Cold sores—an epidemiological survey

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SUMMARY. A survey was carried out in a general practice in North Wales to determine the incidence, frequency, duration, and severity of cold sores. Of the 1,855 adults interviewed, 46 per cent gave a definite history of having had a cold sore at some time while 28 per cent continued to have one or more a year. More than half of the latter considered their sores of moderate or severe inconvenience.

Introduction

Cold sores are generally dismissed by doctors and laymen as a trivial affliction unworthy of consideration. Since five per cent idoxuridine (IDU) in dimethyl sulphoxide (DMSO) is an effective treatment (Juel-Jensen *et al.*, 1970), this continuing dismissal is worth questioning. Much is already known about the causative organism, the *Herpes simplex A virus*, type 1 (Juel-Jensen and MacCallum, 1972), but there are few facts about the clinical epidemiology, although a little can be learnt from antibody studies started as long ago as 1930 (Andrews and Carmichael, 1930).

Aim

Our survey was undertaken to extend epidemiological knowledge so that the need for treatment with idoxuridine can be assessed.

Method

The people questioned were drawn from an all-European, rural, and semi-rural practice of average social class distribution. Numerically about one quarter of the practice was included in the survey, which was carried out by two members of a four-partner practice. Only patients registered with the practice were included.

The method was that a doctor questioned personally, using a formal questionnaire, but with added explanation where necessary, all those over the age of 18 who came to our consulting rooms. To avoid selection this included adults accompanying other patients. In practice it proved impossible to ask all those attending, but every care was taken not to exclude the less intelligent and the elderly, thereby avoiding a possible bias.

Having recorded the name, age and address, the questionnaire and possible answers were as follows:

(1) ' Have you *ever* suffered with a cold sore? ' The greatest care was taken to ensure that the question was understood and this often involved asking the question more than once and where any uncertainty existed describing the sequence of irritation, vesiculation, and scabbing of a usually recurrent facial lesion. Sores on the ears and neck were included, but not those elsewhere. The possible answers were ' yes ', ' no,' ' don't know.'

(2) If the answer to (1) was ' yes,' ' Can you remember when you first had a cold sore? '

(3) ' Approximately how often do you develop a cold sore? '

(4) ' How much trouble do they cause you? ' This was intended to give some measure of the relevant aspects of subjective suffering—pain, physical inconvenience, and cosmetic embarrassment. The possible answers were ' minimal,' ' moderate ' or ' severe.'

(5) ' Approximately how long do they last? ' They were regarded as resolved when the skin became smooth to touch and normal in appearance again.

(6) ' Where do you get the sores? '

(7) ' Are they always at this site? ' A site was regarded as an area equivalent to one third the length of the lip although, of course, the lesion was not necessarily on the lip itself.

Error

Analysis has been by hand rather than by computer and a small error must be inevitable. Such an error, however, is negligible when compared with the innate inconsistencies of a retrospective survey such as this which depends upon memory and impressions.

Results

Incidence

There were 1,855 patients interviewed. Of these, 850 definitely recalled having suffered a cold sore at some time, 921 had no such recollection, and 84 were uncertain. This represents a definite positive history in 45·8 per cent, nearly half of all those interviewed. The 95 per cent confidence interval is 45·79 per cent to 45·84 per cent, although such accuracy is invalidated by the nature of the survey. There is no significant difference between men (45·7 per cent) and women (45·9 per cent).

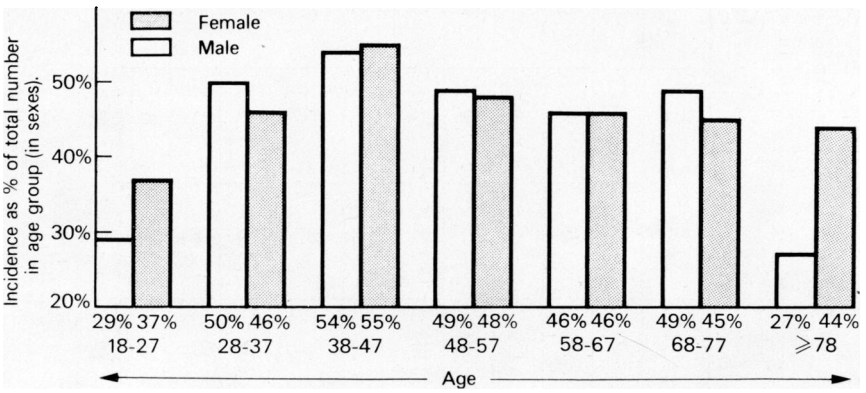

Figure 1
Incidence by age groups.

