



## Original Article

# Manual therapy for the cervical spine and reported adverse effects: A survey of Irish Manipulative Physiotherapists

Aoife Sweeney, Catherine Doody\*

School of Physiotherapy and Performance Science, Health Sciences Centre, University College Dublin, Belfield, Dublin 4, Ireland

## ARTICLE INFO

## Article history:

Received 9 December 2008

Received in revised form

22 April 2009

Accepted 18 May 2009

## Keywords:

Cervical manipulation

Vertebrobasilar insufficiency

Adverse effects

## ABSTRACT

The purpose of this study was to determine the use of manipulation and mobilisation by the Chartered Physiotherapists (CMPT) in Manipulative Therapy Ireland and to describe adverse effects associated with the use of these techniques. A 44 item postal survey was sent to all 259 members of the CPMT (response rate 49%,  $n = 127$ ). All 127 respondents used non-High Velocity Thrust Techniques (HVTT) and 27% ( $n = 34$ ) used HVTT. Nine percent ( $n = 12$ ) used HVTT on the upper cervical spine. Twenty six percent ( $n = 33$ ) reported an adverse effect in the previous 2 years. The adverse effects were associated with the use of HVTT (4%,  $n = 5$ ), non-HVTT (20%,  $n = 26$ ) and cervical traction (2%,  $n = 2$ ). The most serious adverse effects were associated with non-HVTT and included 1 drop attack, 1 fainting episode and 1 Transient Ischemic Attack (TIA) 4 days post treatment. Fifty three percent ( $n = 18$ ) of HVTT users and 40% ( $n = 44$ ) of non-HVTT users reported carrying out a vertebrobasilar insufficiency (VBI) assessment. The study shows that VBI assessment may not detect every patient at risk of adverse effects. Large scale studies to investigate the risk of serious adverse reactions are needed. A system of reporting adverse effects on a routine basis could be considered.

© 2009 Elsevier Ltd. All rights reserved.

## 1. Introduction

Spinal manipulation and mobilisation are commonly used in the treatment of cervical spine disorders (Cagnie et al., 2004). Cervical manipulation has been associated with serious complications including incidences of cerebro-vascular accidents (CVA) (Di Fabio, 1999; Rothwell et al., 2001; Stevinson et al., 2002; Haldeman et al., 2002) as well as minor adverse effects for example headache, stiffness and aggravation of symptoms (Michaeli, 1993; Magarey et al., 2004; Thiel et al., 2007). Ernst (2007) in a systematic review of the adverse effects of spinal manipulation suggested that spinal manipulation is associated with frequent mild and transient adverse effects as well more serious complications which can lead to permanent disability or death.

The incidence of adverse effects has been reported to vary for example 1 per 50,000 manipulations (Magarey et al., 2004) to 1 incidence in 228,050 (Michaeli, 1993). Kerry et al. (2008) in a review of the literature in relation to cervical artery dysfunction and manual therapy suggest that inferences regarding size of risk should be made with caution in relation to surveys due to reporting

bias. Kerry et al. (2008) also state that it is currently not possible to meaningfully estimate risk of post treatment complications. Stevinson et al. (2002) did not report an incidence risk for cervical manipulation due to concerns as to the validity of such a calculation. Ernst (2007) concluded that currently it is not possible to reliably calculate incidence figures due to the lack of sufficiently large and rigorous prospective studies. Thiel and Bolton (2008) suggests the need for a system that records adverse effects on a routine basis which would not rely on the subjective recall of practitioner.

There is also some evidence for the risk of adverse effects with the use of mobilisations (Michaeli, 1993) or non-High Velocity Thrust (HVT) techniques which have not been as extensively reported in the literature. Grant (2002) reported a greater incidence of minor adverse reactions related to the use of non-HVT techniques (27.5%) compared to HVT techniques (16.1%). Magarey et al. (2004) reported a greater rate of adverse effects associated with non-HVT techniques (1/180 therapist weeks of treatment) compared to HVT techniques (1/177.5 therapist weeks of treatment). Magarey et al. (2004) also reported adverse effects were elicited by examination procedures particularly those involving rotation. Hurwitz et al. (2005) conversely reported that patients receiving spinal manipulation were more likely to experience adverse effects than patients treated with mobilisations, however

\* Corresponding author. Tel.: +353 1 7166514; fax: +353 1 7166505.  
E-mail address: [c.doody@ucd.ie](mailto:c.doody@ucd.ie) (C. Doody).

the authors stated that their estimations of risk were imprecise. The side effects reported by Hurwitz et al. (2005) associated with mobilisations included increase in pain, headaches and tiredness.

Use of functional positional testing of the cervical spine has been suggested as part of the assessment of vertebrobasilar insufficiency (VBI) prior to the application of cervical spine HVT techniques and non-HVT techniques (Australian Physiotherapy Association, 2006). However functional positional testing has been criticised for its' lack of sensitivity and specificity (Richter and Reinking, 2004) and validity Haldeman et al. (2002). Lack of validity of functional positional testing in detecting alterations in blood flow (Côté et al., 1996; Rivett and Reid, 1998; Haynes and Milne, 2000) the risk of adverse reactions associated with the test procedures themselves (Di Fabio, 1999) and the time consuming nature of the tests (Magarey et al., 2004) calls into question the clinical utility use of functional positional testing. However these tests are currently advocated for the assessment of VBI as part of an overall assessment protocol which also includes a detailed subjective assessment and an emphasis in the therapists' clinical reasoning processes (Australian Physiotherapy Association, 2006).

The purpose of this study was to determine the use of manipulation and mobilisation techniques by members of the Chartered Physiotherapists in Manipulative Therapy (CPMT) in Ireland working in musculoskeletal clinical practice, to describe any adverse effects associated with the use of these techniques and therapist's use of a VBI assessment protocol.

