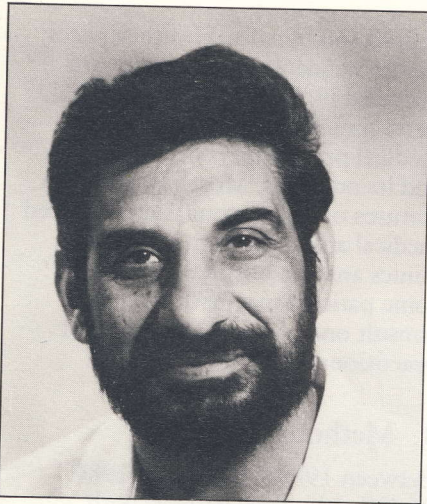


Acute Haemorrhagic Conjunctivitis (AHC) "Pink Eye" - A Adam



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Curriculum vitae

Dr Anvir Adam first did a BSc at UCT and then went to WITS where he obtained the MBChB in 1964. After some GP experience, he wrote the MFGP (SA) in 1973. He has been in General Practice for 25 years with special interests in infectious diseases, diabetes and hypertension. In 1986 he obtained a DTM & H and in 1988 a DPH at Wits, which awakened interest in epidemiology, and he is currently engaged in epidemiological studies pertaining to primary and community health care.

Summary

This study focuses on the findings of an outbreak of acute haemorrhagic conjunctivitis in Mamelodi in a general practice early in 1989. Age-sex rates are given and emphasis is placed on the management and prevention of the spread of this highly contagious disease, which has sporadically affected millions of economically active people over the past 20 years since it was first recognised as a clinical condition.

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At the present time outbreaks of acute haemorrhagic conjunctivitis are occurring in parts of South Africa. Similar outbreaks of this disease were experienced here in 1982 and 1984.

This study focuses on 108 black patients from the Mamelodi area seen at a general practice between 1989/02/09 and 1989/05/20; 73 patients were males and 35 females. During the period of study no patients were seen under the age of 8 years and over the age of 49 years. Heaviest case load occurred between 89/03/23 and 89/05/02. Age-sex specific rates showed that males in the age group 20-29 predominated. Clinical features in order of highest to lowest frequency are listed and emphasis is placed on management and prevention of the spread of this highly contagious disease.

Introduction

Acute haemorrhagic conjunctivitis (AHC) was first recognised as a new

clinical condition in 1969. The disease is caused by enterovirus 70 (EV70) and coxsackie virus A24 variant (CA24v). These two viruses are distinguished either genetically or serologically from each other. However, the diseases they cause are clinically indistinguishable and constitute the AHC syndrome.¹

The disease is very contagious and spreads rapidly, and its clinical picture is so characteristic that differentiation from other varieties of viral conjunctivitis is possible. The prognosis for the affected vision is favourable; rarely EV70 conjunctivitis is followed by a polio-like motor paralysis.^{1,5}

World Overview

As far as is known West Africa was the first region of the World to be affected by EV70 infection in 1969. In succeeding years the infection rapidly spread to various parts of the eastern hemisphere. Many parts of the western hemisphere were encompassed by the disease in the second pandemic which occurred in 1980-1982. AHC outbreaks due to CA24v were first recognised in 1970 in Singapore and probably Java, and have been localised mainly in Southeast Asia and India until recently. Today both aetiological agents are spread almost all over the world.¹

In 1984 epidemics of AHC that occurred in Antigua, Grenada, and Trinidad and Tobago continued into 1985. In 1985 an epidemic of AHC occurred in Singapore with CA24v as causative agent. A local outbreak of AHC from June to August 1986 occurred in Taiwan, also with CA24v as the causative agent.

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Acute Haemorrhagic Conjunctivitis in the Republic of South Africa

Outbreaks of AHC began in mid-March 1982, in Natal, KwaZulu, Transkei and on the Witwatersrand, mainly in Soweto.^{3,4} Further outbreaks were reported from the Eastern and Western Cape and also in the Temba-area, about 50 km north of Pretoria. Small foci of infection remained in the black townships on the Witwatersrand area and the Northern Transvaal and sporadic cases appeared until 1984-1985 when large outbreaks of

the disease occurred in many parts of the country. The incidence rate declined until 1988 and the beginning of 1989, when large outbreaks have swept several parts of the country again.

