



## Chemical Analysis of Kidney Stones in Northern Jordan

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### ABSTRACT

*Determination of the chemical constituents of kidney stones aids to establish the etiology of stones disease. The present study was carried out to investigate the composition of kidney stones to provide assistance for appropriate preventive treatment of the patient and to prevent a recurrence of stone formation in northern Jordan population. A total of 50 kidney stone samples were recovered from patients who were admitted to King Abdullah University Hospital (KAUH) and Princess Basma Teaching Hospital, Irbid, Northern Jordan, who were subjected to surgical operation 11 females and 39 males; age range 23 to 85 years during 2013-2014. Gender wise comparison revealed that majority of the stones (78.0%) analyzed were recovered from male patients. Whereas, stones recovered from females were only 22.0%. The composition of all samples was found by the chemical method using BIOLABO analysis kit. The 50 analyzed samples of kidney stones comprised 40.0% calcium oxalate and uric acid mixed stones, 22.0% calcium oxalate stones, 18.0% uric acid stones, 10.0% magnesium ammonium phosphate stones (struvite), 6.0% calcium oxalate-phosphate stones, and 4.0% cystine stones. The relationship between the chemical constituents of stones and both sex and age was established. There were some variations in frequencies of stones compositions according to age. In considering variation between genders, ammonium was higher among female patients whereas cystine stones formed only in males. In conclusion, Calcium oxalate and uric acid mixed stones were the most predominant type in stones of 50 patients.*

**Keywords:** kidney stones, nephrolithiasis, chemical analysis, calcium oxalate.

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