Are we appropriately requesting urine culture on the basis of urine dipstick results in asymptomatic pregnant women?

Nazia Irshad, Sue Jose, Anna Darbhamulla
University Hospital of Wales, Cardiff

Background
In our department urine samples from asymptomatic pregnant women in the second and third trimester are dipped to check for the presence of protein, leucocytes, nitrates, blood and glucose when they are seen in the Antenatal Day Unit for any planned monitoring. Those testing positive for any of the above are frequently sent for culture and sensitivity. This is despite the fact that little data exists to support such a practice.1-4

Hypothesis/Aims of Study
To evaluate whether urine samples testing positive for leucocytes, nitrates, protein, blood or glucose on urine dipstick from asymptomatic pregnant women attending the Antenatal Day Unit are yielding positive results on urine culture. This has cost implications and will be useful in the production of a local guideline for requesting urine culture.

Study design, materials and methods
Data was collected prospectively from women attending the Antenatal Day Unit for monitoring in the second and third trimester of pregnancy between February to June 2011. All those who tested positive for a trace or more of leucocytes, nitrates, protein, blood or glucose on urine dipstick had a midstream urine specimen sent for microscopy and culture. The result of the urine specimen was checked on the hospital results reporting system and any urinary tract infection reported was treated with the appropriate antibiotics.

Results
539 patients had urine sent for culture during the study period, 522 results were available. Only 44/522 (8.4%) had a positive urine culture, 71/522 (13.6%) had mixed growth with no predominant organism and 407/522 (78%) cultures showed no growth.

Interpretation of results
• Sending a urine sample for culture in this asymptomatic pregnant population based on dipstick findings yielded very few positive results.
• Almost half of those testing positive for nitrates with or without leucocytes were found to have a urinary tract infection in this study sample.
• No positive MSU’s from samples sent with just trace of blood/protein/glucose or just blood on dipstick.
• 17 women testing negative for both leucocytes and nitrates had positive urine cultures.
• The greatest proportion of urinary tract infections was found in those with nitrates with or without leucocytes on dipstick (12/26, 46%).

Conclusion
A guideline is needed to direct staff as to when it is appropriate to send a urine sample for culture based on urine dipstick results in asymptomatic pregnant women.

References
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3. Antenatal care routine care for the healthy pregnant woman NICE Guideline CG62 June 2008