

P1127

Paper Poster Session

Prevention of hospital and healthcare-associated infection

Screening neonates for *Pseudomonas aeruginosa*; does it help prevent infection in babies at risk?

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Background: Following an incident in Neonatal Intensive Care (NICU) in August 2012 when 8 babies over a 10 day period were found to be infected with *Pseudomonas aeruginosa* (PA) from culture of clinical specimens, weekly screening of neonates for PA was commenced. Screening was one of several measures undertaken, including water testing and environmental swabbing, to identify potential sources of PA within the unit. The aim was to identify neonates more likely to develop PA infection and identify cross infection from other babies or the environment. There were no further clusters of colonisation or infection after August 2012 but sporadic PA colonisation and occasional infection continued to occur in NICU babies.

Material/methods: Neonates were screened for PA on arrival in the unit and weekly thereafter using the same nose, axilla, groin, wound site swabs submitted for MRSA screening. Swabs were streaked on to CLED media, cultured at 37°C and read at 24 h for presence of PA. Susceptibilities were determined by BSAC methodology (EUCAST breakpoints). Neonates colonised with PA were cohorted on the unit, no topical or systemic decolonisation treatment was given. Environmental swabs, collected from moist areas including incubators and sink plugholes, were processed as above. Water samples were collected by a validated water testing company for culture and quantification. All isolates of PA identified from screening swabs or other sources were submitted for Variable Number Tandem Repeat (VNTR) typing at PHE Reference Unit. Data on all positive isolates from neonates from August 2012-June 2015 was obtained from the ULTRA pathology system.

Results: Over 32 months, 21 different PA strains were identified in 52 out of 2213 babies admitted to the unit. 5/52 neonates acquired their PA prior to transfer to NICU. 12 babies developed PA infection, four following the first 8 babies in August 2012. None of the 40 colonised babies developed PA infection and the 4 infected babies all had only negative screens (range 1-3 screens) in the week(s) preceding their infection. VNTR typing of colonised and infected babies with matching time and location in the unit showed no evidence that neonates were acquiring strains from other neonates or from any environmental source.

Conclusions: Though screening is an established practice for MRSA management, screening of neonates for PA did not indicate which babies were more likely to develop PA infection and revealed no evidence of cross-infection from the environment or other neonates. PA screening in NICU has now ceased. Sources other than water and other colonised babies must contribute to acquisition of PA in NICU. Local data indicate that approximately 1 in 200 pregnant women carry PA in the vaginal flora and this need to be explored further as a potential source.