

A comparison of the treatment of otitis externa with 'Otosporin' and aluminium acetate: a report from a services practice in Cyprus

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SUMMARY. We studied 126 cases of otitis externa among the population of a British forces base in Cyprus during one season. The causes of infection, the infective agents involved and the treatment of the observed cases in general practice are discussed. The patients were treated with either antibiotic/steroid ear drops ('Otosporin') or with aluminium acetate ear drops. We found no significant difference between the two.

Introduction

OTITIS externa is a common problem in UK general practice (Price, 1976), but is more prevalent in a hot climate and in association with swimming and diving, particularly in dirty water. In our practice the problem of a substantial number of cases during the summer months prompted us to review the diagnosis and management of this condition.

As with many other conditions, the textbook picture of hospital experience of otitis externa is not appropriate to general practice. The severe, chronic case with multiple recurrences, persistent heavy discharge and skin changes around the meatus will be seen much less frequently than a tender, itchy ear with or without other signs of infection. Regular attendance for cleaning the external meatus may be inappropriate or impractical. Although the condition may resolve with keeping the ear dry and attending to hygiene, this will not always be acceptable, particularly in children, and ear drops may have to be prescribed for use at home. There is no good reason for the indiscriminate use of multiple combinations of topical antibiotics and steroids, and there may be risks in so doing (*Lancet*, 1976). For this reason we chose to compare a simple preparation of aluminium acetate with 'Otosporin', using both in the same way. No other treatment was used.

Method

The study population consisted of all servicemen and dependants looked after by the garrison medical centre at Episkopi and the families' medical centre at Berengaria. These are a few miles apart on the southern coast of Cyprus. At the time of the study the combined population was 4,200; there were many children and young adults. All cases were seen by one of three medical officers on presenting at the medical centres, and the diagnosis was made on what the meatus looked like, whether there was inflammation (with or without discharge) and pain on pressure on the tragus, and if there was no history or symptoms of middle-ear pathology. If infected wax or discharge blocked the meatus, the ear was cleaned to inspect the eardrum, but no other cleaning was routinely attempted. Swabs were sent directly to the laboratory in transport medium; fungal as well as bacterial infection was looked for.

Cases were allocated at random to one of two treatment groups, one being given ear drops of polymixin, neomycin and hydrocortisone ('Otosporin'), the other aluminium acetate ear drops BP. A few patients also needed paracetamol or 'Distalgesc'. Both groups were given written instructions to use the ear drops three times daily, to keep the ear dry and to avoid cleaning the ear canal. In the absence of complications patients were seen at least every seven days, and the initial medication continued for 14 days unless a marked deterioration in symptoms made further action necessary, or the ear was healed. The ear was considered to be healed if it was free from symptoms and appeared normal on examination. If there was no improvement after two weeks, the medication was changed and further treatment begun as necessary.

Results

During the seven months of the study we saw a total of 126 cases in 270 consultations, a rate of 30 per thousand

