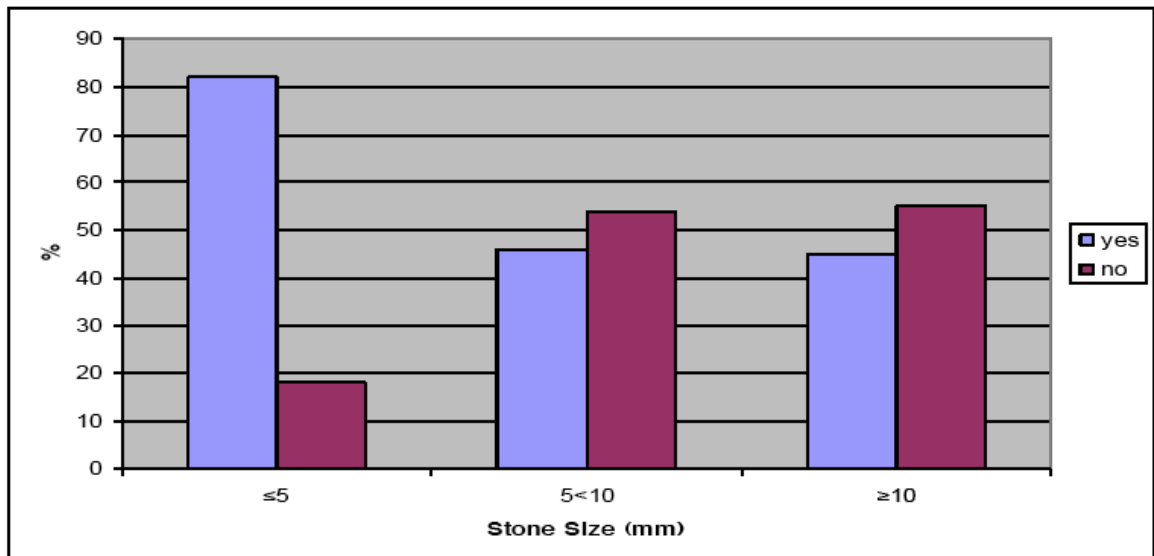
Overall stone free rate defined as no remaining fragments larger than 2 mm

## Stone free rates according to radiodensity

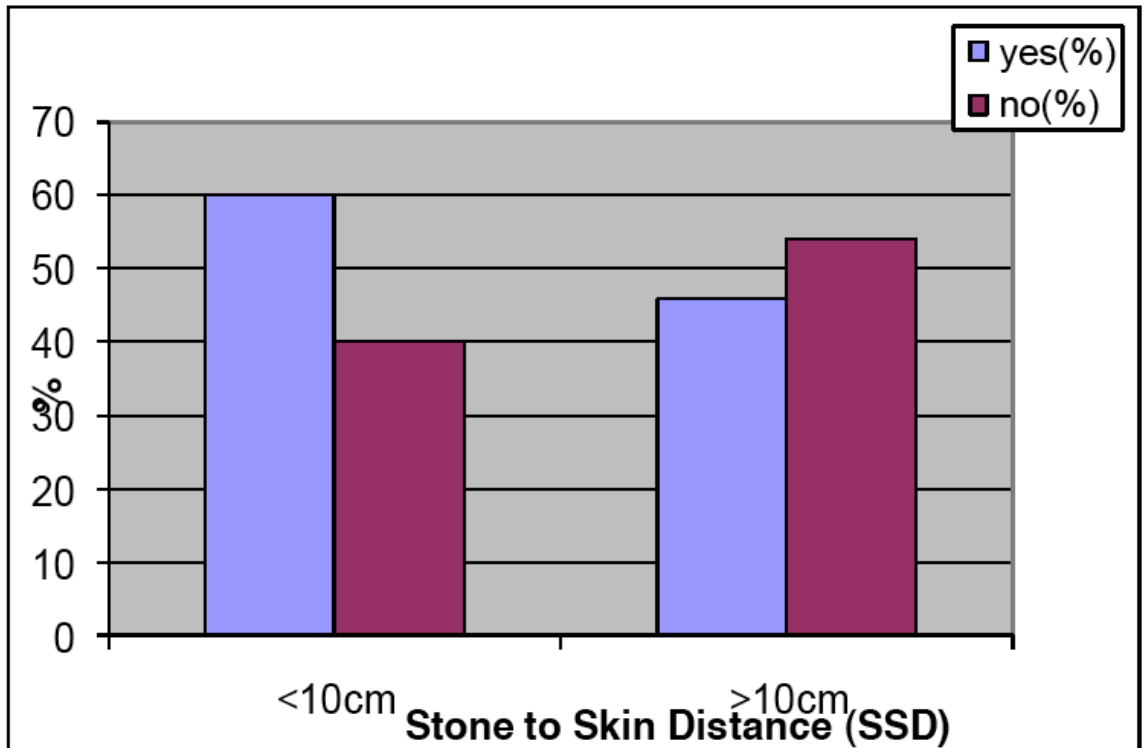


- Hounsfield Unit measurements were available for 114 patients

## Stone free rate according to stone size



## Stone free rate according to stone skin distance



- Stone to Skin distance measurements available for 106 patients

## Stone free rates according to imaging modality used for follow -up



## Results

- 68% of patients were managed with ESWL alone
- 32% subsequently underwent elective operative intervention
- Complications

Complication	No. of patients
Ureteric obstruction	5
Urosepsis	1

- Complications – Perinephric Haematoma x1





## **Discussion**

- Data will help us target which patients more likely to benefit from ESWL & those that should be offered immediate surgical intervention
- Consideration needs to be given to contemporary follow-up of patients. Should stones diagnosed on CT be followed up by CT to confirm true effectiveness of treatment?

## **Conclusion**

- Hounslow Units now included in radiology report
- In our experience, mobile lithotripters are a good alternative to fixed lithotripters and can offer equivalent rates of stone clearance to contemporary published data.
- This data will help our patients make an informed decision when making treatment decisions