

TITLE: EVALUATION OF URINE CULTURED FOR 24 AND 48 HOURS AND ASSOCIATION WITH URINE ANALYSIS

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ABSTRACT:

Urinary tract infections (UTI) are one of the main causes of medical care consultation. A rapid diagnose is essential for correct therapy or therapy interruption when UTI is not confirmed. However, many laboratories will only report a final urine culture (UC) result after 48 hours incubation or more. The objective of this study was to compare the UC results obtained after 24 and 48 hours of incubation, and verify the association of the results with other parameters available from urine analysis (UA). UC were evaluated after 24 hours of incubation, they were re-incubated and re-evaluated after more 24 hours. Results of UA were also collected. A total of 997 urine samples were included in this study. UC results were classified as positive when there was growth equal or higher than 80.000 CFU/mL of one or two colonies of different morphology. Growth of 3 or more colonies equal or higher than 80.000 CFU/mL was considered mixed bacterial flora. Overall, there was a 97,8 % concordance of results when comparing bacterial growths after 24 and 48 hours of incubation, considering all microorganisms, which included those normally not considered uropathogens, such as Gram positive bacilli (lactobacilli and coryneform) and non-beta-hemolytic *Streptococcus*. If only microorganisms commonly defined as uropathogens were considered, concordance rate increased to 99,89 % and the only bacteria that didn't showed colonies after 24 hours of incubation was *Enterococcus* sp, which required 48 hours to develop visible colonies. The most frequent bacteria found in this study were *Escherichia coli*, *Enterococcus* sp., *Streptococcus agalactiae*, *Enterobacter* sp. and *Klebsiella* spp. Presence of increased numbers of white blood cells (WBC) and presence of microorganisms in the urine sediment were frequently found in positive urine cultures, however, we also observed negative urine cultures associated with increased leukocituria, which could be due to other pathologies. On the other hand, a positive urine culture associated with few WBC was usually related to urine contamination or colonization. In summary, the use of chromogenic medium and 24 hour incubation period seems to present high sensibility to detect most of the microorganisms generally considered uropathogens, allowing a negative result to be reported without the need for another 24 hours reincubation period, thus increasing the speed of final results for negative urine cultures.

Keywords: urine culture, urine analysis, 24 hours, 48 hours.

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