

POPULAR TREATMENT MODALITIES IN THE MANAGEMENT OF SACROILIAC JOINT DYSFUNCTION

ABSTRACT: *The treatment of sacroiliac joint (SIJ) dysfunction presents a clinical challenge for physiotherapists. The aim of this study was to investigate current physiotherapy practise in the management of acute and chronic SIJ dysfunction. A chart audit of 677 SIJ patient reports (N=677) from 75 different private physiotherapy practises were analysed to determine the following: (1) the prevalence of the use of exercise therapy, and the types of exercise used in the management of SIJ dysfunction, and (2) the prevalence of other therapeutic modalities utilised alongside exercise therapy. The results of the study indicated that use of exercise therapy, specifically stretches and mobility exercises, is a popular treatment choice by physiotherapists. Joint mobilisations and soft tissue massage often accompanied exercise. Despite research outcomes suggesting both a strengthening and stabilisation program for the lumbo-pelvic complex, these approaches were less favoured.*

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INTRODUCTION

The sacroiliac joint (SIJ) is widely considered as a potential source of low back pain (Laslett, 2008; Forst et al., 2006; Cappaert, 2000; Schwarzer et al., 1995). Evidence suggests a SIJ dysfunction prevalence variation between 10 and 47.9% in the general population (Rupert et al., 2009; Laslett, 2008; Hancock et al., 2007; Hansen et al., 2007; Foley & Buschbacher, 2006; Cohen, 2005; Dreyfuss et al., 2004; Toussaint et al., 1999). Studies have shown that in 13% of patients with persistent low back pain the SIJ has been confirmed as the origin of pain (Laslett, 2008; Hancock et al., 2007).

The assessment, treatment and management of SIJ dysfunction present a challenge for clinicians. Suitable evidence is lacking for the unequivocal support of one therapy over another. Current literature suggests the use of advice, manipulation and mobilisation, medication, bracing, radiofrequency denervation, advice and exercise. Medication (Vleeming et al., 2008; Foley & Buschbacher, 2007; Forst et al., 2006), injections (Szadek et al., 2009; Rupert et al., 2009; Laslett, 2008; Foley & Buschbacher, 2006; Cohen, 2005) and radiofrequency denervation

(Rupert et al., 2009; Hansen et al., 2007; Forst et al., 2006) are suggested for SIJ pain. Manipulation and mobilization techniques are readily considered among manual therapists to improve SIJ function (Vanelderden et al., 2010; Foley & Buschbacher, 2007; Cohen, 2005; Liebenson, 2005; Sizer et al., 2002; Lewit & Rosina, 1999), however, few modalities are supported by strong high quality evidence (Fryer et al., 2009; Liebenson, 2004).

Acupuncture may provide pain relief, but there is currently not enough evidence in the literature to support this statement (Vleeming et al., 2008). There is also little evidence to support the use of passive treatments such as rest, massage and pelvic belts (Mitchell & Esler, 2009; Vleeming et al., 2008; Laslett, 2008; Vleeming et al., 2008; Cohen, 2005;). Education and provision of information remain strongly recommended therapeutic agents for SIJ dysfunction (O'Sullivan, 2004). Postural (Liebenson, 2004) and lifting (Mitchell & Esler, 2009) advice and modifications should be discussed with all patients. An active participation by the patient in their recovery must be continually emphasised (Horton & Franz, 2007).

Exercise therapy, on the other hand, is

well supported by the evidence (Laslett, 2008; Vleeming et al., 2008; Liebenson, 2004), especially those aimed at stabilizing the lumbo-pelvic unit when load transfer failure has been diagnosed (Cusi, 2010; Mitchell & Esler, 2009; Chaitow, 2007; Forst et al., 2006), strengthening of the stabilising musculature (Pel et al., 2008; Liebenson, 2004; O'Sullivan, 2005; Liebenson, 2004; Hungerford et al., 2003; Franke, 2003; Van Wingerden et al., 2003; Richardson et al., 2002; Sizer et al., 2002; Snijdersad et al., 1998) and addressing functional patterns (Liebenson, 2004). SIJ dysfunction is addressed by a wide variation of therapies. The aim of this study was to assess the treatment interventions most commonly used by physiotherapists, with an emphasis on exercise therapy, in the management of SIJ dysfunction.

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METHODS

Setting

A retrospective chart audit was conducted from discharge reports submitted to a private health care company. A total of 75 physiotherapy practises were asked to submit discharge reports for all SIJ patient referrals. The physiotherapists submitted an initial and discharge report for all patients referred from the healthcare company. The physiotherapists received the report templates at referral. Reports submitted between the periods of January 2008 to July 2010 were gathered and assessed for the relevant data. All practises provided written consent to use the information provided in the report for research purposes.