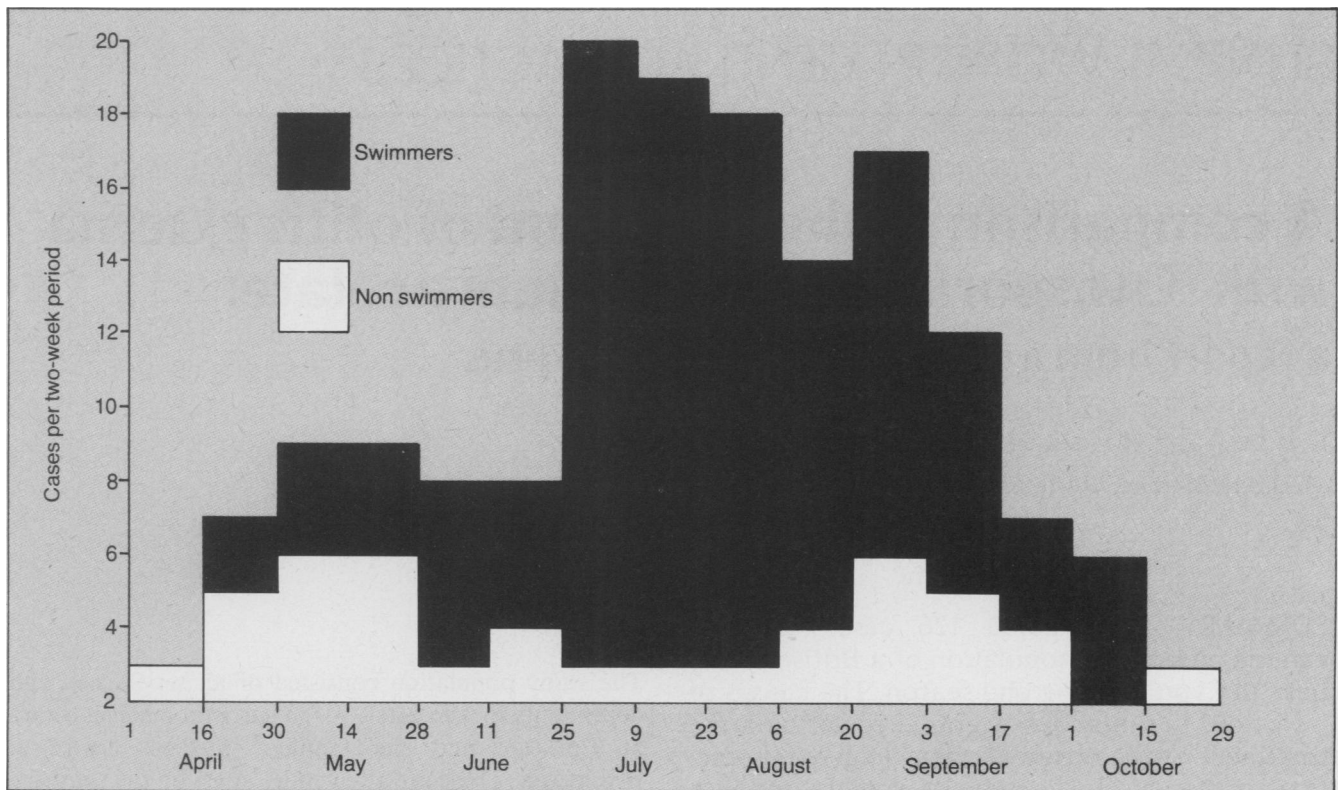


Figure 1. Seasonal variation, swimmers and non-swimmers.

of the population. Twenty-seven said they had had a similar episode in the previous year, but there was little recurrence during the study period, and only two people had more than one attack. On average, patients waited 4.5 (± 2.3) days before coming to see us and the time from first consultation to resolution was 10.3 (± 4.1) days.

Figure 1 shows the seasonal variation. Non-swimmers as a group do not show a seasonal fluctuation. The age and sex distribution (Figure 2) reflect the structure of the practice and show that the condition is a problem in adults and children alike (Price, 1976). We found no correlation between age and presenting symptoms (Table 1), recurrence or response to treatment. Nearly 80 per cent of cases had been swimming the week before onset of symptoms, but no single beach or pool could be incriminated. The levels of chlorine and bacteria in the pools under service control remained satisfactory during the study period. There was no significant correlation with ear syringing, occupation or underlying dermatological problems. The organisms isolated from the swabs taken are shown in Table 2. *Pseudomonas* was the most commonly isolated species; it has already been noted that *Pseudomonas* is more common in swimmers (Hoadley and Knight, 1975) and has caused outbreaks in populations exposed to contaminated pool water (Weingarten, 1977). We noted that the incidence of non-swimmers in the *Pseudomonas* group was significantly lower (Table 3) and that the mean age of those

with a *Pseudomonas* infection was significantly higher (22.8 years against 18.4 years). Few fungal infections were found, and none was diagnosed by the classical appearance of matted fungal hyphae in the ear, perhaps because patients did not usually wait long before coming to see us.

Comparison of aluminium acetate and 'Otosporin' drops

All cases were entered in the trial. In a closed community with one practice, the follow-up rate was high and only nine cases were lost. Of the remaining 117, 108 (92.3 per cent) were successfully treated with the initial medication (Table 4). The time taken for symptoms to resolve was established in 59 cases (Table 5). When the condition of the affected ear failed to improve after 14 days, or deteriorated, or the medication proved unacceptable, then the treatment was changed as follows.

