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Research Details:

Research Title : IONIC ASSOCIATIONS WITHIN 460 NONINFECTION URINARY STONES

- A QUANTITATIVE CHEMICAL ANALYTICAL STUDY

<u>IONIC ASSOCIATIONS WITHIN 460 NONINFECTION URINARY STONES</u>
- A QUANTITATIVE CHEMICAL ANALYTICAL STUDY

Description : In addition to standard quantitative wet chemical and inductively

coupled plasma atomic-emission spectrometric stone analytic techniques, elemental analysis for the determination of nitrogen, carbon and hydrogen was utilized in this study of 460 category I (non-infection) urinary stone samples from western Saudi Arabia. They were classified according to the percentage composition of detected ions, including trace or minimum amounts. The incidence of uric acid stones (24%) is higher than that reported from western countries but similar to those reported from eastern Europe and other parts of the middle east and most are in the group with the highest uric acid content (UrI4). Oxalate stones are the most common type (61%) and phosphate stones (15%) the least common. The results confirm the reliability of elemental microanalysis and support its use for the quick identification of stones especially those that weigh < 1 mg and are too small for wet chemical analysis. Within the various stone types, however, the ionic associations shown by wet chemical analysis denoted the presence of mutual indirect associations between the characterising ion oxalate and both uric acid and phosphate ions, but no association between the characterizing ion uric acid and phosphate ions. Factors that affect these ionic correlations may influence the processes of stone initiation and type of stone formed.

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