The data are represented in a bar chart (figure 1). There is a peak in the 38–47 age group, but this is not statistically significant at the five per cent level. Conversely, the low incidence of 34 per cent in the youngest age group is highly significant ($p>0·99$). The apparently low figure in the oldest group is not significant at the five per cent level and arises through the small number sampled.

Age of onset

The majority of patients could not recall when they started their cold sores and it is therefore only by implication that it could be suggested that they started in childhood. Of the 373 men who answered this question, 37 (ten per cent) said they started to have sores as adults and six of them thought that this was after the age of 48. Of the 474 females, 71 (15 per cent) started as adults and five started after the age of 48. There is the possibility that childhood sores may not have been remembered.

TABLE 1
INCIDENCE OF COLD SORES

Age in years

TABLE A		18–27	28–37	38–47	48–57	58–67	68–77	77+	*Totals*	
MALE	Yes	40	76	75	67	70	39	6		373
	No	84	73	58	62	74	30	13	394	
	Don't know	13	2	6	7	8	10	3	49	
FEMALE	Yes	69	111	95	68	76	47	11		477
	No	114	126	73	68	83	51	12	527	
	Don't know	4	6	4	5	8	6	2	35	
TABLE B with sexes aggregated									1,005 no or don't know	850 with +ve history
	Yes	109	187	170	135	146	86	17	1,855 in survey = *45·5% with +ve history*	
	per cent Yes	*34*	*46*	*55*	*47*	*46*	*47*	*36*		
	No	198	199	131	130	157	81	25		
	Don't know	17	8	10	12	16	16	5		

Frequency

The frequency is set out in figure 2, in which the sexes are represented independently and the percentages are those of the total in each sex with a positive history. No significant difference (at the one per cent level) was found between the sexes. The criteria for " complete cessation " were not defined before the study began, the possibility of this answer having been overlooked.

When the data were analysed it was decided to include in this group only those who had been free of cold sores for at least ten years. Nearly all the 58 people in this group stated that they could not recall having had sores after childhood. Numerically, 524 stated that they were still liable to cold sores which occurred at least once a year. This represents 28 per cent of all those interviewed and 62 per cent of all those with a positive history. The median (not the mean) number of episodes in those continuing to suffer is 1·9 per year. Extrapolation of these figures suggests that any thousand adults would between them have at least 750 cold sores in a year.

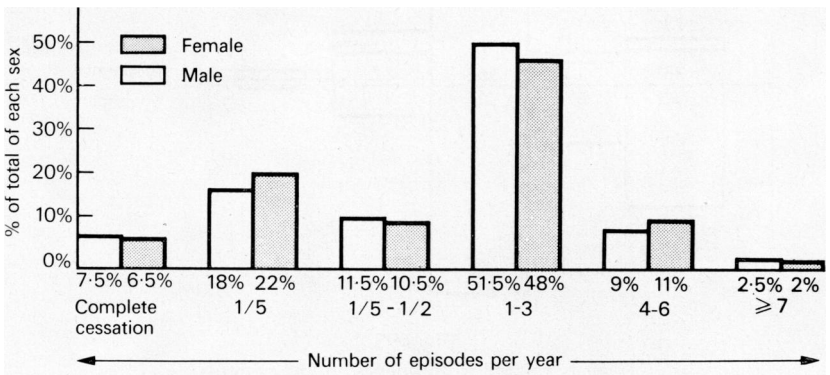

Figure 2
Frequency of episodes in 846 patients with a positive history.

To establish whether there was any alteration in frequency with advancing age, the groups of 18–27 and 58–67 were compared (table 2). The apparent suggestion of a decreasing frequency with age is not significant at the five per cent level.

