

## PP-017

### Relationship of hypertension to metabolic status in urinary stone patients

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Hypertension is a usual concomitant to stone formation. Whether it is the cause of stone formation or its effect is not clearly elucidated. In this paper, the various metabolic biochemical parameters in the urine and blood namely 24 hour volume, calcium, phosphorus, uric acid, oxalate, magnesium, creatinine, citrate, sodium and potassium and serum creatinine, calcium, phosphorus, uric acid and magnesium were compared between the stone patients with hypertension and those without hypertension.

814 patients with proved urinary stone disease were randomly selected for the study. 461 of these had normal blood pressure and 353 had hypertension. The stone related urinary and serum parameters were analysed and student t test performed to study the difference between those with associated hypertension and those without. The results are shown in Table.

BP	N	Mean	SD		
VOLUME	Normal	461	2726.46	1074.91	<0.01
	HT	353	2914.90	1107.37	
CALCIUM	Normal	461	236.75	93.53	<0.01
	HT	353	253.59	95.31	
PO	Normal	461	728.43	421.59	NS
	HT	353	747.78	394.58	
URICACID	Normal	461	484.16	190.70	<0.001
	HT	353	530.95	208.39	
OXALATE	Normal	461	66.21	32.77	<0.001
	HT	353	78.00	41.84	
MAGNESIU	Normal	461	11.33	10.00	NS
	HT	353	11.27	9.90	
CREATINI	Normal	461	1.25	0.68	NS
	HT	353	1.31	0.69	
CA	Normal	461	365.20	329.40	NS
	HT	353	389.82	316.28	
NA	Normal	292	231.54	155.43	<0.001
	HT	243	290.74	250.15	
K	Normal	292	47.84	25.64	<0.05
	HT	243	53.19	33.72	
SCR	Normal	461	0.90	0.43	NS
	HT	353	0.91	0.39	
SCA	Normal	461	9.26	1.43	NS
	HT	353	9.40	1.42	
SPH	Normal	461	3.63	1.30	NS
	HT	353	3.61	1.33	
SUA	Normal	461	6.13	2.18	NS
	HT	353	6.40	2.24	
SMG	Normal	461	2.06	0.45	NS
	HT	353	2.01	0.39	

It is observed that stone promoters namely urine calcium, uric acid and oxalate were statistically significantly higher in the hypertensive stone patients compared to the non hypertensive stone patients. Urine sodium and potassium were higher in the hypertensive stone group. This finding suggests that hypertensive stone patients are more prone to stone disease. It could also imply that those patients with stone disease who have the above mentioned biochemical abnormalities tend to develop hypertension in the course of the stone disease.