THE PRESENT STATUS OF CHOLERA INFECTION IN PAKISTAN

Pages with reference to book, From 11 To 13

K.A.Karamat, Iftikhar A. Malik, Muhammad Luqman, Zakir Hussain (Department of Pathology, Army Medical College, Rawalpindi Cantt.)

Abstract

A total of 23 cases of cholera were diagnosed between 1985-87 in the Pathology Department of the Army Medical College, Rawalpindi. All the cases belonged to different localities of Rawalpindi and no clustering of cholera cases was seen. Moreover, no common source of infection could be ascertained. Although no epidemic of cholera has been reported from anywhere in Pakistan since 1967 but the present study indicates that Pakistan continues to have sporadic cases of cholera. It is thus imperative that all cases of diarrhoea, especially when clustered must be investigated thoroughly for exclusion of cholera and if required necessary precautionary measures adopted (JPMA 38:311 , 1988).

INTRODUCTION

The epidemics of cholera have occurred in waves throughout the world but the main reservoirs of disease have been Bangladesh, India and neighbouring countries of South Asia,[1].

At the turn of 20th century, cholera was the main infectious disease in the region and between 1900 to 1927 about one million people died due to cholera[2]. Between the first and second world wars, due to some improvement in the overall standards of living conditions and sanitation, the cholera situation improved. However, during the period 1928 to 1954 sufficient number of cases of cholera occurred, out of which about half a million died of this disease[2].

At the time of partition of Indo-Pakistan subcontinent in 1947, due to mass migration of refugees across the border and breakdown of sanitary conditions, 6333 deaths occurred due to cholera in West Pakistan[3], while many more cases were reported from East Pakistan during this period (Table I).

TABLE – I. Cholera Deaths in Pakistan.

1947–1987

Year	Cases	Deaths	Year	Cases	Deaths
1947	Not Known	3832	1977	12	2
1948	”	2359	1978	0	0
1949	”	142	1979	0	0
1958	366	86	1980	0	0
1960	6704	1107	1981	4	0
1965	21	1	1982	0	0
1967	100	7	1983	2	0
1968	161	16	1984	0	0
1969	717	17	1985	6	0
1970	2	0	1986	7	0
1971	224	6	1987	10	0
Total	8295	7573		41	2

Total Deaths (7573 + 2) = 7575

However in later years situation improved in West Pakistan where no cases of cholera were reported between 1950-1957, but East Pakistan continued to be an endemic area and 036 million cases were diagnosed between 1947-1969, out of which 0.27 million died[3] (Table-II).

TABLE – II. Cholera – East Pakistan 1947-1969.

Years	Cases	Deaths	Years	Cases	Deaths
1947	32519	24912	1958	21515	15655
1948	38727	29691	1959	29977	22654
1949	27316	20942	1960	12789	09927
1950	30111	23911	1961	02752	02298
1951	21796	17817	1962	02990	02113
1952	21442	19411	1963	05555	03487
1953	29105	27132	1964	03334	02393
1954	18346	12412	1965	01936	01496
1955	16533	14096	1966	04057	01254
1956	26582	18471	1967	00962	00433
1957	10653	07002	1968	03156	00614
Total	273130	215797		96434	63880

Total Cases (273130 + 96434) = 369564

Total deaths (215797 + 63880) = 279677

Source : C.E.N.T.O. Medical Conference, London, 1978.

Cholera has always been an imported disease in West Pakistan and the present Pakistan has never been an endemic focus of it. Though no epidemic of cholera has been reported in Pakistan since 1967, present status of cholera infection is not exactly known In our country. This study was carried out to assess the present status of cholera infection in Pakistan so that a strategy could be planned to prevent further occurrence of epidemics of cholera in our country.

RESULTS AND OBSERVATIONS

Of 3321 stool samples cultured, there were only 23 isolates (0.69%) of Vibrio cholerae. During a period of two years (1985-86) 13 cases of Vibrio cholerae were isolated from stool samples while 10 were isolated in 1987. There were 5 male soldiers, 10 adult male civilians, 2 adult females and 6 children. The serology of these isolates revealed that all were V. Cholerae Eltor, biotype Ogawa.
All 23 cases were also followed up epidemiologically. These were all sporadic cases as only one member of the family suffered from the infection while others remained healthy. No specific locality of Rawalpindi area could be identified as an endemic area and no history of visit to any other city of

Pakistan by these patients could be ellcited except in one case who had recently arrived from Karachi. All the cholera cases were thus, sporadic and hailed from different localities of Rawalpindi like Tench Bhatta, Lal Kurti, Chaklala and Golra and no common source of infection could be traced in these cases.