Acute Haemorrhagic Conjunctivitis in the Mamelodi area as studied from a general practice near Mamelodi

Mamelodi is a black township which lies about 21 km east of Pretoria. It has an estimated population of 174 332, of which 85 872 are males

and 88 460 females. Health services for the residents of Mamelodi are provided by the Mamelodi hospital, fixed clinics and twelve private medical practitioners in Mamelodi and its outskirts. Most patients with features of AHC would have received medical attention from one of the clinics and the hospital, although some patients may have elected to consult one of the private medical practitioners.

1. Methods

Between 1989/02/09 and 1989/05/20, 108 black patients with

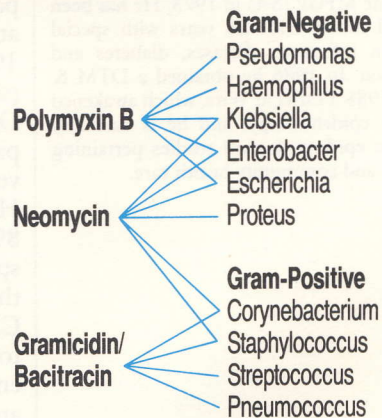
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clinical features of AHC coming from the Mamelodi area were studied at a nearby general practice. For the purposes of this study, records were kept of names and addresses of patients. The date of onset of symptoms and dates of consultation were noted, as were sex, age, household size and occupation of the patients.

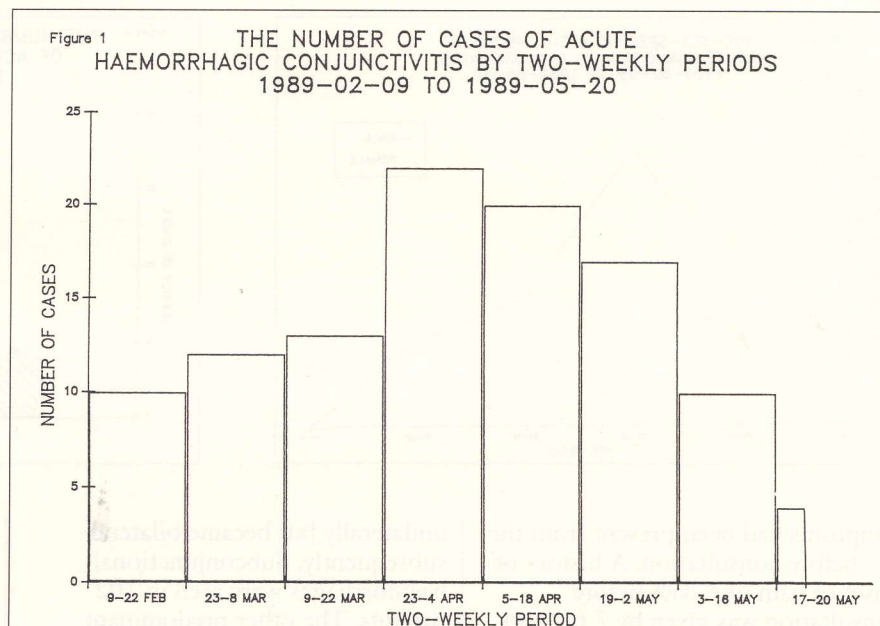
"Pink eye" was discovered some 20 years ago

Case definition was based entirely on the clinical diagnosis made by the attending practitioner. The criteria were pain, subconjunctival haemorrhages ("pink eye"), especially well seen when the patient looked downwards; eye lid swelling and oedema, foreign body sensation and irritation, photophobia, laterality and discharge.

Note was also made of the presence of pre-auricular lymphadenopathy, any unusual features and associated upper respiratory symptoms, and the presence or absence of features suggestive of a polio-like motor paralysis.⁵

2. Results

108 patients were analysed between 1989/02/09 and 1989/04/20. No patients in the age group under 8 years and over 49 years with clinical features of AHC were seen during the period of study. Patient load per two-weekly interval increased from 10 patients in the second week to 75 by the end of the tenth week of the study. Thereafter, there was a steady decline to the end of the third week



of May 1989. This is shown in Fig 1. A total of 108 patients were examined and treated for AHC; 73 of whom were males and 35 females, giving a ratio of 2,08 males to 1 female as illustrated in Fig 2. The age- and sex-specific attack rates for the patients are reflected in Fig 3.