Initial treatment with 'Otosporin'

Six patients deteriorated over a period of between five and 14 days. Three were treated with aluminium acetate and improved, and three went on to develop chronic infection requiring regular attendance for cleaning and insertion of wicks.

Initial treatment with aluminium acetate

No cases showed a deterioration during the period of

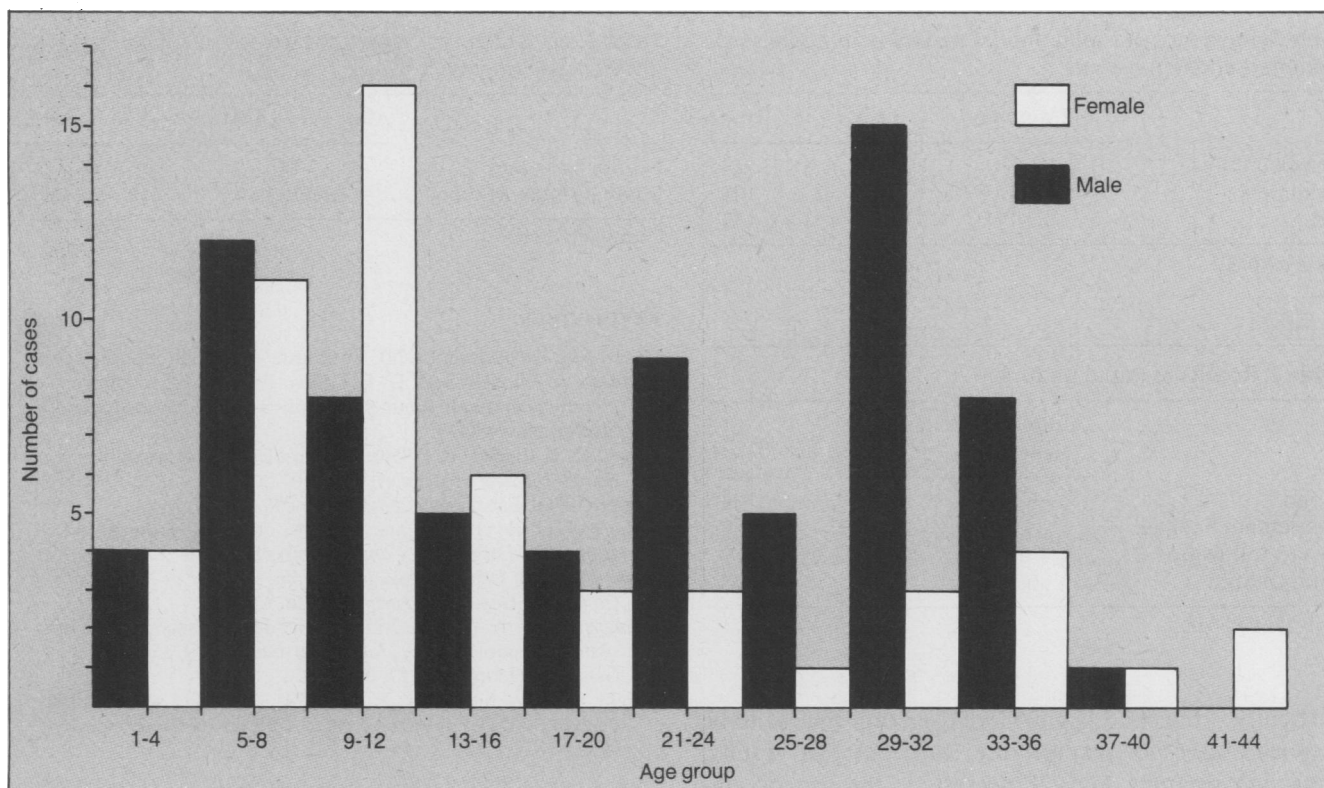


Figure 2. Age-sex distribution of cases (n = 126).

Table 1. Incidence of presenting symptoms (number of patients = 126).

	Cases	Per cent
Pain	116	92
Deafness	39	31
Itching	20	16
Discharge	23	18
Other	2	2
Total symptoms	200	

Table 2. Organisms isolated from swabs taken.

