Results

In a single tertiary center in a two-year period we performed stone analysis for 748 patients. 358 of them were male (47.9%) while 390 of them (52.1%) were female.

Stone analysis revealed that: 721 patients (96.4%) had mixed stones while only 27 patients (3.6%) had pure stones.

Regarding the patients with stones of mixed components (two or more),

The mean age of patients in this group was 50.8 ± sd 14.2.

351 patients (48.7%) had no co-morbidity while 167 patients (23.2%) had multiple co-morbidities.

Co-morbidity	**Number**	**%**
DM	٨٥	١١.٧
HTN	٩١	١٢.٦
CKD (GFR <60 mL/min/1.73 m(2) for 3 months or more)	٨	١.١
Hepatic(cirrhotic liver with compensated hepatic profile)	١٨	٢.٥
Multiple	١٦٧	٢٣.٢

About one third of the patients of mixed stone group (226 patients) had bilateral renal stones while the rest had unilateral stones.

Regarding the stone size, 308 patients (42.7%) had stone range from 1 -2 cm while 413 patients (57.3%) had stones more than 2cm.

Stone analysis revealed that:

Component	% Number
Calcium oxalate	(48.5%). **350 patients**
Uric acid	(48%) **346 patients**
Calcium phosphate	(26.4%) **190 patients**
Uric acid dehydrate	(24.5%) **177 patients**
Calcium oxalate dehydrate	(15.3%) **110 patients**
Magnesium ammonium phosphate	(9.7%) **70 patients**
Xanthine	(9.2%) **66 patients**
Cysteine	(7.1%) **51 patients**
Dihydroxyadenine	(6.2%) **45 patients**
Mono ammonium urate	(5.7%)

	41 patients
Protein	(5.3%) **38 patients**
Calcium carbonate	(2.9%) **21 patients**
Sodium hydrogen urate	(2.2%) **16 patients**
Calcium hydrogen phosphate	(1.7%) **12 patients**
Silica dioxide	(1%) **7 patients**
Calcium sulphate dehydrate	(0.7%) **5 patients**

More than half of the patients (391 patients, 54.2%) were recurrent cases post either open pyelolithotomy or PCNL, the mean age was 51.2± sd 14.2.

Half of them were males and the other half were females.

The recurrent stones were bilateral in 175 patients (44.8%) and 222 patients (57%) had stones more than 2 cm in size.

Stone analysis of the recurrent cases revealed that:

Component	% Number
Uric acid	(48.8%)

	191 patients
Calcium oxalate	(45.8%). **179 patients**
Uric acid dehydrate	(27%) **107 patients**
Calcium phosphate	(26.9%) **105 patients**
Calcium oxalate dehydrate	(15.1%) **59 patients**
Magnesium ammonium phosphate	(7.9%) **31 patients**
Xanthine	(8.4%) **33 patients**
Cysteine	(8.2%) **32 patients**
Dihydroxyadenine	(6.1%) **24 patients**
Mono ammonium urate	(5.4%) **21 patients**
Protein	(5.4%) **21 patients**
Sodium hydrogen urate	(2.3%)

	9 patients
Calcium carbonate	(2%) **8 patients**
Calcium hydrogen phosphate	(1%) **4 patients**
Silica dioxide	(1%) **4 patients**
Calcium sulphate dehydrate	(1%) **4 patients**

Regarding the patients with stones with pure component:

The median age of the patients with pure stones was 46 (10-69).

Fifteen of them were female while 12 were males.

About one third of the patients of this group (9 patients) had bilateral renal stones while the rest had unilateral stones.

Regarding the stone size 19 patients (70.4%) had stone range from 1 -2 cm while 8 patients (29.6%) had stones more than 2cm.

Stone analysis revealed that:

Component	% Number
Protein	(25.9%) **Seven patients**

Calcium oxalate	(22.2%) **six patients**
Cysteine	(18.5%) **five patients**
silicon dioxide	(11.1%) **Three patients**
Cholesterol	(7.4%) **two patients**
Hydroxyl calcium phosphate	(7.4%) **two patients**
Calcium magnesium phosphate	(3.7%) **one patient**
Calcium phosphate	(3.7%) **one patient**

18 patients (66.7%) were recurrent stone post either open pyelolithotomy or PCNL.