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bla_{NDM-1} possessing *Escherichia coli* and *Klebsiella pneumoniae* isolates exhibiting multidrug-resistant and pandrug-resistant phenotypes in Northeast India

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Increasing reports on New Delhi metallo- β -lactamase-1 (NDM-1) producing *Enterobacteriaceae*, particularly *Escherichia coli* and *Klebsiella pneumoniae* constitute a serious threat to global health. Although, NDM-1 was first reported in 2009 in a Swedish patient previously admitted to an Indian hospital, till the data on the NDM-1 producing *Enterobacteriaceae* in Indian hospital is limited due to constrained resources. Therefore, the present study was designed to evaluate the incidence of bla_{NDM-1} gene in *E. coli* and *K. pneumoniae* isolates at a tertiary care referral hospital in Northeast India. A total of 412 consecutive, non-duplicate isolates of *E. coli* (n=221) and *K. pneumoniae* (n=191) were recovered from various clinical samples. On the basis of their reduced susceptibility to meropenem or ertapenem, 55 (24.88%) *E. coli* and 52 (27.22%) *K. pneumoniae* were screened for detection of bla_{NDM-1} by PCR. All screened isolates were found to be positive for bla_{NDM-1}. Each of the bla_{NDM-1} possessing isolates of *E. coli* and *K. pneumoniae* was also found to be positive for one or more additional bla genes, such as bla_{TEM}, bla_{SHV}, bla_{CTX-M} and bla_{AmpC}. All the bla_{NDM-1} possessing isolates were “multidrug-resistant” as well as 56.36% *E. coli* 63.46% of *K. pneumoniae* isolates with bla_{NDM-1} were “pandrug-resistant”. In addition, few of the bla_{NDM-1} positive isolates showed reduced susceptibility to tigecycline and colistin, which extremely limits the treatment options for infections caused by NDM-1-positive isolates.

Biography

Arijit Bora has completed his PhD from Department of Biotechnology, Gauhati University, Assam, India in association with Department of Microbiology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, India. He has more than 10 years of academic and laboratory experiences in the field of Medical Microbiology. Presently, he is working as a scientific officer in the Department of Applied Sciences, GUIST, Gauhati University, Assam, India. He has published 09 papers in reputed journals and presented his research works in two international conferences.

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