	Cases	Per cent
<i>Ps. pyocyanea</i>	42	34
<i>Staph. aureus</i>	25	20
Coliforms	10	8
<i>Bacillus</i> spp.	1	0.8
<i>Proteus</i> spp.	1	0.8
B-haemolytic strep.	1	0.8
Mixed growth	2	1.6
No growth	40	32
<i>Monilia</i>	2	1.6
Total	124	

treatment. Three patients asked for the treatment to be changed because the drops stung too much; all improved on 'Otosporin'.

There was no significant difference in the failure rate of the two drops (Table 4) or in the time taken to effect a cure (Table 5).

Discussion

This study of otitis externa shows it to be a fairly common condition which in most cases prompts an early appointment for medical advice. The pattern of the disease as observed is therefore different from that

seen in ENT departments and the severe infections found in tropical regions. Usually the complaint is of pain without discharge, and on examination the meatus is found to be congested or slightly swollen with absence of normal wax. The degree of irritation or discomfort may be out of all proportion to appearance. This stage represents damage to the meatal skin, which may be from foreign bodies, ear syringing, prolonged contact with water—which need not be infected (Wright and Alexander, 1974)—or other causes. With time this may resolve or go on to acquire secondary bacterial or fungal infection.

Diagnosis is not usually a problem, although the presence of a heavy discharge in a child can cause

Table 3. Incidence of *Pseudomonas* and other infections in swimmers and non-swimmers.

	<i>Pseudomonas</i>	Other	Total
Non-swimmers	2	27	29
Swimmers	30	76	106
Total	32	103	135

0.05 > p > 0.001.

Table 4. Results of initial treatment.

	Aluminium acetate	'Otosporin'	Total
Cured	59	49	108
Treatment changed	3	6	9
Lost to follow-up	3	6	9
Total treated	65	61	126

p = 0.2924 >> 0.05.

difficulty if the child is unwilling to permit the ear to be cleaned fully to inspect the eardrum. In adults, thorough cleaning and, if necessary, the use of aluminium acetate wicks for 24 hours usually reduces the swelling sufficiently.

We did not often find that bacteriology was helpful in management, nor could conclusions about the organisms present be drawn routinely from the appearances of the ear. The common pathogens—*Pseudomonas*, coliforms, *Staph. aureus*—were those noted to be the most common, in various proportions, in other papers (Keogh and Russell, 1956; McDowall, 1974; Price, 1976; Hoadley and Knight, 1975; *Lancet*, 1976). We believe the high proportion of swabs with no growth represents the relatively early stages of otitis externa, before the stage of pus formation.

Response to treatment was usually rapid with either medication, with few cases of persistent infection. Aluminium acetate is one of several non-antibiotic applications that may be used; it is effective, cheap and safe. The antibiotic/steroid preparations, which are more commonly used and expensive, should be kept for more severe or resistant cases. Problems arise with the traditional advice of keeping the ears dry and particularly with avoiding swimming for long periods of time (*British Medical Journal*, 1974); this may be necessary in the severe case, but with children in a hot climate such instructions are unlikely to be observed. We introduced a compromise of no swimming at all until complete clinical resolution, and care taken with drying the ears after that. Underwater swimming and diving are best avoided in a susceptible individual. If recurrence is a problem, and a total ban on swimming and water sports too much of a hardship, then advice on using ear protection—a bathing cap, and cotton wool earplugs coated with vaseline—may help, along with the use of hygroscopic ear drops such as Spirit after bathing.

Table 5. Time taken for symptoms to resolve fully on different treatments.

	Aluminium acetate	'Otosporin'
Number of cases	28	31
Mean number of days	9.36 ± 3.36	11.06 ± 4.6*

*not significant.

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Psychiatry and general practice

In Britain, the past decade has seen a dramatic improvement in the general practitioner's financial position at a time when the hospital doctor, trainee and consultant has benefited hardly at all. Developments in general practice training have meant that today's trainee general practitioner can acquire considerable knowledge and some skill relating to the management of much of the overall pool of psycho-social morbidity in the community. It is therefore understandable that a newly qualified doctor who has an interest in psychiatry, who would like to be reasonably well paid, have an organized working life without on-call duties, have a modest degree of status and the ability to retain some personal contact with and responsibility for his patients (in a way that is becoming increasingly difficult for many psychiatric consultants to do), should enter upon a career in general practice.

Source: Clare, A. (1980). *Psychiatry in Dissent. Controversial Issues in Thought and Practice*. 2nd edition. London: Tavistock Publications.