Typing and Antibiogram of *Vibrio cholerae* Isolates from a Tertiary Care Hospital in Pune: A 3 Year Study

Meghna S Palewar, Archana C Choure, Swati Mudshingkar, Vaishali Dohe, Anju Kagal, Renu Bhardwaj, Abhishek Jaiswal[1], Banwarilal Sarkar[1]

Department of Microbiology, B.J.G.M.C, Pune, Maharashtra, [1]Department of Microbiology, NICED (ICMR) Kolkata, India

ABSTRACT

A retrospective analysis was done over a period of 3 years (January 2010- December 2012) in a tertiary care hospital, Pune, to note the changes in the prevalence and distribution of biotypes, serotypes, antibiotic susceptibility pattern and phage types of *Vibrio cholerae* isolates from clinical samples so as to be vigilant and curtail major outbreak in future. *Vibrio cholerae* isolates were obtained from 4.4% of the 1126 fecal specimens processed from cases of acute watery diarrhea. Majority of the isolates were identified as *V. cholerae* O1 biotype El Tor serotype Ogawa (98%); Phage 27 was the predominant type (77.5%). Majority of the cases were encountered during the months June-August (68%). Antibiogram over a period of 3 years showed that isolates were consistently resistant to Ampicillin (90%) and Furazolidone (88%). Low level of resistance was seen with Norfloxacin (8%), Gentamicin (8%) and Tetracycline (6%). All isolates were susceptible to Chloramphenicol.

Key words: Drug resistance, Phage types, *Vibrio cholerae*

MICROBIOLOGY REPORT

Cholera is endemic in different states of India resulting in substantial morbidity and mortality.[1] In the present study, retrospective analysis was carried on the strains of *Vibrio cholerae* isolated from cases of acute gastroenteritis in a tertiary care hospital at Pune during 2010-2012, in order to determine the distribution of prevalent biotypes, serotypes, phage types and the antibiotic susceptibility pattern of the isolates. Culture of specimens, identification, biochemical characterization, serotyping and antibiotic sensitivity of isolates were done as per standard technique.[2,3] Isolates obtained were sent for phage typing by conventional Basu Mukherjee and new phage typing as per procedures published earlier in authors reference laboratory NICED Kolkata India.[4,5] *Vibrio cholerae* isolates were obtained from 50 of the 1126 fecal specimens processed giving a positivity rate of 4.4% . Of the 50 patients from whose fecal sample *V. cholerae* were isolated, 62% were males and 38% were females. Adults comprised 72% of cases and 28% were children. 68% of the cases were encountered during the months June to August i.e. the monsoon months. Majority of the isolates were identified as *V. cholerae* O1 biotype El Tor serotype Ogawa (49/50) 98%. In the present study most of the isolates belonged to Phage T2 as per Basu–Mukerjee scheme and with new typing scheme T27 was the predominant phage type accounting for 77.5% of isolates followed by T26,T23 and remaining phage types were T25,T19 and T14. Antibiogram over a period of 3 years showed that isolates were consistently resistant to Ampicillin (45/50) 90% and Furazolidone (44/50) 88%. Low level of resistance was seen with Norfloxacin (4/50) 8%, Gentamicin (4/50) 8% and Tetracycline (3/50) 6%. All isolates were susceptible to Chloramphenicol.

CONCLUSION

All clinical laboratories, particularly in academic institutes, must endeavor to accumulate best possible data so that any change, phenotypic or genotypic could be detected at the earliest to curtail major outbreak in future. Also,

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Address for correspondence:
Dr. Meghna S Palewar, E-mail: meghna_palewar@rediffmail.com

continuous monitoring of drug resistance would give an alert about emergence of a new era in the history of cholera.

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