National Council for Osteopathic Research

Whiplash associated disorders (WAD) – a snapshot summary report (Nov 2012)

- **Key messages**
- Technical term is whiplash associated disorder (WAD).
- Many WAD cases recover within days or weeks but up to 50% do not recover quickly and progress to quite a chronic problem for the individual.
- WAD are universally classified according to the Quebec Task Force (QTF).
- Evidence suggest that conservative management and treatment should be used for WAD grades I and II.
- Too much healthcare and rehabilitation too early following injury can be associated with delayed recovery and development of chronic pain.
- The current evidence is not of good enough quality for specific guidelines to be developed in the UK but the general consensus within musculoskeletal healthcare groups is that active clinical management may help reduce recovery time.
- Management should include patient education, neck muscle exercises and possible manual therapy including soft tissue massage and joint mobilisation.
- Poor response to osteopathic treatment or deteriorating clinical situation should prompt appropriate medical referral immediately.

Introduction

Osteopaths are often consulted by patients who present in clinic with symptoms that they attribute to a 'whiplash' type injury following a road traffic collision. The technical term is a whiplash associated disorder (WAD). Despite manufacturer's attempts to improve car design, and the healthcare sectors research and development of treatment options, WAD remains a substantial public health problem, and a huge financial burden

on personal motor insurance. A number of healthcare groups are consulted by individuals who suffer injury from a road traffic collision; osteopaths, physiotherapists, chiropractors or general practitioners. The role of any healthcare professional is to provide safe and effective care to any individual presenting with a potential WAD. Thankfully many cases of WAD recover within days or weeks with no lasting effects, but a significant number (up to 50%) of cases do not recover quickly and progress to be quite a long term (chronic) problem for the individual[1]. WAD are universally classified according to the Quebec Task Force (QTF)[2] recommendations as:

Grade 0	No neck complaint. No physical signs.
Grade I	Neck complaint of pain, stiffness and/or tenderness. No physical signs.
Grade II	Neck complaint and musculoskeletal signs.
Grade III	Neck complaint and neurological signs.
Grade IV	Neck complaint and fracture/dislocation

It is also significant that multiple symptoms are common with WAD; neck pain, neck stiffness, head ache, low back pain, shoulder pain, visual disturbance/dizziness, sleep disruption, cognitive function, jaw pain and tinnitus are all possible in any combination. WAD patients may also have psychological effects from either the accident or their symptoms; e.g. anxiety or travel phobia. It is important to be clear that WAD grade I and II cases are potential patients for osteopaths; grades III and IV require urgent investigation and medical care.

Tissue injury

WAD grade III or IV cases may involve serious tissue trauma and instability to ligament, joint, disc and bone tissue, requiring urgent investigation and medical care. The scientific evidence suggests that WAD grade I and II cases most likely have symptoms resulting from lesser trauma to joint and muscle tissue[3, 4]. Joint and muscle tissue trauma, and the effects of trauma (altered muscular function), may result in movement disorders of the neck, low back and surrounding soft tissues. It is the spinal movement disorders and associated soft tissue reactions, which contribute to symptoms that osteopaths may be able to help with. The scientific evidence suggests that long lasting (chronic) neck pain in WAD may result from trauma to the zygapophyseal joints of the cervical spine[3]. However the scientific evidence also suggests that psychological and social factors influence the development of chronic neck pain[3].

Treatment

The most up to date scientific evidence suggests that treatment and management of WAD grades I and II should involve a conservative approach, likely to include patient education, exercise(s) and joint mobilisation[5]. Although the quality of this scientific evidence is not high enough to publish specific clinical guidelines in the UK[6], there is enough robust clinical and basic science evidence to support a conservative proactive management approach[7]. Importantly, it should also be noted that evidence from large population-based studies suggest that too much healthcare and rehabilitation too early after the injury can be associated with delayed recovery and the development of chronic pain and disability[5].

Overall, the consensus within musculoskeletal healthcare groups is that the scientific evidence, although not of high quality, supports active clinical management of WAD grades I and II comprising; patient education (with particular focus to return to normal activities as soon as possible), neck muscle exercises combined with general exercise, and possible manual therapy (soft tissue massage, joint mobilisation) as the most likely approach to reduce recovery time, and limit longer lasting effects of trauma. This active approach to patient rehabilitation requires constant awareness by the health professional of the need to avoid treatment dependency, which may result from clinicians unsubstantiated messages given about the seriousness of the tissue trauma and its effects.

Two systematic reviews have been published also that address physical and psychological prognostic factors associated with the development of late whiplash syndrome[8,9].

Osteopaths are well placed to deliver this proactive conservative treatment approach for cases of WAD grades I and II. However, it is imperative that a poor response to osteopathic treatment or a deteriorating clinical situation should initiate appropriate medical referral immediately. Scientific research into WAD is continuous, and knowledge is constantly being updated and guidance to clinicians may well alter when high quality new evidence becomes available.

References

1. Jull GA, Söderlund A, Stemper B, et al. Toward Optimal Early Management After Whiplash Injury to Lessen the Rate of Transition to Chronicity: Discussion Paper 5. Spine: 1 December 2011 - Volume 36 - Issue - p S335–S342

2. Spitzer WO, Skovron ML, Salmi LR et al. Scientific monograph of the Quebec Task Force on whiplash-associated disorders: redefining "whiplash" and its management. Spine 1995; 20, Supplement: 8S-73S.

3. Bogduk, Nikolai MD, PhD. On Cervical Zygapophysial Joint Pain After Whiplash. Spine: 1 December 2011 - Volume 36 - Issue - p S194–S199

4. Curatolo, Michele MD, PhD; Bogduk, Nikolai MD, PhD; Ivancic, Paul C. PhD; McLean, Samuel A. MD, MPH; Siegmund, Gunter P. PhD; Winkelstein, Beth A. PhD. The Role of Tissue Damage in Whiplash-Associated Disorders: Discussion Paper 1 Spine: 1 December 2011 - Volume 36 - Issue - p S309–S315.

5. Côté, Pierre DC, PhD; Soklaridis, Sophie PhD. Does Early Management of Whiplash-Associated Disorders Assist or Impede Recovery? Spine: 1 December 2011 - Volume 36 - Issue – p S275–S279.

6. Verhagen AP, Scholten-Peeters GGGM, van Wijngaarden S, de Bie R, Bierma-Zeinstra SMA. Conservative treatments for whiplash. Cochrane Database of Systematic Reviews 2007, Issue 2. Published online 17 Feb 2010.

7. Lamb, S; Gates, S; Underwood, M; Cooke, M; Ashby, D; Szczepura, A; Williams, M; Williamson, E; Withers, E; Isa, S; Gumber, A. Managing Injuries of the Neck Trial (MINT): design of a randomised controlled trial of treatments for whiplash associated disorders. BMC Musculoskeletal Disorders 2007;8:7.

8. Williamson E, Williams M, Gates S, Lamb SE (2007) A systematic literature review of psychological factors and the development of late whiplash syndrome. Pain 2008;135(1-2):20-30

9. Williams M, Williamson E, Gates S, Lamb S. A systematic literature review of physical prognostic factors for the development of Late Whiplash Syndrome. *Spine* 2007;*32(25):E764-780*.