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ORIGINAL ARTICLE

CHOLERA IN BIDAR DISTRICT OF KARNATAKA STATE, INDIA

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ABSTRACT: OBJECTIVE: The purpose of this study was to investigate cholera from 2008 August to 2009 August, and create public health importance, in acute diarrhea diseases. Epidemic of cholera have been reported from various parts of our country.(1)(2) A total fecal specimen 562 were collected, isolation and identification of pathogen was done according to standard methodology.(3) Antibiotic susceptibility pattern of the isolates were studied, and picked up randomly positive 25 isolates and were sent to national institute of cholera and enteric diseases (NICED) Kolkata for confirmation and Phage typing. **RESULTS:** Of the 562 of patients 57 (10.142%) isolates were found to be positive for vibrio. Cholera o1 and non 01/non-0139, out of 25 isolates 19 (76%). The vibrio Cholera 01 ogawa serotype, biotype Eltor and phage type T 27, T 24, T 21, T 13, along with 6 isolates (24%) of Non-0139 was also noticeable as per the report of the (NICED) Kolkata. Majority of the clinical isolate were found to be resistant to more than one drug. (1)(2)
KEYWORDS: Cholera, Phage type.

INTRODUCTION: Acute gastroenteritis in low socio economic and middle class people are frequently seen. But in this acute gastroenteritis cholera out-break have been frequently reported from one or the other parts of this country. Especially during monsoon period. Sporadic cases to epidemic are seen due to lack of proper sanitation and timely preventive measures, many recent reports of cholera outbreak in various parts of Indian Sub-Continents have been due to Eltor vibrio cholera. A similar outbreak emerged in the Bidar district of Karnataka during April, May, June -2008, it is known that cholera epidemics occurs where there is admixture between drinking water, rain water with sewage water.

In the present study the isolates were vibrio cholera eltor, ogawa and NAG vibrio. Phage type Basu Mukherjee T_2 and New Scheme T_{27} were seen predominantly, apart from this T_{24}, T_{21}, T_{13} were also seen in less numbers. And NAG vibrio Non-0139 was also isolated. This study was conducted first time from Bidar district, in Govt. Medical College & Hospital (Brims Bidar). So, study gives much importance to prevent the public diseases and guide for treatment and management of the illness. Culture 57 (10.14%) were confirmed from Bidar, during the out-break a large number of acute gastroenteritis were admitted in Government Hospital (Brims) Bidar.

MATERIAL METHODS: A total of 562 patients suffering from acute gastroenteritis were admitted to Govt. Medical College and Hospital, Bidar, these patients included both children and adults, age ranging (2-60 years) and belonged to the low-socio economic group, and children are more in numbers.

These cases indicate only the tip of the ice berg, because many cases were admitted for acute watery diarrhea in the private hospital.

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The most rapid presumptive method to identify the presence of vibrio, in the stool sample is to observe for darting type of motility in the hanging drop preparation of the stool; but culture is must as culture consider as gold standard method for identification. Because sometimes there will not be seen motility due to delay in submission of clinical sample to the laboratory or improper collection of clinical sample.

Faecal specimen collected from each patient was studied bacteriologically and was identified by a standard procedures.[3] Isolates of cholera strain put on VP (Voges – Proskaur), Methyl red, Indole, Cholera red, Oxidase, Susceptility to polymxin-B (50 units). Sero typing was performed using anti sera obtained from king Institute of preventive medicine, Guindy Chennai, Antimicrobial susceptility test was carried out by stokes disc diffusion method using the following antibiotics (High Media Laboratories Mumbai, India) Teracycline (30 µg disc) chloramphenicol (30 µg disc) Amoxycillin (100 µg disc) ciprofloxacin (5 µg disc) Furazolidone (5 µg disc) co-trimoxazole (25 µg disc) and Gentamicin (10 µg disc). And randomly picked the isolate positive 25 strain of vibrio cholera were sent to National Institute of Cholera and enteric diseases (NICED) Kolkatta for cross check confirmation and sero type, bio type and phage typing.

RESULTS: Out of 562 faecal samples processed 57 (10.14%) were found positive for vibrio cholera, 39 (68.42%) isolates, belong to sero type ogawa and 18 (31.57%) isolates belong to NAG vibrio.

The isolates was also confirmed by the NICED Kolkata was out of 25 isolates 16 belong to eltor ogawa phage type T_2 in this 13 isolates belong to phage group T_{27} and 6 isolates of each two belong to T_{24}, T_{21}, T_{13} of new scheme. The remaining isolates of 6 belong to non-01/non-0139 phage type.

In our study cholera strains were isolated almost all the 12 months of the year. That means no seasonal variations, but epidemic are noticed in the month of May, June, July-2009 and Oct-2008.

DISCUSSION: In the present study 39 (68.42%) isolates were vibrio cholera 01 sero type ogawa, and 18 (31.57%) isolate were NAG vibrio non-ol/ non-0139. The phage typing was consistent with the overall country wide, epidemiological data [1] [2] which reported Type T_{27} to be predominant and with this our study revealed a high percentage of children affected in the outbreak. The main contaminating source of outbreak was traced to be the drinking water either tap water, rain water or river water with the sewage.[2]

The results of 57 isolates the resistance to more than one antibiotics was common amongst the clinical isolates, there are reports of multi drug resistant vibrio cholera appearing with increasing frequency.

The gentamicin was sensitive to all the isolated strains, and all strains are resistant to Nalidixic acid and Furazolidine.

CONCLUSION: In conclusion there is a need for continued, vigilance and planning effective strategies to provide safe drinking water and simultaneously strengthening the disease surveillance to contain the outbreak of cholera especially in the vulnerable group. And this study helps to prevent the morbidity of the people and high expenditure of the Govt. Fund which was utilizing in the management of the disease.

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