Patients

A total of 677 reports were audited. Inclusion criteria consisted of all discharge reports with the terms 'sacroiliac joint' or 'SIJ' in the diagnosis section of the report. Exclusion criteria consisted of (1) cases where SIJ was not the provisional diagnosis provided by the clinician; (2) cases inclusive of secondary upper/ lower limb injuries; and (3) cases that were still undergoing treatment. The discharge report was designed by the researcher to assess the usage of each treatment modality. Physiotherapists selected all modalities that were used in treatment from a list provided. From an exercise therapy perspective, all therapists were provided with the options of stretches, mobility, strengthening, core stability, postural modifications, functional rehabilitation, proprioception, work focused rehabilitation, stability training, cardiovascular exercise, gait training and isokinetics. Various other therapeutic options were available for selection by the clinicians, and were assessed alongside the exercise therapy component. Definitions were not provided for each selection option. Clinician's selected the various options at their own discretion.

Data Analysis

Descriptive statistics were used to describe the prevalence of various treatment interventions. The cases were

further divided into acute SIJ (n=273) and chronic SIJ (n=404). Acute was defined, for the purpose of this study, as symptoms lasting no longer than 4 weeks, and chronic as persistence of symptoms for more than 4 weeks at the initial assessment (Bogduk & McGuirk, 2002).

RESULTS

Manual therapy

The prevalence of both manual therapy and exercise interventions are illustrated in Figure 1. The most popular modality in the treatment of both acute and chronic SIJ dysfunction was joint mobilisations (used in 69% and 78% of cases, respectively). Soft tissue massage was also a popular choice, used in 52% and 55% of acute and chronic cases respectively. Ultrasound and IFT were also used in 43% of acute and 45% of chronic cases. Other modalities such as heat/ice, muscle energy techniques, myofascial release and acupuncture were all used in less than 30% of cases. The average number of modalities during one treatment series received per patient was 7.5.

Exercise therapy

The results for exercise modalities are shown in Table 1, as percentage for usage in each category. The three most popular forms of exercise therapy included stretches, mobility (range of movement exercises) and strengthening exercises. All three were seen to be

more popular in the chronic phase of the injury, with stretches used in 74% of cases, mobility in 63% and strengthening in 62% of all cases. In the acute phase, these choices were slightly less favoured, with stretches being used in 68%, mobility in 54%, and strengthening in 52% of all cases. Other common choices included core stability (used in 48% of chronic, and 45% of acute cases) and postural/work modifications (used in 32% of chronic, and 34% of acute patients).

Reason for discharge

The selected 'reason for discharge' on the report was also analysed. The options on the report and responses are shown in Table 2. The majority of acute patients (82%), and 80% of chronic patients completed treatment and were able to self manage at discharge from care. Non-compliance with treatment (two or more consecutive appointments not attended) appeared to be marginally higher in acute (7%) versus chronic (6%) patients. The need for further diagnostic investigation appeared to be higher in chronic SIJ patients compared to acute patients (5% and 3%, respectively). Only 1% of acute patients were reported to have had a poor response to treatment.

DISCUSSION

Guidelines on recommended treatment approaches for SIJ dysfunction are few and good quality research is sparse. Liebenson (2004) proposes the key therapy components as advice about

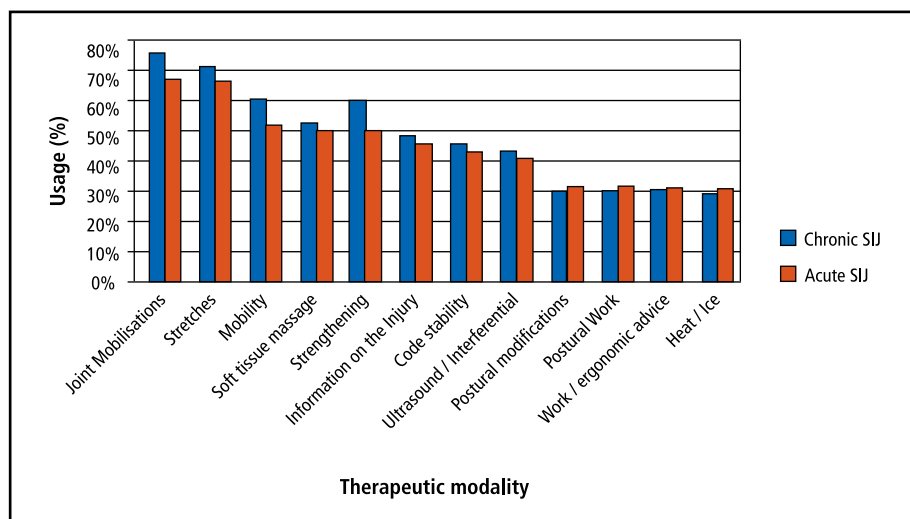


Figure 1: Popular physical therapy modalities in the treatment of SIJ dysfunction