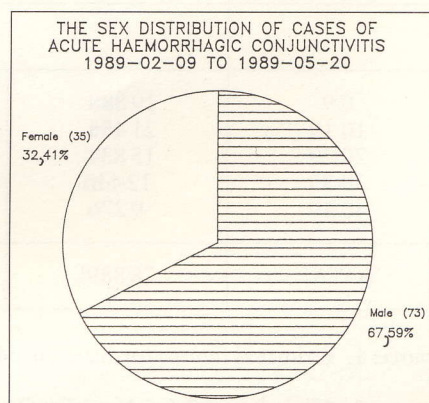
Very contagious and spreads rapidly

Males showed a consistently higher attack rate, being most marked in the 20-29 year age group (Table 1). The age-specific attack rates for both sexes show a similar age distribution, peaking in the young adult age groups and falling off with increasing age. This largely corresponds with the finding in the Soweto study.⁴

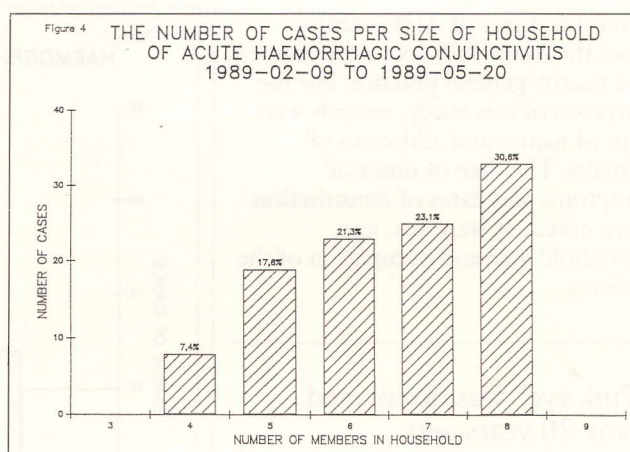
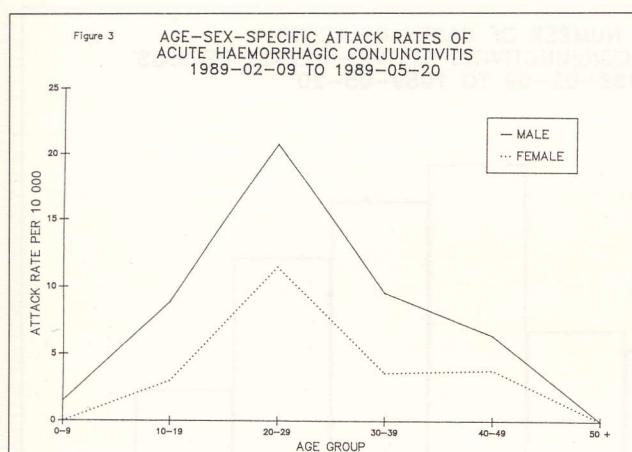
It was found that 7,4% patients came

from households that had four members per household, 17,6% from households having 5 members in each household, 21,3% 23,1% and 30,6% from households having six, seven and eight members per household respectively. This is depicted in Fig 4.

In 47 patients, symptoms had commenced 2 days before date of consultation; in 41 patients



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symptoms had been present from the day before consultation. A history of onset of pain of 4 days before consultation was given by 7 patients, whilst 13 patients were not sure of the date of onset of pain.

3. Clinical Features

All patients seen complained of eye pain. In 27 patients pain commenced

unilaterally but became bilateral subsequently. Subconjunctival haemorrhages were seen in 102 patients. The other predominant features were foreign body sensation and irritation, eye lid swelling and oedema, and discharge. In 63 patients discharge was profuse and watery from the start but in 45 patients the discharge was seromucous initially. This caused the eyelid stickiness but

cleared to a profuse watery discharge after 2 days. In Table 2 the clinical features are tabulated, showing in decreasing order the frequency of clinical features presented by the patients.

