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## Abstract Book



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Supplement to issue 1/2017 SMLI

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## Surgery Oral Session I

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Radiology

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# Introduction: Knowing the composition of a urinary calculus is frequently a key factor in determining its most appropriate management. Helical CT can provide helpful information on stone size and stone composition. Helical CT can reveal stone size more accurately than standard radiography and nephrotomography. We sought to determine whether the composition of a urinary stone could be predicted by CT characteristics.

Materials and methods: Since March 2008 till August 2009, 120 renal stones were obtained from patients who had undergone pyelolithotomy or nephrolithotomy at the Imam Ali Hospital, Zahedan, Iran. Stones with the largest diameter more than or equal to 5 mm were studied. Each calculus was placed inside the chicken lean meat. The radiologist was unaware of the exact chemical composition of the stones. Independent sample Students t-test was used for comparison of the absolute HU values of the different types of calculi. P Values <0.05 were considered significant.

**Results:** Of total 120 patients participated, 67 Patients (55.8%) were male and 53 of them (44.2%) were female. The mean age of cases was  $35.8 \pm 12.4$  years. According to chemical composition, the calculi were classified into several groups. Of the 120 stones, 112 were chemically pure and 8 were mixed. There were 59 calcium oxalate, 27 calcium phosphate, 17 uric acid, 5 struvite, 4 cystine and 8 mixed stones with variable ratios. In the analysis of the stones, overall difference between densities of the stones was statistically significant (p < 0.001).

**Conclusion:** Generally, we can state that the use of non-contrast computed tomography can be helpful in the prediction of urinary stone composition.

Keywords: Kidney Stones, Computed Tomography, Urolithiasis, Composition

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### EFFECT OF UNFAVOURABLE ECOLOGICAL FACTORS ON CHILDREN'S STATE OF HEALTH

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#### Abstract:

Introduction: Anthropogenic environmental pollution produces a marked influence upon the formation of population health especially due to the changes of social-economical conditions. Increased penetration of toxic substances into the environment, first of all, has a negative impact on the health of the population. Objective: to identify the character and power of possible correlation interrelations between perinatal pathology and pollution of atmospheric air with nitrogen oxide, hydrogen chloride and fluoride, sulfur benzpyrene and dioxide.

Materials and methods: For many years a dynamic study of the peculiarities of children's health in Chernivtsi due to the monitoring investigation of environmental conditions has been performed. We have distinguished the regions of an increased formation of ecologically dependent pathology, on the territory of which a modifying influence of unfavourable ecological factors upon children's health has been proved. The main group included children residing on the territories considered as the regions of a high risk of formation of ecologically dependent pathology. Geographically they belonged to II, III, IV, V and VIII pediatric departments of the Municipal Pediatric Polyclinic. The group of comparison constituted residents referring to I, IV and VII pediatric departments living under ecologically more favourable conditions. An average annual number of representatives from the main group was 7513,9±210,5 children, and the group of comparison - 6382,0±191,9 patients. The groups being examined were comparable by their main characteristics.

Results: By means of correlation analysis we have detected relations between the formation of I and II health groups of newborns and air pollution with nitrogen dioxide (r=-0.99, P=0.04) and formaldehyde (r=-0.99, P=0.07), a positive correlation of sickness rate among children of 1 year of age and air pollution with benzpyrene (r=0.99, P=0.04).

Conclusion: The conducted correlation analysis enabled to find reliable strong interrelations of formation of sickness rate among children and the character of air pollution, to identify their direction, as well as to determine a pre-forming influence of a comprehensive environmental pollution on "mother-placenta-fetus" system, which in our opinion results not only in the formation of risk groups of newborns, but to the exertion of adaptive mechanisms in them.

Keywords: perinatal pathology, ecological factors, children

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