Brit. J. Ophthalm. (1955) **39**, 540.

TREATMENT OF VERNAL CONJUNCTIVITIS*

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THE aetiology of vernal conjunctivitis is not yet established apart from a supposed association with "allergy". Fibrolysin (Luedde, 1920), acetic acid, lactic acid (Tontscheff, 1929), chaulmoogra oil (El-Tobgy, 1933), and other classical "magic eye-drops", have all proved useless. No specific therapy has been found apart from palliatives till the disease subsides of its own accord.

The clinical aspect of the disease has already been dealt with (Alimuddin, 1955); in the following study the effects of various therapies are evaluated.

Material

The study is based on 1,050 cases, 350 each of the irritative, limbal, and palpebral types, and extends over a number of years.

Methods

Every case was subjected to the following investigations (Table I):

- (a) Complete blood picture.
- (b) Repeated stool examination for worm infestation.
- (c) Conjunctival scrapings stained with Leishman's stain for eosinophils†.
- (d) Ear, nose, throat, and skin examination for evidence of allergy.

TABLE I
INVESTIGATIONS

No. of Cases	Eosinophils				Intestinal Worms	Allergy				Negative Findings		
	Blood (4 to 12 per cent.)		Conjunctiva (4 to 15 per field)			E.N.T.		Skin				
	No.	per cent.	No.	per cent.		No.	per cent.	No.	per cent.			
1,050	491	40	945	90	368	35	94	9	158	15	31	3

Therapy

General

(a) *Climatic*.—Through economic and other factors only twenty cases of each type were studied (Table II). Change of climate by going to hill stations (Abbottabad and Murree) was found to be more efficacious than the use of drugs. It gave immediate relief, but a short stay in the hills often led to a worse relapse. A whole summer spent in the hills aborted the irritative type of conjunctivitis and prevented its recurrence in subsequent summers, but other types, though relieved temporarily, were not prevented from recurring.

*Received for publication May 13, 1955.

† Blood eosinophils up to 3 per cent. and conjunctival eosinophils up to three per field were taken as normal.

TABLE II
EFFECT OF HILL STATION ON RELAPSE

Type of Affection	No. of Cases	Relief of Symptoms (per cent.)	Relapse next Summer (per cent.)
Irritative	20	100	5
Limbal	20	80	90
Palpebral	20	65	95

(b) *Allergic*

(i) *Diet*.—Each patient was asked to name the food-stuffs which he thought aggravated his symptoms, but only 142 patients (14 per cent.) gave positive answers. Onion topped the list, spices came next, and beef, eggs, tamarind, citrus beverages, and brinjal were also blamed.

(ii) *Intestinal Infestations*.—368 cases (35 per cent.) showed intestinal infestation (ascariasis, ankylostomiasis, amoebiasis). Adequate intestinal treatment cured a certain percentage of cases, in comparison with the control cases (twenty of each type) to whom no treatment was given (Table III).

TABLE III
EFFECT OF INTESTINAL TREATMENT ON RELAPSE

Type of Affection	No. of Cases	Percentage		
		Relief of Symptoms	Relapse next Summer	Relapse in Control Cases
Irritative ...	125	90	20	95
Limbal ...	110	75	40	100
Palpebral ...	133	30	80	100

(iii) *Skin and E.N.T. Allergy*.—This was found in 15 and 9 per cent. respectively. Most of the skin cases showed seborrhoea of the scalp and eyelid margins (60 per cent.). The commonest E.N.T. affection was chronic vaso-motor rhinitis. Treatment of these disorders had a remarkable effect in relieving the eye symptoms and preventing their recurrence (Table IV).

TABLE IV
EFFECT OF SKIN AND E.N.T. TREATMENT ON RELAPSE

Type or Affection	Treatment							
	Skin				E.N.T.			
	No. of Cases	Relief of Symptoms	Relapse next Summer	Relapse in 10 Control Cases	No. of Cases	Relief of Symptoms	Relapse next Summer	Relapse in 10 Control Cases
Irritative	90	100	Nil	100	64	100	8	100
Limbal	32	90	15	100	12	86	20	100
Palpebral	36	90	20	100	12	84	25	100

Medicinal.—The drugs were used topically as drops, ointment, or by subconjunctival injection from March to September. Each drug was used in twenty cases of each type, and twenty control cases of each type were given normal saline drops or injections (Table V).

TABLE V
EFFECT OF DRUGS ON RELAPSE

Drug	Type of Affection (per cent.)											
	Irritative				Limbal				Palpebral			
	Relief of symptoms	Cured	Relapse next summer	Relief in control cases	Relief of symptoms	Cured	Relapse next summer	Relief in control cases	Relief of symptoms	Cured	Relapse next summer	Relief in control cases
Adrenaline	100	50	50	95	60	Nil	100	100	40	Nil	100	100
Antistin	100	65	35	90	65	20	80	100	10	Nil	100	100
Cortisone	100	75	25	90	70	50	50	100	40	25	75	100

(a) *Adrenaline Drops (four times daily):*

Liq. adrenaline B.P. dr. 1
Boric acid gr. 15
Aqua dist. ad oz. 1

(b) *Antistin (2 phenyl-benzyl-aminomethyl-imidazole).*—0.5 per cent. solution four times daily as drops. Tablets of 0.1 g. three times daily were also used, but showed no advantage over local application.

