

Emergence of *Aeromonas* spp. Harboring Multiple Carbapenemase-encoding Genes from Hospital Sewage

Sir,

In January 2016 issue of the journal, an excellent review on *Aeromonas* spp.^[1] as an emerging pathogen has been published emphasizing the importance of this enteric pathogen. We have also recently experienced the increasing prevalence of this organism in our hospital environment. A study was carried out to determine the prevalence of various enteric pathogens in hospital sewage of a tertiary care center in Varanasi, North India. Samples from 22 different sites were collected as previously described,^[2] and sewage samples were processed by membrane filtration method. Colonies of *Aeromonas* spp. were isolated on MacConkey agar and isolates were biochemically identified^[2] and type species were confirmed by 16sRNA-based polymerase chain reaction (PCR) and sequencing. Antimicrobial susceptibility testing was performed as per the Clinical and Laboratory Standards Institute^[3] and isolates were screened for the presence of carbapenemase genes by PCR (*bla*_{GES}, *bla*_{IMI}/*blm*_{NMC-A}, *bla*_{SME}, *bla*_{KPC}, *bla*_{IMP}, *bla*_{VIM}, *bla*_{OXA-48}, *bla*_{NDM}).^[4]

A total of seven *Aeromonas* isolates were identified from seven different sites comprising four isolates of *Aeromonas caviae* and three isolates of *Aeromonas hydrophila*. The antimicrobial resistance profile of the isolates was 28.57% resistance to cefuroxime, 28.57% to ceftriaxone, 28.57% to cefepime, and 42.85% to levofloxacin. All except one (No.A) isolate were susceptible to carbapenems, namely, imipenem and meropenem by disc diffusion method. However, this isolate No.A harbored the *bla*_{NDM-1} and *bla*_{OXA-48} along with *bla*_{GES} carbapenemase genes [Figure 1].

It has been stated that the carriage rate of *Aeromonas* in human gut varies from 0% to 4%.^[1] However, their increased isolation in hospital effluents which provides an excellent media for genetic exchange, being enriched with selective antibiotic pressure, is a threat to their emergence as virulent enteric pathogens. A few reports of *bla*_{KPC}-positive *Aeromonas* carriage in stool have been recently reported.^[5,6] In this case, isolate-harboring multiple carbapenemase-encoding

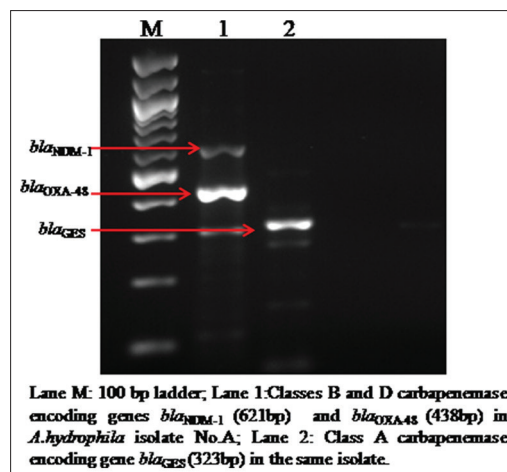


Figure 1: Polymerase chain reaction amplification of carbapenemase-encoding genes

genes simply accelerate the evolution of antimicrobial resistance in these pathogens.

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Conflicts of interest

There are no conflicts of interest.

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Letters to Editor

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