## 2. Methods

### 2.1. Study design and sample

Ethical exemption for the study was granted by the University College Dublin Research Ethics committee. A list of current members of the CPMT a special interest group of the Irish Society of Chartered Physiotherapists was obtained from the CPMT. A 44-item anonymous self-administered postal survey (adapted with permission from Magarey et al., 2004) was sent to all practicing members ( $n=259$ ) of the CPMT. The survey contained four sections. The first section asked for Physiotherapists' demographic information, the second for therapists' use of HVT techniques, the third for their use of non-HVT techniques and the fourth asked for information regarding the occurrence of adverse effects associated with assessment and treatment of the cervical spine. The questionnaire contained a mixture of closed and open-ended questions. Reminders were posted 4 weeks after the initial survey to non-respondents. Data were analysed by means of descriptive statistics using Microsoft Excel 2003.

## 3. Results

A total of 134 of the total 259 surveys were returned. Of these 7 were unsuitable for use as 3 of the respondents were retired and a further 4 were not currently working in the musculoskeletal clinical area, giving a total valid response rate of 49% ( $n=127$ ).

### 3.1. Respondent profile

The mean age of the respondents was 33.33 years (SD 7.05, range 24–60). The respondents had a mean numbers of years clinical experience of 13.81 years (SD 7.23, range 2–38) with an average of 10.48 years (SD 6.01, range 1–32) working in the musculoskeletal area. Thirty two percent ( $n=40$ ) of respondents had no post-graduate qualification in manipulative therapy, 18% ( $n=23$ ) had a MSc in Manipulative Therapy, 11% ( $n=14$ ) had a Higher Diploma in Manipulative Therapy, 10% ( $n=13$ ) had

a general MSc and 29% ( $n=37$ ) had attended a variety of short courses (e.g. Cyriax, McKenzie, Kaltenborn, Mulligan, Myofascial techniques, Muscle Energy etc).

### 3.2. Treatment techniques

Twenty seven percent ( $n=34$ ) of physiotherapists used HVT techniques. Nine percent used HVT techniques on the upper cervical spine ( $n=12$ ). Twenty two percent ( $n=28$ ) used HVT techniques on the mid-cervical spine and 21% ( $n=27$ ) on the lower cervical spine. Fourteen percent ( $n=18$ ) stated that they used HVT techniques 'every few months'. The main reason for not using HVT techniques were safety reasons (28%,  $n=35$ ), alternative treatments were just as effective (23%,  $n=30$ ) and a lack of confidence in the use of HVT techniques (8%,  $n=10$ ).

All respondents ( $n=127$ ) used non-HVT techniques on the cervical spine. Ninety three percent ( $n=119$ ) used non-HVT techniques on the upper cervical spine, 98% ( $n=124$ ) used non-HVT techniques on the mid-cervical spine and 98% ( $n=124$ ) on the lower cervical spine. All respondents stated they used non-HVT techniques 33% of the time. Seventy eight percent ( $n=99$ ) stated they used cervical traction and 21% ( $n=27$ ) reported that they did not.

### 3.3. Assessment of VBI

Of the 34 therapists who used HVT techniques 62% ( $n=21$ ) indicated they used the Australian Physiotherapy Association Protocol, 15% ( $n=5$ ) used a local protocol (but this was unspecified), 12% ( $n=4$ ) used the Manipulative Association of Chartered Physiotherapists guidelines, and 3% (1/34) stated they used a Cyriax protocol. The main reasons given by therapists for carrying out an assessment for VBI were; if vertebrobasilar insufficiency was suspected, [29% ( $n=10$ ) of HVT users and 79% ( $n=100$ ) of non-HVT users], or prior to the use of a treatment technique likely to stress the vertebrobasilar system [(35%,  $n=12$ ) of HVT users and 65% ( $n=82$ ) of non-HVT users] (Table 1).

Of the 34 respondents who used HVT techniques 53% ( $n=18$ ) stated that they used a full VBI assessment protocol on every occasion prior to the use of HVT techniques, and 18% ( $n=6$ ) reported they used the subjective component and part of the physical component. Of the 127 of respondents who used non-HVT techniques 34% ( $n=44$ ) stated they used a full VBI assessment protocol on every occasion and 21% ( $n=27$ ) used the subjective component and part of the physical component (Table 2).

Seventy nine percent ( $n=27$ ) of the 34 HVT technique users and 70% ( $n=89$ ) of the 127 non-HVT technique users would always inform the patient of the possible dangers associated with the use of these techniques. HVT technique users would inform the patient of dangers including, dizziness, (68%,  $n=23$ ), nausea (62%,  $n=21$ ),

**Table 1**  
Factors determining use of VBI assessment.

Reason	HVT ( $n=34$ )		Non-HVT ( $n=127$ )	
	N	%	N	%
When VBI suspected	10	29	100	79
When planned treatment may stress VA	12	35	82	65
When patient is anxious about technique	4	12	19	15
When recently reminded of VBI protocol	1	3	22	17
When time allows	1	3	6	5
Other <sup>a</sup>	3	9	7	6

<sup>a</sup> Other included for HVT; rotations ( $n=1$ ), legal reasons ( $n=1$ ), if arthritis suspected ( $n=1$ ) and for non-HVT; age of patient ( $n=3$ ), change in signs and symptoms ( $n=2$ ), end range techniques ( $n=1$ ) and for C0–C2 techniques ( $n=1$ ).

Download English Version:

<https://daneshyari.com/en/article/2625815>

Download Persian Version:

<https://daneshyari.com/article/2625815>

[Daneshyari.com](https://daneshyari.com)