Letters to the Editor

Diagnosis of Urinary Tract Infections (UTI) in children; collection and transport of urine and colony counts

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The widely accepted "gold standard" for diagnosis of UTI in children is the viable colony count, which relies on the fact that bacteria incubated in the bladder urine at body temperature would have multiplied many times (exponential logarithmic scale), whereas contaminant bacteria washed off the genitalia during voiding would not. A significant colony count is $>10^5$ /ml. Bordering colony counts of 10^4-10^5/ml can be regarded as unimportant if there is a mixed growth but may require repetition if associated with a single pathogen. The reliability of this method depends, firstly, on the urine specimen having been obtained by clean catch or midstream technique and, secondly on the midstream sample being plated out within one hour of voiding. If a delay between micturition and culture is unavoidable, metabolism of contaminants can be inhibited by either refrigeration at 0-4^{0}C or the addition of sodium borate to the specimen. In the UK the latter category of culture bottles can be readily identified because these have a stopper of a different colour compared to that of standard culture bottles.

Children under 5 years of age, with UTI require regular follow up, further investigations (such as repeat urine cultures, renal ultrasound scans, micturating cystourethrograms etc.) and prophylactic treatment. Some of these procedures are expensive and invasive. Therefore it is extremely important to firmly establish the diagnosis of a UTI initially.

In Sri Lanka at present some of the established private laboratories in Colombo have branches in the outstations for collection of samples including urine cultures. As transport is presumably by road, many hours would elapse between collection and plating. Finally a report is issued on a printed letter head signed by a consultant microbiologist presumably for the purpose of authenticity. I wonder whether the person who signs the report has any information about the techniques of collection, transport time etc. which would significantly contribute to a colony count of $>10^5$/ml. Also I wonder how often the doctor who is treating the patient, inquires about these details, prior to diagnosing a UTI and embarking on a course of treatment and further investigations? Sadly the majority of parents are not made aware of such vital information by their health-carers.

Could a responsible microbiologist kindly respond to this letter and suggest safeguards that could be adopted for the future?

Reference

1. White R H R, Management of Urinary Tract Infection, *Archives of Disease in Childhood*, 1987; **62**:421-7.

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