

Chapter 47

Whiplash Associated Disease

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Description

Quebec Classification

Whiplash associated disorder (WAD) is the name given to a collection of symptoms including pain in the neck, head, shoulder and arms following rear end collisions. The classic explanation is that the head is suddenly jerked back and forth beyond its normal limits after a collision or car crash, causing the muscles and ligaments supporting the neck to be injured. More precisely, an upward force on the cervical spine causes abnormal movements of the lower cervical spine with damage to the zygapophyseal and other joints between the vertebrae, at least in some cases. The injury may or may not cause acute symptoms. Those symptoms may be contrived; they may be mild; or they may be serious. The treatment may or may not be effective and many patients may develop chronic problems. The outcome of the natural history of this condition is not predictable and thus Whiplash disease may be the reason for many legal proceedings. The Quebec classification is the most common grading system of Whiplash disease and is based primarily on pathoanatomy.

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Grade 0:	No complaint about the neck; no physical signs
Grade I:	Neck complaint – pain, stiffness, or tenderness only
Grade II:	Neck complaint and musculoskeletal signs ^a
Grade III:	Neck complaint and neurological signs ^b
Grade IV:	Neck complaint and fracture or dislocation

^aMusculoskeletal signs include ↓ range of motion and point weakness

^bNeurologic signs include ↓ or absent deep tendon reflexes, weakness, and sensory deficits

Symptoms that may occur in all grades include deafness, dizziness, tinnitus, headache, memory loss, dysphagia, (TemporoMandibular Joint Dysfunction) TMJ pain.

Treatment Strategy [1–5]

There is no specific grading in treatment options based on the Quebec classification apart from the fact that grade IV injuries may require some kind of surgical intervention in respect to the type of fracture or dislocation. The typical approach to Whiplash treatment is the use of passive treatments such as anti-inflammatory medications, analgesics (pain killers) and muscle relaxants. Soft collars and Cervical pillows are commonly used as well. Some kind of active treatments such as physical therapy including traction or range of motion exercises may be included. In more severe cases anaesthetic injections, nerve block injections and facet joint injections may be prescribed. The quality of evidence relevant to the effectiveness of treatments for acute and chronic WAD is not high. There is nevertheless enough consistency in the findings of systematic reviews to indicate that some approaches to treatment are more effective than others.

- Acute WAD is best treated with early physical activity and active treatments, rather than with passive treatments.
- For chronic WAD (i.e. cases where symptoms have persisted for more than 6 months), radiofrequency neurotomy is effective in cases where diagnostic blocks have indicated the presence of injury associated with the cervical zygapophyseal joints. The combination of cognitive behavioural therapy with physical therapy interventions has also been found to be effective. Relevant studies have focused on the importance of psychosocial factors in affecting the outcome.

Whiplash associated disorder – evidence according to Quebec classification

Classification	Meta-analysis	Systematic review	Cochrane library [6–10]
Grade I	No effectiveness of botulinum toxin injections [11, 12]	Consensus for mobilization, exercise and manual therapy [13–21]	No consensus for treatment
		Corticosteroids for acute WAD and local anaesthetics [22]	
		Moderate evidence for radiofrequency neurotomy [13, 14, 19–21]	

Whiplash associated disorder – evidence according to Quebec classification			
Classification	Meta-analysis	Systematic review	Cochrane library [6–10]
Grade II	Consensus for physiotherapy [23]	Consensus for mobilization, exercise and manual therapy [14–17, 20]	No consensus for treatment
	No effectiveness of botulinum toxin injections [11, 12]	Corticosteroids for acute WAD and local anaesthetics [22] Moderate evidence for radiofrequency neurotomy [14, 19, 21]	
Grade III	No effectiveness of botulinum toxin injections [11, 12]	Consensus for mobilization, exercise and manual therapy [14–19, 21]	No consensus for treatment
		Corticosteroids for acute WAD and local anaesthetics [22]	
		Moderate evidence for radiofrequency neurotomy [14, 19, 21]	
Grade IV	Lack of evidence [11, 12, 23]	Lack of evidence [13–21]	Lack of evidence

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