Management of sprained ankles

A double-blind study

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SPRAINED ankle is a common acute lesion, causing considerable discomfort and disability. Various methods of treatment have been assessed (Boyce and Medhurst, 1967; Rathgeber, 1971; Harris, 1971), but either the results were not significant or the measurements too subjective. I have tried in this study to replace impressions by direct measurements.

Method and materials

Patients presenting with sprained ankles were first assessed and then given routine physiotherapy in the form of ice packs, supportive bandage, and passive flexion and extension followed by active exercises. In addition, they were given a tube of gel to be applied to the skin over the affected ankle. The gel was either Movelat Gel (0.2% mucopolysaccharide, 1% adrenocortical extract, 2% salicylic acid)—a powerful anti-inflammatory and anti-exudative preparation, which has been successful in the treatment of soft tissue injuries (Kleinschmidt *et al.*, 1975; von Batky, 1971; Centoza, 1973; Witt *et al.*, 1972)—or a placebo (the gel base without active ingredients). The tubes were numbered according to a random code and the trial was double-blind.

The patients were assessed initially and on the third and seventh days of treatment. The criteria for assessment were the measured range of ankle movement compared with the normal, the measured amount of swelling, the pain and the time taken to return to normal activity.

Results

Of the 50 patients treated, eight were excluded from the assessment (four did not return after the first visit and four were subsequently found to have fractures). The total number of patients assessed was therefore 42. The sex distribution in the two groups was similar (table I). However, there were more patients between 16 and 60 years of age in the placebo group and more under 16 and over 60 years of age in the Movelat group (table II).

The initial limitation of movement in the two treatment groups was similar, except that more patients in the Movelat group had no initial limitation of movement than in the placebo group (table III). Swelling of the ankle was determined by measuring with a tape measure the diameters of the injured and healthy ankle around the internal and external malleoli. The difference between the two measurements was recorded. More patients in the Movelat group had differences in diameter exceeding 1in (2.5cm) than in the placebo group (table IV). The severity of pain at the start of the treatment was similar in the two groups (table V), as was the distribution of its severity in the different age groups (table VI).

The return to full activity from the start of the injury was noted. More patients in the Movelat group returned to full function after one to three days than in the placebo group and more patients in the placebo group took longer than seven days before they returned to full function (table VII). Pain disappeared in more patients in the Movelat group during the first three days than in the placebo group. Considerably more patients in the placebo group than in the Movelat group complained of pain for more than seven days (table VIII).

A points score was obtained by giving points for the initial differences in movement of the ankle (1 to 4 points). The greater the initial

TABLE I.—Sex distribution

Sex	Movelat	Placebo	Total
Male	9	8	17
Female	11	13	24
Not recorded	0	1	1
Total	20	22	42

TABLE II.—Age distribution

Age (years)	Movelat	Placebo	Total
<16	6	3	9
16 to 30	5	11	16
31 to 60	1	6	7
60+	8	2	10
Total	20	22	42

TABLE III.—Initial limitation of movement (range from dorsiflexion to plantar flexion)

Limitation of movement	Movelat	Placebo	Total
0	5	1	6
<20°	8	9	17
20°	3	6	9
30°	1	4	5
>30°	3	2	5
Total	20	22	42

TABLE IV.—Initial swelling

Difference in diameter between injured and healthy ankle	No. of patients Movelat	Placebo	Total
0	0	1	1
up to 0.25in (0.6cm)	6	4	10
up to 0.5in (1.25cm)	9	12	21
up to 1 in (2.5cm)	3	3	6
>1in (2.5cm)	4	0	4
Total	22	20	42

TABLE V.—Severity of pain at the start of treatment

Severity of pain	Movelat	Placebo	Total
Slight	10	10	20
Moderate	8	10	18
Severe	2	2	4
Total	20	22	42

TABLE VI.—Severity of initial pain by age

Severity of pain	Age (years) 15	16 to 30	31 to 60	60+	Total
Slight	6	8	2	5	21
Moderate	2	7	3	5	17
Severe	1	1	2	0	4
Total	9	16	7	10	42

TABLE VII.—Return of function

No. of days	Movelat	Placebo	Total
1 to 3	7	3	10
4 to 7	9	10	19
>7	4	9	13
Total	20	22	42

TABLE VIII.—Relief of pain

No. of days	Movelat	Placebo	Total
1 to 3	8	4	12
4 to 7	10	9	19
>7	2	9	11
Total	20	22	42

difference, the more points were given. Similarly points were given for return of function and relief of pain: the more quickly function returned, the more points were given; the more quickly pain was relieved, the more points were given. The same was also done for swelling and its return to normal. If side effects occurred two points were deducted from the total score. The points were then added and the total recorded. The means (and s.e.m.) of the results were: Movelat gel group 12.1 (±3.8) and placebo gel group 9.7 (±3.7). The means differred significantly for the 5% level ($P<0.05$). Two patients who complained of burning of the skin were both in the placebo group.

Conclusion

Movelat Gel as an adjunct to physiotherapy was shown to be superior to placebo gel and physiotherapy in alleviating the signs and symptoms of sprained ankle. Return to full function was more rapid in the Movelat group as was relief of pain. No side effects were noticed among patients in the Movelat group.

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