MATERIALS AND METHODS

The study was carried out between January 1985 to December 1987 on the stool samples collected and examined at the Pathology Department of the Army Medical College, Rawalpindi.
A total of 3321 stool samples were screened for the presence of Vibrio cholerae in the Microbiology section of the Pathology Department, Army Medical College, Rawalpindi.
The stool samples belonged to both in and out patients of Military Hospital, Rawalpindi which included children as well as adults. Stool samples were received mostly in buffered glycerol but whenever there was a clinical suspicion of cholera, a separate stool sample was also collected in alkaline peptone water. The stool samples were cultured on Salmonella Shigella (SS) agar, Selenite enrichment broth, Thiosulphate Citrate Bile Salt Sucrose TCBS) and Dieudonne's media. Plates were incubated for 24 hours at 37°C and those negative for growth of any pathogen were further kept for 24 hours at 37°C. The subcultures were performed from Selenite broth into SS agar. All stool specimens were also subjected to motility test.
The suspected colonies of Vibrio cholerae were confirmed by routine sugar tests, cholera red reaction, immobiisation test and serology.

DISCUSSION

Cholera is an acute diarrhoeal disease which most likely originated in India and then spread to the other countries of Asia and Middle East[1]. Presently the true endemic centres of cholera are lower Bengal and Yangtse valley of China[3]. There are other areas in India and China which have occasional epidemics of cholera but these areas are mostly free of cholera in interepidemic periods[3]. In the Bengal basin, maintenance of endemic foci depends on case to case infection in any insanitary environmegt . The spread of cholera infection in Bengal is facilitated by the large water storage tanks and big ponds which are used for multiple purposes. The extension of cholera inland from the endemic area depends on human movement and large outbreaks have been associated with religious festivals and fairs[4]. The contamination of water supplies by cholera patients is the most important cause of endemic spread but case to case infection by contamination of fomites, food etc. presumably also plays its role.
Prior to 1971, occasional epidemics of cholera were reported from Pakistan in late fifties and sixties[3] but after separation of Bangladesh, Paldstan has not been an endemic focus of cholera. From 1951 to 1971 sporadic cases of cholera were reported from Pakistan. In these 10 years a total of 1225 cases of cholera were reported from Pakistan with 47 deaths (case fatality rate, 3.83%). However, later many years passed by without a single reported case and Pakistan was free of cholera from 1972-1976 as there was no travel or trade between Pakistan and Bangladesh.
In 1977, in the months of July and August, there were sporadic cases of cholera which were controlled very effectively by the health authori ties[3]. There Were 10 positive cases at Karachi and 2 at Rawalpindi (Personal observation). The occurrence has been reported from Pakistan in the recent past but the cholera as a sporadic disease is present in Pakistan.
As man is the only known natural host of Vibrio cholerae and some patients may become chronic carriers, the possible source of sporadic cases of cholera is the chronic carriers of cholera. The influx of some refugees from Banglade though small in number, may also be a source of spread of cholera

organisms. As no screening of stool samples is carried out in these refugees from Bangladesh, hence the possibility of their being the source of infection cannot be ruled out in big cities like Karachi, Lahore and Rawalpindi where they settle or work.

In view of the observations of the present study it is recommended that all cases of diarrhoea, especially when clustered, must be investigated by health authorities. If cholera is confirmed, infected patients should be isolated and their stools examined bacteriologically. The occurrence of large epidemics of cholera can be prevented by protecting the community's water sources from faecal contamination. The family members and other individuals taking care of a patient of cholera should be informed about the faecal-oral washing after passing stools and before eating should be emphasised to all involved in order to interrupt the cycle of cholera infection.

As during an epidemic, mass irnmunisation is generally ineffective as a control measure, only proper sanitation and improvement of personal hygiene can help eradicate cholera from the endemic areas in general and Pakistan in particular.

REFERENCES

1. Khan, M.Y. Cholera. King Faisal Specialist Med. j., 1982;2 67.
2. Pollitzer, R., Swaroop, S. Cholera,Geneva, World Health Organization, 1959.
3. Karamat, K.A. Cholera vibrio; various strains in Pakistan London, Cento Medical Conference 1978; p. 155.
4. Thomas, C.GA. ed Medical microbiology, 5th ed. London, Bailliare Tindal, 1986, p. 269.