posture and support, manipulation of the SI joints alongside other manual therapies, and exercise of the stabiliser muscles. Dar *et al.* (2006) reported the use of mobilisations, manipulations, traction, compression and gliding in the treatment of SIJ dysfunction. The results of this study suggest that joint mobilisation is still the most preferred treatment option used in private practice in the management of SIJ dysfunction.

Exercise therapy has been advocated as the conservative therapy with the

most potential for success (Laslett, 2008). The most commonly used exercise therapy was stretches followed by mobility exercises. Despite much evidence to suggest both a strengthening and a stabilisation program for the lumbopelvic complex (Mitchell & Esler, 2009; Laslett, 2008; O'Sullivan & Beales, 2007; Liebenson, 2004; Franke, 2003) these approaches were less favoured than expected, with the latter being used in less than half of all cases.

This study found that the use of soft

tissue massage is a popular treatment choice. Other passive modalities were not used as frequently, possibly due to warnings of clinical dependence and ineffectiveness for SIJ dysfunction (Harman *et al.*, 2009; Horton & Franz, 2007; Poitras *et al.*, 2005). There is no strong evidence for the use of myofascial techniques, muscle energy techniques and acupuncture (Vleeming *et al.*, 2008) and physiotherapists chose these interventions in less than 30% of cases.

Liebenson (2004) recommends offering advice on lumbopelvic posture, and O'Sullivan (2004) strongly recommends provision of information on the injury (O'Sullivan & Beales, 2007). It is interesting to note that education regarding the injury was provided in less than half of all cases, despite its clinical importance in aiding in patient compliance and recovery. Information was provided in 48% of acute and 51% of chronic SIJ patients. The effect of providing information on the outcome in these patients is worth further investigation (Vleeming *et al.*, 2008).

The purpose of this study was to provide a general overview of current management of SIJ dysfunction in private physiotherapy practise. The certainty of the diagnostic accuracy for these patients should be interpreting with caution. Guidelines recommending various batteries of tests (Cusi, 2010; Fryer *et al.*, 2009; Vleeming *et al.*, 2008; Szadek *et al.*, 2008; Foley & Buschbacher, 2007; Cohen, 2005; Lurie, 2005) are available. Further research should compare current practise against such recommendations. Furthermore, research should address the specificity of the exercises provided, and the relationship between these exercises and outcome measures should be investigated.

SUMMARY

Treatment of SIJ dysfunction should be aimed at correcting underlying pathology, and alleviating symptoms and rehabilitation of stability of the pelvis (Cohen, 2005). Evidence supporting any one therapy is lacking, and it is of interest to assess what modalities physiotherapists are currently using in the management of this condition.

Table 1: A comparison of the choice of exercise therapies in the management of acute and chronic SIJ dysfunction

Treatment modality	Chronic SIJ (n=404)	Acute SIJ (n=273)
Stretches	74%	68%
Mobility	63%	54%
Strengthening	62%	52%
Core stability	48%	45%
Postural modifications	32%	34%
Postural Work	32%	34%
Functional rehabilitation	16%	14%
Work-focused rehabilitation	10%	13%
Proprioception	12%	11%
Cardiovascular exercise	1%	1%
Gait training	1%	2%
Isokinetics	0%	0%

Table 2: Response to treatment based on clinician selected 'reason for discharge'

Reason for Discharge	Chronic SIJ % (N=404)	Acute SIJ (N=273)
Treatment complete/ self help sufficient	80%	82%
Non-compliance	6%	7%
Further investigation required	5%	3%
Other	3%	2%
Patient did not wish to continue with treatment	3%	1%
Patient receiving treatment elsewhere	1%	1%
Recommendations not approved	1%	1%
Alternative treatment recommended	1%	1%
Poor response to treatment	0%	1%

The use of joint mobilisations and soft tissue massage are common and widespread amongst physiotherapists in the treatment of SIJ dysfunction. Exercise therapy is used frequently, and this is congruent with current recommendations. Common exercise therapy techniques include stretches, mobility and strengthening. There still remains a need in clinical practise to emphasise an educational approach, providing information to patients. This study highlights the need for well conducted, randomised controlled studies into the clinical and cost-effectiveness of the different therapeutic approaches to SIJ dysfunction, in order to provide clinicians with useful guidance to best practice.

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