TABLE 2
FREQUENCY IN TWO TEN-YEAR AGE GROUPS WITH SEXES AGGREGATED

		18–27		*58–67*	
		Number	*Per cent of total*	*Number*	*Per cent of total*
Number of episodes per year	⩾7	3	*3*	3	*2*
	4–7	14	*15*	13	*9*
	1–3	49	*53*	63	*43*
	1/2–1/5	8	*9*	21	*14*
	rare	16	*18*	35	*24*
	never	2	*2*	12	*8*
	Totals	92		147	

Severity

Figure 3 shows the severity of symptoms related to frequency in 788 persons still subject to cold sores. There were 274 sufferers who had one or more sores a year who regarded them as of moderate or severe inconvenience. This represents 15 per cent of all those interviewed and 32 per cent of all those with a positive history. The severity of symptoms correlates closely with frequency ($p>0{\cdot}99$) and this relationship is shown in figure 4 where the percentages are those with moderate or severe symptoms in each group by frequency.

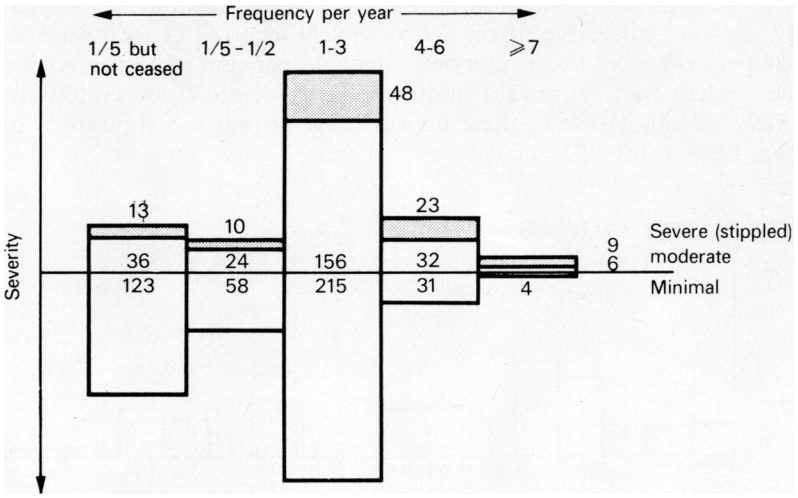

Figure 3
Severity related to frequency in 788 patients.

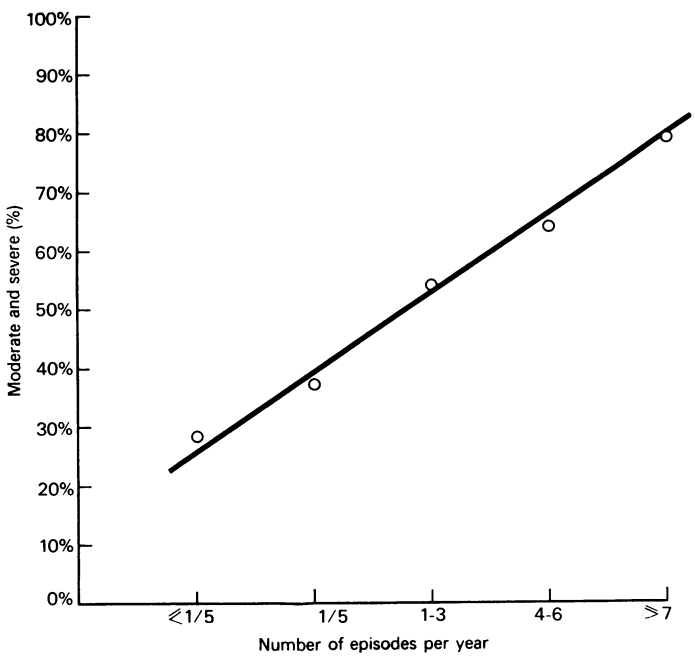

Figure 4
Severity related to frequency.

Duration

Only the answers of 563 persons who had had a sore in the previous five years were considered (figure 5). A significant difference ($p>0{\cdot}99$) was found between the mean duration of episodes in men (7.3 days) and women (8.4 days). If it is assumed that the population is equally divided into the sexes, then the mean duration for the sexes combined was, with a 95 per cent confidence interval, 7.5 to 8.2 days. These figures must be regarded with some caution on statistical grounds since the " over 14 days " grouping is open-ended. A higher proportion of women (ten per cent) than men (three per cent) reported that their sores persisted for more than 14 days.

