PRACTICE

Adverse effects of spinal manipulation

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J R Soc Med 2000;**93**:258–259

SUMMARY

Guidelines on acute back pain recommend spinal manipulation, but some commentators express concern that the adverse effects are under-reported. Eleven chiropractors distributed questionnaires to 108 consecutive new patients aged >18 years, enquiring about adverse effects one hour, one day and two days after spinal manipulation. The forms were to be completed anonymously.

80 questionnaires (74%) were returned, 68 suitable for analysis. 28 patients reported adverse effects at one hour after treatment, the most common of which were extra pain (14) and radiating pain (9). 8 had reactions beginning the morning after. No serious adverse effects were reported.

The adverse reactions, recorded in 53% of respondents, are those to be expected from a treatment that entails initial discomfort. They need to be set against the long-term benefits of spinal manipulation.

INTRODUCTION

Editorials challenging the appropriateness of spinal manipulation have recently appeared in several journals and newspapers[1]. These focus on a concern that adverse effects of this treatment are under-reported. They stand in contrast with national clinical practice guidelines on acute back pain[2,3] which recommend spinal manipulation as a safe primary care treatment. We conducted a prospective, cross-sectional, questionnaire study of a manipulated cohort of chiropractic patients to assess adverse effects over the first 48 hours after treatment.

PATIENTS AND METHODS

We approached 11 chiropractors on the register of the British Chiropractic Association. Nine of these agreed to participate and were sent a set of instructions and sealed envelopes to hand to 12 consecutive new patients aged >18 years at the first visit on which they received spinal manipulation (to one or more areas of the spine).

Practitioners were requested to indicate, in an allocated space on the envelope, the spinal area(s) manipulated and to ask the patient to open the envelope within one hour of treatment. The instructions asked the patient to complete a three-section questionnaire, to be returned anonymously to the study centre in a stamped-addressed envelope. The first section (one hour post-treatment) asked if the patient had any discomfort attributable to that day's manipulation. If not, he or she was asked to wait until the next day before continuing. If so, the patient was asked to specify the symptoms attributable to treatment. Several options were suggested (see Table 1) and a five-point Likert scale was used to record severity according to the categories 'hardly any discomfort', 'mild discomfort', 'moderate discomfort', 'severe discomfort; and 'worst possible discomfort'. The questionnaire additionally asked whether any reaction had caused difficulty in sleeping, standing, sitting or walking. The second and third sections asked, respectively, about adverse effects attributable to treatment one and two days post-manipulation; if such reactions were recorded, the patient was asked whether they had been worsened by any activities undertaken since the manipulation.

RESULTS

Of a total of 108 questionnaires distributed, 80 were returned (74% response). 68 contained complete data and were analysed. There were 39 women and 29 men in the sample, mean age 45 years (SD 16.65). 36 patients (53%) reported some sort of adverse reaction, over the two days, which they attributed to treatment. The rates for males and females did not differ, but the mean age of those who complained of a reaction at one hour was lower than that of those who did not (P=0.02, unpaired t-test). Table 1 shows the times of onset, persistence, severity, type of reaction and its influence on four activities of daily living. No serious adverse effects were reported. The reporting of some form of reaction to lumbar spine manipulation (13/35:37%) was

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Table 1 **Reactions to manipulative treatment reported in 36/68 patients treated (53%): time of onset, intercurrent activities, time to subside, severity, type of effect and influence on 4 activities of daily living**

	Time from treatment		
Category	***1 hour (%)***	***One morning after (%)***	***Two mornings after (%)***
Time of onset of reactions attributed to manipulation	28 (41)	8 (12)	0 (0)
No. of patients with intercurrent activities likely to have increased the pain		3	2
No. of reacting patients in whom reaction had subsided*		15 (42)	13 (36)
Mean (95%CI) severity of reactions in affected patients†	2.3 (2.00–2.64)	2.3 (2.12–2.93)	3.1 (2.55–3.70)
Manifestations of reactions where present (not exclusive) (No. of patients reacting at time point)	***n*=28**	***n*=19**	***n*=8**
Extra pain	14 (50)	7 (37)	2 (25)
Radiating pain	9 (32)	5 (26)	4 (50)
Stiffness	5 (18)	10 (53)	5 (63)
Dizziness	5 (18)	–	2 (25)
Tiredness	4 (14)	1 (5)	–
Headache	1 (4)	1 (5)	–
Nausea	1 (4)	–	–
Vomiting	–	–	–
Other‡	4 (14)	3 (16)	–
Negative influence on activities of daily living (not exclusive) (No. of patients reacting at time point)			
Standing	6 (22)	6 (32)	4 (50)
Sitting	8 (29)	8 (42)	7 (88)
Walking	2 (7)	8 (42)	4 (50)
Sleeping	–	4 (21)	3 (38)

*Reactions (22%) had not subsided at 48 hours
†1=Hardly any, 5=worst possible
‡Other=indigestion, pins and needles vibrating pain, dull ache

similar to that for cervical spine manipulation (4/14:29%). Adverse effects tended to be transient unless prolonged by patient activities.

DISCUSSION

The rate and severity of reactions in this patient sample are similar to those in previous reports[4,5] based on patient recall and in which the practitioners themselves did the interviews. This was despite the fact that, by assuring confidentiality, we wished to explore the worst-case scenario for manipulation.

Professional standards require that needless side-effects be minimized so that patients can receive all the beneficial effects of therapy. Optimal technique selection, minimal force and the use of mild analgesics are possible approaches to this. However, recovery from acute low back pain demands an active management strategy that entails initial discomfort[2]. We suggest that the risk of experiencing this discomfort is outweighed by the treatment benefits.

Acknowledgments We thank the chiropractors who participated in this study and Mrs Jane Baker for her help in compiling the report.

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