(c) *Hormones.*—Encouraging reports are now available of the beneficial effects of corticotropin, cortisone, and hydrocortisone in allergic affections of the eye (Duke-Elder and others, 1951; Woods, 1952; Gordon and others, 1953).

It was found that cortisone (17-hydroxy-11-dehydro-corticosterone acetate) had better clinical effects than other drugs of this group. Topical or subconjunctival injection was as good or even slightly better than systemic administration. It was used as 1 per cent. solution or ointment four times daily, or 10 mg./ml. subconjunctivally weekly. Subconjunctival injections produced subconjunctival crystallization and nodule formation if the drug were not slightly warmed and the injection followed by heat to the eye.

The irritative type responded equally well to drops or ointment. The limbal and palpebral types responded better to ointment and subconjunctival injections. Ointment is better than drops because it stays longer in the conjunctival sac and is not readily washed away by tears. The effect of cortisone on the relief of symptoms was remarkable. Within 48 hrs, the photophobia, itching, and redness subsided, and the milky appearance and swellings showed a marked reduction; in about 3 weeks, the condition passed into a subclinical state.

After some time the conjunctiva became insensitive to all these drugs and required a change of medication. This resistance was least with cortisone and greatest with adrenaline.

Radiational.—*Gamma* rays of radium, and *beta* and *x*-radiations have been used in vernal conjunctivitis with varying results (Robinson, 1929; Lederman,

1951; Iliff, 1951). In the present series, only *x*-radiation was used; the technique followed was that of Lederman (1951). Only those cases which showed no response to other recognized forms of therapy or which were likely to require surgery were selected.

Ten cases were given "whole-eye" radiation: 60kV, 2mA, filter 1 mm. A1, focus-skin distance 4 cm., 20r weekly for 6 weeks.

Ten others were given "tangential anterior segment" radiation to the swellings in the lids or at the limbus: 100kV, 5mA, filter 0.1 mm. Cu, focus-skin distance 30 cm., field size 2×1 cm., 20r weekly for 6 weeks.

The results were not encouraging (Table VI), and neither method showed any advantage over the other.

TABLE VI
EFFECT OF *X*-RADIATION

Technique	No. of Cases	Result (per cent.)	
		Relief	Failure
Whole-Eye	10	30	70
Anterior Segment ...	10	20	80

Comment

A change from a hot to a cold climate was found to be by far the best palliative (Table I). Heat and a dusty, dry atmosphere aggravate the condition, which is not as common in the humid climate of East Pakistan as in the dry, hot climate of West Pakistan.

Much has been written about pollens, animal inhalants, asthma, hay-fever, and vaso-motor rhinitis (Lagrange, 1922; Townsend, 1923; Weinstein, 1931; Mamoli, 1930), but diet has so far received little attention.

Diet was claimed by the patients to be a factor in the recrudescence of symptoms in 14 per cent. of cases. How this is brought about—whether by exogenous or endogenous sensitization, or by a mere reflex action—is not known. Onion may be taken to irritate the eyes by its volatile vapours, and spices and foods by reflex action.

The association of vernal conjunctivitis with intestinal parasites, and skin and E.N.T. allergy is well known. The effect on vernal conjunctivitis of treating these associated conditions was remarkable (Tables III and IV), the degree of relief and control of the relapse rate being approximately equal to that achieved by cortisone therapy. It is therefore worth searching for and treating these associated allergies.

The irritative type of conjunctivitis is readily amenable to treatment, while the palpebral type is the most recalcitrant. In an early case most drugs (adrenaline, ephedrine, Privine, Phenergan, Antistin, etc.) produce good results, but soon the conjunctiva becomes insensitive and they fail to excite a good response. Cortisone is the drug of choice, in this respect

both as palliative and as curative (Table V), but it has to be used for the whole season from March to September to be of real value, and no good is done by using it haphazardly. Cortisone is the only drug which was found to be of value in the palpebral type; it gave 40 per cent. relief and 25 per cent. cure where other drugs had totally failed.

In the few cases studied, the results of x-radiation were not at all encouraging, but this may be tried as a last resort when other forms of therapy have failed.

Summary

The treatment of 1,050 cases of vernal conjunctivitis is analysed. Certain articles of diet (onion, spices, beef, eggs, tamarinds, citrus beverages, and brinjal) were reported by the patients to aggravate their symptoms. The treatment of associated intestinal worms, and skin and E.N.T. allergies, and the topical use of cortisone gave the best palliative and curative results.

Thanks are due to Lt-Gen. W. A. Burki, C.B.E., D.G.M.S., and Maj.-Gen. M. N. Mahmood, D.M.S., for their permission to publish the statistics, and to Dr. S. M. Jaffar, Reader in Dermatology, for his valuable advice.

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