

Acute Haemorrhagic Conjunctivitis (AHC) Epidemic of 1981

Pages with reference to book, From 245 To 246

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Abstract

During June 1981 an epidemic of acute haemorrhagic conjunctivitis occurred in the country. A distinguishing feature of this disease was subconjunctival haemorrhage which occurred in 50% of cases. There were very few complications and none affecting the nervous system were reported except for few cranial nerve palsies.

The aetiological agent, EV-70 was isolated at National Institute of Health in Hep 2-C line (JPMA 34 : 245, 1984).

Introduction

During middle of June 1981 an epidemic of Acute haemorrhagic conjunctivitis (AHC) occurred in Karachi city. It affected all age groups and was highly contagious. The clinical and epidemiological features were similar to those reported in other series¹³. This paper describes isolation and identification of the aetiological agent of Acute Haemorrhagic Conjunctivitis (AHC).

Material and Methods

Eighty conjunctival swabs (40 from Karachi, 40 from Rawalpindi/Islamabad) were taken from the patients attending out patients of the ophthalmology departments. Transport medium was used for swabs obtained from Jinnah Postgraduate Medical Centre, Karachi.

Conjunctival scraping in Virus Transport Medium (V.T.M.) were air lifted from Karachi. They were put on Afrogreen Monkey Kidney Cell Line (VERO), Primary Monkey Kidney cell (PMK) and Hep 2-C cells at 33°C and 37°C and roller drum.

Bacteriological examination and smears were stained for TRIC inclusion bodies.

The specimens put up for virus isolation on Hep-2-C (Human Laryngeal Carcinoma cell line) suggested the presence of viral agent. The isolates became inactivated possibly due to improper temperature conditions. However, neutralization test performed earlier with EV70 antiserum (WHO), 1981 lead to the conclusion that the epidemic was due to agent EV-70 (Enterovirus-70).

The specimens from Islamabad were put up for virus isolation in VERO and Hep 2-C at 33°C on roller drum. The cells were grown in Menimal Eagle Medium (MEM) with 5% Foetal Calf Serum (F.C.S.). After inoculation of the specimen the maintenance medium was MEM without F.C.S. In all 40 conjunctival scrapings were obtained. The tubes were examined for cytopathogenic effect (CPE).

Since there was no CPE till 10th day, the specimens were passed in Hep-2-C cells on roller drum at 30°C and 37°C. On 2nd passage only two specimens gave resembling Rhinovirus.

After isolation, part of the specimens were preserved in liquid nitrogen and part at - 70°C. The titre of virus was determined on Microtitre plates using the same cell line.

Neutralization with Enterovirus 70 serum was done as described by Mirkovic et al⁴. pH stability was done by the method of Grist et al.⁵ for serology a neutralization test was done on acute and convalescent phase sera.

Results

The disease had an incubation period of about 24 hours. The acute episode lasted for 2 to 3 days after which recovery began and was complete in 10-14 days.

The clinical features and complications of the disease based upon the information from various hospitals, dispensaries and health centres in and around Rawalpindi/Islamabad are given in Table-I.

Table - I

Acute Haemorrhagic Conjunctivitis (A.H.C) Cases in Rawalpindi/Islamabad (Including Suburbs).

Estimated number of cases :	80,000
Clinical Features :	
1. Bilateral eye involvement	= 70%
2. Odema lids	= 50%
3. Unilateral eye involvement	= 30%
4. Mucopurulent discharge	= 5%
5. Upper respiratory tract symptoms, general	= 3%
Complication due to bacterial infection :	
1. Severe conjunctivitis	= 25%
2. Preauricular lymphadenitis	= 60%
3. Subconjunctival haemorrhage	= 50%
4. Conjunctivitis (mild)	= 25%
5. Blotches, petechiae	= 20%
6. Keratitis	= 20%
7. Iritis.	= 2.5%

Of 40 specimens obtained from Karachi, 4 showed the presence of Enterovirus 70. However the isolates were lost due to improper preservation. From Rawalpindi/Islamabad area only 2 of 40

specimens yielded the virus. Thus there were 6 isolates out of 80 specimens of which only 2 could be preserved.

Serum neutralization titres in 10 acute and convalescent phase sera are shown in Table II.

Table II
Serum Neutralization Titres on Patient's Sera
using Isolate No. 1604.

Patient's	No.	Titre	Patient's	No.	Titre
V-1590	A	20	V-1591	A	20
	C	40		C	80
V-1592	A	40	V-1593	A	80
	C	120		C	80
V-1594	A	20	V-1595	A	40
	C	80		C	160
V-1596	A	20	V-1597	A	40
	C	80		C	40
V-1598	A	20	V-1599	A	40
	C	40		C	160

The disease was highly contagious and spread from Karachi northward to the rest of country. By the end of July, 1981 the epidemic had reached Lahore; the second largest city. In the middle of August large number of cases occurred in the Capital; Islamabad/Rawalpindi. Cases were also reported from rural areas. By end of August the epidemic had subsided.

Discussion

An epidemic of AHC was reported from Nigeria and Zaire in January 1981. In early May the disease appeared in Bombay and in middle of June 1981, it appeared in Pakistan and then to India again. In August 1981 the disease appeared in Gulf States.

In the western hemisphere the disease first appeared in Arizona in August 1981. From then on cases were

reported throughout north of South America, with over 10,000 cases in Guyana. Large number of cases were also reported from Caribbean Island, Panama and Costa Rica by middle of 1981. In the United States cases occurred in Florida in October 1981.^{6,7}

The clinical features suggest that the subconjunctival haemorrhages were observed in 20-25% cases of Gulf Emirates, 50% in India and Pakistan and 91% in the USA.^{6,8}

The disease ordinarily is considered benign unless secondary bacterial complications occur when it may leave residual damage in the eye. Radiculomyelitis, flaccid paralysis and isolated cranial nerve palsies associated with AHC have been reported from India and Japan.

No such complications have been observed in the present study however, few reports suggest that cranial nerve palsies occurred in Karachi.

The aetiological agent of AHC Enterovirus-70 is difficult to isolate. But some cases were identified at National Institute of Health, Islamabad. Isolation in U.S.A. was reported in October 1981. Various cells have been used for the isolation of EV-70^{8,9}. However, we were successful in its isolation in Hep 2-C.

The isolates were sent to National Institute of Health, Japan where comparisons were made between isolates obtained from different countries. It has been observed that the south American strain resembled the Pakistan strain but differed from strains isolated in other countries and from the original strain.

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