4. Management

Specific treatment and a vaccine are not available for this self-limiting

Table 1: Age-sex specific attack rates of Acute Haemorrhagic Conjunctivitis at a general practice near Mamelodi, February 1989 - May 1989

Age Group	Estimated Population	No	Attack Rate/10 000	Estimated Population	No	Attack Rate/10 000
	Males			Females		
0-9	19 888	3	1,5	20 043	0	0,0
10-19	21 455	19	8,9	23 411	7	3,0
20-29	15 834	33	20,8	17 327	20	11,5
30-39	12 446	12	9,6	13 866	5	3,6
40-49	9 276	6	6,4	7 914	3	3,8
TOTAL	78 889 ¹	73 ²	9,3	82 561 ¹	35 ²	4,2

Source: 1. Estimated figures for Blacks in Mamelodi based on the 1985-Census, for 1989

2. Clinical records of the author. Dr A Adam, General Practice, Silverton, 1989.

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Table 2: Clinical features in 108 patients with AHC

Features	No of Patients with features/ No of Patients examined (studied)	Percentage
Pain	108	100,00
Haemorrhages (subconjunctival)	102	94,4
Lid oedema & swelling	94	87,0
Irritation & Foreign body sensation	89	82,4
Laterality: Bilateral Discharge	81	75,0
Watery	63	58,3
Seromucous	45	43,5
Pre-auricular lymphadenopathy	34	31,4
Laterality: Unilateral	27	25,0
Unusual features, (eg otitis media subcutaneous haemorrhages)	4	3,7
Upper respiratory tract symptoms	23	26,8
Complications	0	0,0

Source: 1: Clinical records of the author. Dr A Adam, general practice, Silverton, 1989.

viral disease. Subjective relief is obtained by frequent irrigation of the eyes with saline solution and instillation of anti-histamine eye drops. Vasoconstrictor eye drops may be used to reduce swelling and oedema. Antibiotics should be used only if secondary bacterial infection is present, ie, if there is evidence of purulent discharge. Topical application of corticosteroids is contraindicated because of their well known side effects.⁶ Preliminary trials with human interferon B eye drops have shown no favourable influence on the clinical course of AHC.⁷

Contact lenses should not be worn during the illness as they may irritate the eyes; damage to soft lenses can also be caused by instillation of eye drops.⁸ Spread of the disease should



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be prevented by isolating patients with AHC from school and place of employment. The severity of the disease should determine the period of isolation as the duration of the infectious period is not known. Usually isolation of patients lasts for 4 to 6 days.

Health education of the population at risk as to the nature of the disease is important. Emphasis should be placed on the prevention of spread of the disease; personal hygiene needs to be stressed: frequent washing of eyes, not using communal towels, not sharing eye drops from the same

Millions of economically active people have been affected

bottle, and refraining from touching and rubbing the eyes. The uninfected should avoid contact with other 'pink eye' sufferers. Hostels and places of work need not be closed as the course of an outbreak will not be significantly affected by this action.⁸

Discussion

All patients under discussion with clinical features of AHC were seen at the same general practice during the period 89/02/09 and 89/05/20. The patient load during this study was reminiscent of the 1984-1985 outbreak in Mamelodi. This view was shared by three other general practitioners who also see patients from the Mamelodi area.⁹

During an outbreak it is not difficult to make a diagnosis of AHC because the clinical features of the disease are so characteristic. School children and

the economically active group of people were affected, with an attack rate being higher in males than that for females.

Crowding is considered to be a risk factor in the spread of acute haemorrhagic conjunctivitis.² Unfortunately, the distribution of households by size of household was unobtainable in respect of the Mamelodi area. A proportional distribution of 108 cases of AHC by size of household is shown in Fig 4. Although suggestive of a relationship between incidence and crowding, this argument clearly does not hold in their case, because it may merely be a reflection of the distribution of household size in Mamelodi.

Conclusion

Twenty years have passed since the discovery that EV70 and CA24 are aetiological agents of outbreaks of AHC. Millions of people were affected by this disease in the pandemics that occurred. Sporadic outbreaks all over the world continue to affect large groups of the economically active population. There is a great need for education of the general public and health personnel in order to ensure proper management and prevention of spread of the disease.

Vigilance as to the detection of neurological complications associated with AHC is important and should be borne in mind by the attending practitioner.

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