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Abstract (poster session)

Preliminary microbiological characterisation of urine from young children submitted as part of the Diagnosing Urinary Tract infection in Young children (DUTY) study

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Objectives: Diagnosis of UTI in children in primary care is difficult and may be missed in as many as 50% of children. The DUTY study (Diagnosing Urinary Tract infection in Young children) aims to derive and validate a cost effective algorithm for the diagnosis of UTI in children <5 years presenting to primary care with an acute illness. To achieve this 7374 children presenting with an acute illness were recruited at 233 sites across the UK. We present a preliminary analysis of the urinary microbiology from these patients. Methods: Urines were collected where possible from children <5 years presenting to primary care with an acute illness and sent in boric acid to the central laboratory. Here 50 µL urine was inoculated onto UTI Chromogenic agar (Oxoid), and Blood agar using a spiral plater. After incubation for 18-24 hours, absolute colony counts of each colonial type were measured, and colonies picked for further identification and susceptibility testing using the BSAC disc method. Results: From the 7163 patients enrolled, 5107 urines were tested at the Central laboratory, of which 2972 (57.1%) grew at least 102 cfu/mL of 1 or more organisms. Of the 8066 organisms identified, the commonest were Enterococci (ECC) – 28.3%, E. coli (ECO) – 19.7%, coagulase negative staphylococci (CNS) – 17.2%, other Enterobacteriaceae – 10.4%. All CNS were novobiocin sensitive (ie not S. saprophyticus). 169 urines (3.3%) grew >105cfu/mL of a pure or predominant growth. In this group, the commonest organisms were ECO - 46.7%, CNS - 21.3%, Enterococci - 20.7%, Klebsiella/Enterobacter/Serratia (KES) – 4.7%, and Proteus spp. (PRO) – 3.6%. Antibiotic resistance rates for these organisms are given in the table. Conclusions: Bacterial growth was seen in nearly 60% of urines tested while 3.3% of urines yielded a growth of >105cfu/mL of a pure or predominant organism. ECO was the commonest organism found in pure predominant growth, but other organisms such as CNS, not usually categorized as uropathogens, were also seen in more than 20% of >105cfu/mL pure/predominant growths. It is hoped that analysis of the clinical characteristics of the patients collected in the DUTY study will enable a better categorization of organisms into uropathogens/non-uropathogens to facilitate more useful interpretation of urine samples for this age group. Resistance rates for ECO in this unselected population were high for commonly used agents and are a concern for the development of empiric treatment regimes.

Table: Percentage resistance of organisms in pure/predominant growth >10^5 cfu/mL.

	ECO (79)	ECC (35)	KES (8)	PRO (6)
AMO	59.5	0	100	16.7
COA	30.4	-	22.2	0
CFX	8.9	-	12.5	0
CPD	0	-	0	0
CIP	3.8	-	0	0
NIT	0	0	22.2	100
TMP	29.1	-	0	16.7
VAN	-	0	-	-