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AN ASSESSMENT ON CRYSTALLURIA AMONG URINARY TRACT INFECTIONS SUSPECTED CHILDREN WHO ADMITTED TO THE LADY RIDGEWAY HOSPITAL, SRI LANKA

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Introduction: "Crystalluria" is the excretion of crystals in urine, which is an outcome deriving from underlying pathological conditions or precipitation of certain concentrated chemical constituents in urine under normal physiological conditions[1]. Urinary crystals have become one of the most vital biomarkers in urinalysis in detecting several underlying disease conditions[2]. However urinary tract infection (UTI) is the presenting sign of urolithiasis in children[3]. Therefore purpose of this study was to identify and estimate different types of crystals in the urine samples collected from UTI suspected children who were admitted to the Lady Ridgeway Hospital, Sri Lanka.

Materials and Methods: Descriptive cross sectional study was conducted using 400 children belong to age <12 years. The participants included 242 males and 158 females. All the subjects were clinically suspected with UTI. The urine samples were collected prior to start of antibiotics. Each sample was examined macroscopically and centrifuged at 2000 rpm for 5 minutes. The urine sediment was examined under the light microscope and different crystal types were identified and counted at x 40 magnification. The crystal count per milliliter of urine was calculated.

Results: Out of 400 samples only 66 samples (66/400) were positive for crystalluria. The crystal types present were uric acid, calcium oxalate, triple phosphate, ammonium biurate and ammonium urate. None of the samples showed abnormal crystals. The distribution of each crystal type within 66 samples were as follow; uric acid 25/66, calcium oxalate 34/66, triple phosphate 12/66, ammonium biuate 7/66 and ammonium urate 3/66. The quantity of crystals per mL of urine was ranged as follow; uric acid 850 - 130,000, calcium oxalate 350 - >250,000, triple phosphate 650 - 6,000, ammonium biurate and ammonium urate were presented in clumps.

Conclusion: Uric acid and calcium oxalate were present as the predominant crystal types in the urine samples analyzed.