

“Is it important to obtain non contaminated urine cultures from women in the community with a UTI before treating the patient with antibiotics?” By Holly Ward

Introduction: Antibiotics are a common medication given out to patients suffering from infections. As nurses and other health care providers know, it is important to prescribe and initiate treatment as soon as possible to alleviate the infection. However, an issue that has become aware to me as a student nurse is whether or not it is important to obtain organism cultures before commencing antibiotic treatment. It seems to be a very controversial topic as yes it is important to get started on treatment immediately however it is also important to obtain a culture to single out the organism causing the infection and thus prescribe correct antibiotics accordingly.

Recommendations:

-One recommendation I have is based around education for nurses and health practitioners in the community. Microbiology labs need to educate clinicians to adhere to guidelines recommending that urine cultures not be performed for clients with first episode and acute uncomplicated UTI this will then help lead to a reduction in laboratory costs (Burd & Kehl, 2011). While microbiology is an important part in diagnosing UTI, signs and symptoms and clinical presentation are also extremely valuable, thus health professionals need to become more aware of typical signs and symptoms of uncomplicated and complicated UTI.

-In NZ the antibiotic trimethoprim is able to be prescribed OTC for UTI's (Ministry of Health, 2017), while this is convenient it means that a culture is not taken or a dipstick test thus if the infection is not actually treatable with trimethoprim the symptoms are going to continue until the patient ends up at their GP. While it is easily accessible having trimethoprim OTC at the pharmacy, maybe a different antibiotic or at least a dipstick test should be undertaken to determine what is in the urine and help with treatment.

Clinical Issue: The approach I am taking is women who have had UTIs, in the community. Women are a common group who are at risk of UTIs due to having a short urethra, and it being in close proximity to the anus thus making it easy for bacteria to ascend into the urinary tract (Minardi, D'Anzeo, Cantoro, Conti, & Muzzonigro, 2011). To clarify, a urine culture is as a microscopic study of the urine performed to determine the presence of pathogenic bacteria in patients with suspected UTI. A culture involves cultivation of micro organisms or cells in a special growth medium (Mosby, Inc, Harris, Nagy, & Vardaxis, 2014, p. 462 & 1781). For no threat of contamination, a non contaminated urine sample should be obtained, this is a sample that has been caught midstream, meaning a small amount of urine is voided first and then the sample collected, with the last amount of urine also voided. This is to make sure that any organisms are flushed away that may have been near the meatus (Dempsey, J., Hillege, S., & Hill, R. 2014, p. 1097-1098).

Literature including Implications: There are differing perspectives around taking cultures.

-Time and money is spent taking cultures

-Cultures can be beneficial to find out the specific antibiotic needed for the type of infection. For patients with severe, persistent symptoms cultures can help GPs to find out the exact type of micro organism causing the infection and thus prescribe the correct antibiotic (Bjerrum & Lindbæk, 2015).

-Overtreatment can lead to unwanted effects and overuse of antibiotics can lead to antibiotic resistance

-Dipstick testing can be carried out and the presence of leukocyte and nitrate can make it reasonable to empirically treat with broad spectrum antibiotics (VanDeVoorde, 2012).

-Uncomplicated UTI, women with no risk factors e.g. no abnormalities in the urinary tract or kidney, no underlying risks such as pregnancy or immunosuppression. A complicated UTI however includes pregnancy, abnormalities in the urinary tract or kidneys, recent antimicrobial use, symptoms for more than 7 days and immunosuppression (Wagenlehner & Naber, 2018).

Conclusion: Whilst cultures provide the best microbiological results it would be quite impossible for laboratories to test urine cultures for all the UTIs that occur in the community, not to mention the cost and burden on the healthcare system. However, it is extremely important to culture complicated UTIs, as there is risk of serious complications. Health professionals including nurses working in the community must be aware of protocols around UTIs and be able to differentiate between uncomplicated/ complicated UTIS efficiently. It needs to be reminded that antibiotic resistance is rising also and UTI treatment could be contributing.

References:

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- VanDeVoorde, R. (2012). Question 1: Is It Appropriate to Treat a Suspected Urinary Tract Infection Based On an In-office Urine Dipstick Result or Should the Specimen Be Sent for Culture? Does The Age of the Patient Have Anything to Do with The Decision? Thorofare: SLACK INCORPORATED. Retrieved from <https://search-proquest-com.op.idm.oclc.org/docview/1341930187?accountid=39660>
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Summary of rationale for doing a poster

I decided to do a poster for this assignment as I felt a poster was the most appropriate way to present my information. By presenting this information in a poster it is able to inform the public and health professionals about my issue and what is deemed best practice. Poster presentations are a great way to present information and inform people of a certain idea/topic. An article I read found that in a study at a conference, 94% of attendees agreed that visual appeal was more influential than subject content, thus poster imagery is most likely to draw viewers attention. Respondents also believed that the posters must be accompanied by their author in order to effectively communicate the academic content (Rowe & Ilic, 2009), which I agree with. A poster presentation allows a summary of a project into a concise and aesthetically pleasing format, and can be used to explain information at conferences and meetings to other peers, and can also be displayed on walls at for example hospitals and other health centres for the public to see (Gundogan, Koshy, Kurar, & Whitehurst, 2016). I feel a poster is an effective form of showcasing information, thus was my choice.

References:

Rowe, N., & Ilic, D. (2009). What impact do posters have on academic knowledge transfer? A pilot survey on author attitudes and experiences. BMC Medical Education, 9, 71. <http://doi.org/10.1186/1472-6920-9-71>

Gundogan, B., Koshy, K., Kurar, L., & Whitehurst, K. (2016). How to make an academic poster. Annals of Medicine and Surgery, 11, 69-71. doi:10.1016/j.amsu.2016.09.001

PECOT Table

PECOT Category	Information relating to question	Explanation
Population/Patient	My population for this research is women in the community	I chose this group of people as I feel they are a high risk/common group for contracting a UTI.
Exposure/Intervention	Why urine cultures should be obtained before treating a women with a UTI with antibiotics	I am interested to see whether there is much evidence around whether cultures are obtained before antibiotic treatment is started and why
Comparison/Control	Why urine cultures should not need to be obtained before treating a women with a UTI with antibiotics	I am interested to see why in some instances urine cultures would not be obtained for women suffering from a UTI
Outcome	To determine whether it is more beneficial to get the organism/bacteria cultured before prescribing antibiotics	I would like to find out whether or not it is beneficial to get the organism culture tested first before starting antibiotic therapy, and the differing views around this
Time	Time is not relevant in this situation as effects can occur at any time	N/A

PECOT is a research framework that allows the researcher to form a specific question in relation to a broad topic to make research easier. It is an acronym that describes the elements of a well formed research question (Schneider & Whitehead, 2013, p. 44). Therefore, I have used PECOT to form a specific question of “Is it important to obtain non contaminated urine cultures from women in the community with a UTI before treating the patient with antibiotics.

Reference:

Schneider, Z., & Whitehead, D. (2013). Searching and reviewing the research literature. In Nursing and midwifery research: Methods and appraisal for evidence-based practice (4th ed., p. 44). NSW, Australia: Elsevier.