Are our attempts to control CPE going down the drain?

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1. Introduction

• Carbapenemase-producing Enterobacteriaceae (CPE) are of urgent public health concern.
• There is emerging evidence that contaminated drains may contribute to protracted outbreaks of CPE.
• We evaluated whether the drains of sinks and showers on a ward affected by an ongoing outbreak of CPE (Klebsiella pneumoniae OXA-48) could be a possible point source for transmission.

2. Methods

• Drains from 28 clinical wash hand basins, patient sinks and showers on a 19 bedded vascular ward were sampled.
• These were cultured overnight in enrichment broth and then plated onto selective agar for CPE.
• The drains were then treated with a 10,000 ppm chlorine solution.
• The same drains were resampled one week later.

3. Results

• 25 of the 28 drains sampled cultured positive for Gram-negative bacteria.
• Five of these were CPE with the remainder comprising a mix of mostly pseudomonads and enterobacters.
• There were no Klebsiellae among the CPEs found, but OXA-48s were identified in the Citrobacters and one Enterobacter species.
• Of the second samples, 25 of 30 were culture positive for Gram-negative bacteria and 5 of these were a CPE.
• 3 of the 5 positives were the same organism as identified in the first samples. The outbreak organism was not cultured on either round of sampling.

4. Discussion

• We did not identify the outbreak strain in the drains of sinks and showers on a ward with a protracted outbreak of CPE.
• This suggested that sink and shower drains were not a point source for transmission.
• However, the carbapenemase involved in the outbreak (OXA-48) was detected, suggesting that sink and shower drains could be a reservoir for clinically relevant carbapenemases.
• Further studies are required to ascertain the effectiveness of treating the drains and to develop protocols in order to achieve this.

References