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## Epidemiological and clinical characteristic of stone composition in patients from New Territories West Cluster

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### Objective:

This study aims to investigate epidemiological characteristics of stone compositions and analyze the association between stone composition and patient's clinical characteristics and comorbidities. Compared with New Territories East Cluster (NTEC), we would like to investigate the difference in stone compositions among different clusters.

### Patients & Methods:

We have retrospective analyzed 852 patients with urolithiasis among New Territories West Cluster (NTWC) between July2016 and April2021. The three commonest fundamental composition of urolithiasis was further analyzed on the association with patient's characteristics and comorbidities

### Results:

Among 852 patients, 134 patients are having pure stone while 718 patients are having mixed stone. Whewellite stones (52.8%) is the Commonest composition, followed by Carapatite (30.9%), Uric acid (11.2%), Struvite (2.1%) and Weddellite (2.1%). The most frequently encountered age group are 45-64years (58%). There were close association between stone composition and age ( $p=0.003$ ), sex ( $p<0.001$ ), diabetes ( $p=0.03$ ) and bacteriuria ( $p<0.001$ ) while there was no significant association between stone composition and overweight, smoking, alcohol consumption, hypertension, gout and microscopic haematuria. There was significant correlation between average Hounsfield unit and stone composition ( $p<0.001$ ). The stone compositions between NTEC and NTWC are quite similar.

	NTEC	NTWC
Type of stone		
Pure stone	214 (17.0%)	134 (15.7%)
Mixed stone	1044 (83.0%)	718 (84.3%)
Stone composition		
Calcium oxalate monohydrate (Whewellite)	680 (54.1%)	450 (52.8%)
Carbonate apatite (Carapatite)	379 (30.1%)	263 (30.9%)
Uric acid	129 (10.3%)	95 (11.2%)
Calcium oxalate dihydrate (Weddellite)	32 (2.5%)	18 (2.1%)
Magnesium ammonium phosphate hexahydrate (Struvite)	19 (0.7%)	18 (2.1%)

### Conclusion:

Calcium oxalate monohydrate is the commonest composition among NTEC and NTWC patients. There are close association between stone composition and diabetes and bacteriuria. These results may provide clues to establish prevention of renal stones.