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Multicentre external validation of the Imamura nomogram for the prediction of success after semi-rigid ureterolithotripsy

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Objectives

- Aim of our study was to externally validate Imamura nomogram for the prediction of the stone-free rate in patients undergoing ureterolithotripsy (ULT) in two centers

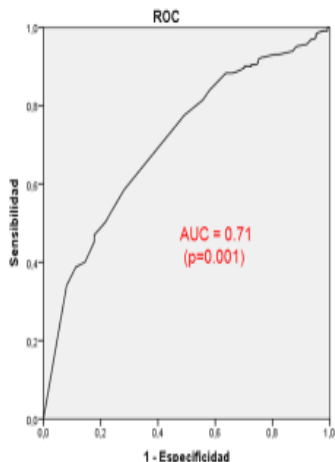
Material & Methods

- 356 patients were prospectively and consecutively enrolled in two centers from January 2014 onwards.
- Non-contrast CT was used to define number, location and length of the stones and eventually the presence of hydronephrosis; urinalysis evaluated pyuria.
- ROC analysis studied the efficacy of the nomogram



Results

•232/359 (65%) patients were stone free at 3 months



•On ROC analysis, Imamura nomogram presented an AUC of 0.71 (95% CI 0.65-0.76 p=0.0001) for the prediction of the stone-free rate in patients treated with ULT

Conclusions

•In our experience the Imamura nomogram represents a valid tool to preoperatively discuss with the patient the outcome of laser ureterolithotripsy.

	Overall	No Stone Free	Stone Free	p
Number of Patients	356	124/356 (35%)	232/356 (65%)	
Gender (Male/Female)	68%/32%	63%/33%	68%/22%	0.414
Median Age (Years)	54 (IQR:44/66)	55 (IQR:46/67)	54 (IQR:44/66)	0.768
Median lenght of the stone (mm)	8 (IQR:6/11)	10 (IQR:5/10)	8 (IQR:5/10)	0.001
Number of Stones				
1	294/356 (82%)	94/124 (76%)	200/232 (85%)	0.001
2	46/356 (13%)	20/124 (16%)	26/232 (11%)	
3	8/356 (2%)	4/124 (3%)	4/232 (2%)	
4	8/356 (2%)	6/124 (5%)	2/232 (1%)	
Stone Location				
UPJ	51/356 (14%)	31/124 (25%)	20/232 (9%)	0.001
Proximal Ureter	61/356 (22%)	23/124 (19%)	38/232 (16%)	
Middle Ureter	99/356 (28%)	43/124 (35%)	56/232 (24%)	
Distal Ureter	145/356 (42%)	27/124 (21%)	118/232 (51%)	
Pyuria				
Yes	102/356 (29%)	47/124 (38%)	55/232 (24%)	0.008
Not	244/356 (71%)	77/124 (62%)	177/232 (76%)	
Hydronephrosis				
Yes	272/356 (76%)	99/124 (80%)	173/232 (75%)	0.001
Not	84/356 (24%)	25/124 (20%)	59/232 (25%)	