

## ARE WE APPROPRIATELY REQUESTING URINE CULTURE ON THE BASIS OF URINE DIPSTICK RESULTS IN ASYMPTOMATIC PREGNANT WOMEN?

### Hypothesis / aims of study

To audit whether urine samples testing positive for leucocytes, nitrites, 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 over a 3 week period between February to March 2011. All those who tested positive for a trace or more of leucocytes, nitrites, 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

There were approximately 215 women attending the day unit over the study period. 125 patients had urine sent for culture, 118 results were available. Only 16/118 (13.5%) had a positive urine culture, 13/118 (11%) had mixed growth with no predominant organism and 89/118 (74.4%) cultures showed no growth. The organisms were *E. Coli* (6/16) Enterococcus sp. (4/16) Coagulase –ve Staph (3/16) Proteus sp. (1/16), Coliforms (1/16) and Group B Streptococcus (1/16). The dipstick results of the positive urine cultures were as follows-

| Dipstick result                   | Number of positive MSU's/number sent |
|-----------------------------------|--------------------------------------|
| Protein +2                        | 4/6                                  |
| Protein +1                        | 3/21                                 |
| Leucocytes +1 Blood +1            | 2/3                                  |
| Leucocytes +3 Blood +2            | 1/1                                  |
| Leucocytes +2 Protein +1          | 1/7                                  |
| Leucocytes +3 Protein +1          | 1/12                                 |
| Leucocytes +2 Blood +4 Protein +1 | 1/1                                  |
| Leucocytes +1 Protein +1          | 1/2                                  |
| Protein +3                        | 1/1                                  |
| Nitrites +ve Protein +1           | 1/1                                  |

The number of patients testing positive for leucocytes or nitrites or protein +2 who were found to have urinary tract infections were as follows-

|                   | No of pts testing positive | No of pts with UTI | No of pts with no UTI |
|-------------------|----------------------------|--------------------|-----------------------|
| <b>Leucocytes</b> | 64                         | 7                  | 57                    |
| <b>Nitrites</b>   | 5                          | 1                  | 4                     |
| <b>Protein +2</b> | 10                         | 4                  | 6                     |

There were no positive urine cultures from samples sent with just trace of blood/protein, just blood, just glucose just nitrites, or NAD on dipstick (n=14). 8/16 women testing negative for both nitrites and leucocytes had positive urine cultures. The greatest proportion of urinary tract infections was found in those with proteinuria either alone or in combination with leucocytes on dipstick (13/16)

### Interpretation of results

Sending a urine sample for culture in this asymptomatic pregnant population based on dipstick findings yielded very few positive results. Even those testing positive for leucocytes or nitrites have only a small probability of having a urinary tract infection.

### Concluding message

There needs to be more restricted use of requesting urine culture on the basis of dipstick results for asymptomatic women in the second and third trimester.

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**Specify source of funding or grant**

NONE needed

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**Is this a clinical trial?**

No

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**What were the subjects in the study?**

NONE

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