A study to compare the use of fusidic acid viscous eye drops and chloramphenicol eye ointment in an accident and emergency department

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SUMMARY

A total of 300 patients attending an Accident and Emergency department with ophthalmic complaints needing topical antibiotic treatment were treated with fucithalamic or chloramphenicol (chloromycetin). Their compliance and the incidence of side effects were assessed.

There was a 70.3% response rate to the questionnaire. Of the patients 51.3% using fucithalamic completed the 5 day course compared with 37.2% of those taking chloramphenicol. However, no patients were found to have suffered as a result of failing to complete the course. The incidence of side effects was similar in both groups.

INTRODUCTION

Chloramphenicol eye ointment 1% (Chloromycetin) is used widely for treatment and prophylaxis against eye infections in Accident and Emergency departments. It is usually given q.d.s. as a 5 day course. Fusidic acid is now available in a sustained release preparation as viscous eye drops (Fucithalamic 1%); it is administered b.d. and has been shown to have an adequate antimicrobial spectrum (Hansen, 1985, Van Bijsterveld *et al.*, 1987). The hospital prescribing cost is approximately 50% more than Chloromycetin. The ease of administration of Fucithalamic and the b.d. dosage may increase patient compliance, especially in those conditions with short lived discomfort such as following removal of foreign bodies. The aim of the study was to assess patient compliance and side effects for both drugs in patients attending an A&E department with a variety of eye conditions.

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METHOD

A total of 300 patients attending the A&E department at Royal Preston Hospital with eye complaints requiring antibiotic treatment or prophylaxis were included in the study e.g. foreign bodies, bacterial conjunctivitis, corneal abrasions and arc eye. The categories of patients excluded from the study are listed in Table 1.

Treatment was randomly allocated on the basis of their A&E registration number. Those with even numbers were given chloramphenicol and those with odd numbers fucithalamic. The small group of patients who had complaints affecting both eyes were asked to use chloramphenicol in the right eye and fucithalamic in the left eye. Each patient was shown how to use the ointment and told to apply it for 5 days — the chloramphenicol q.d.s. and the fucithalamic b.d.

All patients were told that they would be sent a questionnaire following treatment; they were not told that their compliance would be monitored. The questionnaires were sent out 4 days after their initial visit. The questionnaires asked how many days they had used the treatment for and, if they had failed to complete the 5 day course, the reasons for this. They were also asked what side effects they had experienced if any.

All the patients notes were checked after 1 month to identify any that had returned with problems from the treatment.

RESULTS

Of the 300 patients, 160 received fucithalamic, 124 chloramphenicol, and 16 had bilateral complaints. The incidence of different conditions was similar in both treatment groups. A total of 211 (70.3%) of the patients replied to the questionnaire. The reply rate was similar in the groups receiving each treatment; 71.8% for those who had fucithalamic and 69.3% for those who had chloramphenicol. In the group of patients who had corneal abrasions there was a 91% response rate.

The percentage of patients completing the course was 51.3% for those taking fucithalamic and 37.2% for those taking chloramphenicol ($P < 0.05$ using X^2 with Yates correction) see Table 2.

The reasons given for failing to complete the course were similar in both treatment groups, as was the incidence of the various side effects (see Tables 3 & 4.)

There were 8 patients with bilateral complaints who answered the questionnaire,

Table 1 To show the categories of patient excluded from the study.

(1) Allergy to either drug
(2) Use of either drug in the last 10 days
(3) Under 16 years old
(4) Previous eye pathology e.g. glaucoma, surgery.

Table 2 To show the percentage of patients completing the course of treatment for the different diagnostic categories. (Actual numbers in brackets.)

	Complaint			
	FB	Conjunctivitis	Abrasion	Others
% completing course or more – Chl. (32/86)	39% (19/49)	42% (5/12)	35% (8/23)	(0/2)
% completing course or more – Fuc. (59/115)	47% (34/73)	69% (9/13)	54% (15/28)	(1/1)

Table 3 Showing the reasons given by patients for failing to complete the 5 day course. Some patients gave more than one reason. (Actual numbers in brackets.)

Reason	Treatment given	
	Fucithalamic (56)	Chloramphenicol (54)
Condition better	82% (46/56)	87% (47/54)
Awkward to apply	13% (7/56)	15% (8/54)
Side effect	29% (16/56)	32% (17/54)

Table 4 To show the incidence of side effects experienced by patients.

Side effect	Treatment Group	
	Chloramphenicol	Fucithalamic
Itching	4%	2%
Stinging	11%	18%
Discomfort	7%	4%
Blurring	20%	13%
Other	4%	5%

of these 5 stated that they preferred fucithalamic (not significant). Their results were not included with those patients having unilateral complaints.

When the notes were reviewed at 1 month, 6 sets of notes were untraceable. Of the 294 found there were 3 medication changes, 2 patients with conjunctivitis had not responded to chloramphenicol and had been changed to fucithalamic, and one case where chloramphenicol had caused irritation and the patient had been changed to fucithalamic.

DISCUSSION

The results of this study demonstrate that there was a significantly higher percentage

of patients completing the fucithalamic courses than the chloramphenicol. However, no patients from either group returned with problems attributable to failure to complete the recommended course of treatment.

The incidence of side effects with both drugs was very similar, with fucithalamic causing more stinging and chloramphenicol more blurring. This correlates with other studies (Sinclair & Leigh, 1988).

Fucithalamic appears to offer some advantages over chloramphenicol. It is given as a twice daily dosage, is easier to apply and causes less blurring of vision which is more acceptable to patients, especially those who are still working. No serious side effects have been reported from fucithalamic but there have been several reports of aplastic anaemia following ophthalmic use of chloramphenicol (Dutro, 1981; Fraunfelder *et al.*, 1982; Stevens & Mission, 1987; Baruhart, 1988) ophthalmic use of chloramphenicol. This reaction appears not to be dose related, occurs weeks to months after treatment and is very rare as only a few cases have been reported in the world literature yet chloramphenicol is in widespread use in ophthalmic preparations. There is some controversy in the literature as to whether these cases of aplastic anaemia are due to chloramphenicol (Flach, 1982).

The main disadvantages of fucithalamic are its higher cost and its possible efficacy with a 12 hourly dosage interval. However, we had no clinical treatment failures in this study. Pharmacokinetic studies have shown the concentration in the tears to be greater than the minimum inhibitory concentration (MIC) at 12 hours to most, but not all, common pathogens and a further (Van Bijsterveld *et al.*, 1987) study also showed that the concentration achieved in the aqueous humor is comparable with that achieved with systemic administration of fucidin (Hansen, 1985).

These results show no outstanding benefit for fucithalamic over chloramphenicol. In view of the higher cost of fucithalamic we are not changing from our current use of chloramphenicol as antibiotic of first choice for ophthalmic treatment.

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