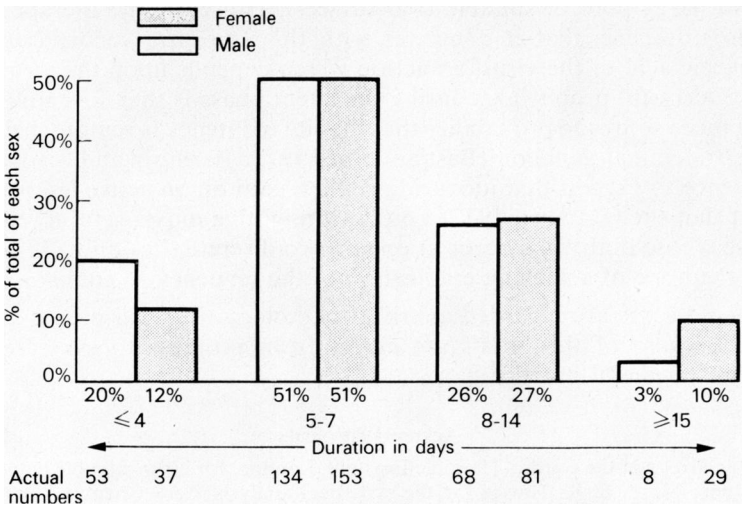

Figure 5

Duration in 563 patients who had reported a sore at least once every five years.

Number of sites

Of the 846 persons answering this question, 25 per cent recalled having had sores at only one site, 14 per cent could recall outbreaks at two different sites, and 53 per cent said that their sores appeared at three or more sites. The remaining eight per cent were uncertain.

Discussion

Almost half of all those interviewed could recall having had a cold sore at some time. Their answers present the " average " herpes sufferer as having two cold sores a year lasting about eight days and recurring at more than one site. The only noted difference between the sexes was that cold sores appear to last longer in women, but this might be a reflection of a heightened awareness for cosmetic reasons. Although no relationship with age was demonstrated, it seems that a few people (about seven per cent) effectively " grow out " of having sores.

A lower incidence of positive histories was noted in the youngest age group. It is known that the incidence of an elevated antibody titre is lower in the higher socio-economic groups (Burnet and Williams, 1939). Perhaps, therefore, this low incidence is a reflection of the prevailing good social conditions. The possibility of such a decrease has been predicted (Juel-Jensen and MacCallum, 1972). However, it was found that 13 per cent of all those who had cold sores could not recall having them until they were adult, which means that it is possible that some of those with a negative history at this young age may develop sores in the future, so bringing this group to parity with the older groups.

Treatment

Idoxuridine in dimethyl sulphoxide appears to be an effective form of treatment, even if expensive, and yet it is seldom used in clinical practice. In this survey 15 per cent of all those interviewed had at least one cold sore a year which they regarded as of moderate or severe inconvenience. This justifies consideration being given to the wider use of the treatment, although it is to be remembered that not all authorities are satisfied that dimethyl sulphoxide is sufficiently non-toxic to be used in general clinical practice.

The possibility of prophylaxis using idoxuridine has been suggested (Bauer, 1973), but does not appear to have been investigated. If 25 per cent have sores at one site only then there is a large pool of suitable trial subjects. However, the therapeutic mode of action of idoxuridine is that it competes with thymidine for incorporation into the deotyribo nucleic acid of the virus, an action which depends upon the virus undergoing replication. Successful prophylaxis during the latent phase is therefore unlikely and this is made even more so by the probability that the site of latency is remote, being not in the face, but the trigeminal ganglion (Bastian *et al.*, 1972; Baringer and Swoveland, 1973). There is evidence to suggest that idoxuridine when used on an active lesion may prevent recurrence at that site (Dawber, 1972), so that it might be most useful to concentrate on treating those whose outbreaks occur at one or two discrete sites only (39 per cent of all sufferers) in the hope of achieving eradication of the tendency to cold sores.

Even if cold sores are regarded as trivial pathology they still pose a large problem numerically. Because of this, trials are currently in progress to evaluate idoxuridine as a treatment in general practice.

Acknowledgements

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SIMPLE GUIDE TO DISABILITY IN BRONCHITIS

The distance covered in 12 minutes' walking was used to test exercise tolerance in chronic bronchitis. The distance covered bore a poor relation to the forced expiratory volume in one second, but a significant relation to the forced vital capacity and the maximum oxygen consumption and ventilation on a bicycle ergometer. The test may be a simple practical guide to everyday disability in chronic bronchitis.

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