CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

SIMON TINAWI MD
PHYSICAL MEDICINE & REHABILITATION
MUHC
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

DISCLOSURE
Simon Tinawi is president of SMS Technologies Inc
OBJECTIVES

1) Definition of Whiplash.
2) Classification
3) Prognosis
4) Management
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

INTRODUCTION

• WAD incidence (70 to 329/100000 people).
• Natural recovery within a few months.
• Estimated 50% still symptomatic one year after injury.
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

DEFINITION

• Whiplash is an acceleration-deceleration mechanism of energy transfer to the neck;
• Which may result in bony or soft tissues injuries;
• Which, in turn, may lead to a variety of clinical manifestations (WAD).

CLASSIFICATION

GRADE I : Neck c/o pain, stiffness or tenderness
No physical sign(s)

GRADE II : Neck complaint
Musculoskeletal sign(s)

GRADE III : Neck complaint
Neurological sign(s)

GRADE IV : Neck complaint
Fracture or dislocation or SCI
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

CLASSIFICATION

ACUTE : Less 2 weeks
SUBACUTE : 2 to 12 weeks
CHRONIC : Longer than 12 weeks
PROGNOSIS

(Highly variable results)

6 Months  27% still affected
12 Months  26% still affected
24 Months  44% still affected

7% unable to return to work
FACTORS FOR POOR PROGNOSIS

High pain intensity in the neck
Radicular symptoms and signs
Older age
Female gender
Tort insurance systems
FACTORS FOR DELAYED RECOVERY

Psychological and psychosocial issues (depression, passive coping, perceived helplessness, higher level of somatization).

Expectation of recovery

CLINICAL MANAGEMENT APPROACH
FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

INTERVENTIONS FOR
ACUTE WAD

Robert Teasell et al
A research synthesis of therapeutic interventions for WAD

Pain Res Manage Vol 15 No 5 Sept/Oct 2010
INTERVENTIONS FOR ACUTE WAD

EDUCATIONAL INTERVENTIONS:

No significant measurable benefit.

However, oral and video presentation may be more effective.
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

INTERVENTIONS FOR ACUTE WAD

EXERCISE PROGRAMS:

• Exercise programs are significantly more effective in reducing pain intensity over both the short and medium term. Long term recovery unaffected by either exercise or immobilization (collar).

• Mobilization program (+/-) exercise = similar levels of recovery at 6 months
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

INTERVENTIONS FOR ACUTE WAD

MOBILIZATION PROGRAMS:
Active mobilization is more effective than immobilization with a soft collar (reduced pain intensity > increased ROM)
PHARMACOLOGICAL INTERVENTIONS:

Infusion of Methylprednisolone: There is some evidence that it is effective in improving recovery from WAD.

Need for larger sample size studies.
INTERVENTIONS FOR

ACUTE WAD

PULSED ELECTROMAGNETIC FIELD THERAPY:
Insufficient evidence to support the use of this treatment with confidence.

LASER ACUPUNCTURE:
NOT any more effective than placebo.
INTERVENTIONS FOR SUBACUTE WAD

EXERCISE PROGRAMS:

Supervised program is better than unsupervised.

An Earlier program is better than a later one.

The use of an aggressive work-hardening type approach can be counterproductive.
INTerventions for Subacute WAD

Interdisciplinary Interventions:

There is some evidence that interdisciplinary interventions may be more effective in reducing pain and sick leave than passive phtx.

(Adams et al, 2007; Suissa et al, 2006; Provincialli et al, 1996)
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

INTERVENTIONS FOR SUBACUTE WAD

MANUAL JOINT MANIPULATION:

Cervical and thoracic spinal manipulations are effective in reducing pain and improving ROM. (Short term benefit / follow-ups of 1 week and 1 month).

Further research is needed.
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

INTERVENTIONS FOR SUBACUTE WAD

INJECTION-BASED INTERVENTIONS:

BOTOX INJECTIONS:
NOT more effective than PLACEBO
INTERVENTIONS FOR CHRONIC WAD

EXERCISE PROGRAMS:
Exercise programs appear to be effective in relieving pain, although the relief is maintained over the long period.
Specific exercise protocols seem more effective than others (Strength > endurance).
INTERVENTIONS FOR CHRONIC WAD

INTERDISCIPLINARY INTERVENTIONS:

Conflicting evidence concerning Interdisciplinary interventions and particularly the use of Cognitive Behavioral Therapy (CBT).

Difficult to formulate conclusions given the heterogeneity of the interventions.
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

INTERVENTIONS FOR CHRONIC WAD

MANUAL JOINT MANIPULATION:

Chiropractic manipulation may reduce chronic WAD related disability over the short term, the evidence is insufficient to determine the effectiveness of this intervention.
INTERVENTIONS FOR CHRONIC WAD

PHARMACOLOGICAL INTERVENTIONS:

MELATONIN: NOT effective
INTerventions FOR

CHRONIC WAD

ALTERNATIVE INTERVENTIONS:

Myofeedback training: Limited evidence

Gestalt, Rosen bodywork, craniosacral therapy: NOT beneficial
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

INTERVENTIONS FOR CHRONIC WAD

INJECTION-BASED INTERVENTIONS:

Sterile water injections: Methodological concerns prohibit support for this treatment

Botox injections: Contradictory evidence regarding the effectiveness

Corticoid injections: Intra-articular and selective nerve root block injections did not appear to be effective for pain relief.
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

INTERVENTIONS FOR CHRONIC WAD

INJECTION-BASED INTERVENTIONS:

Dextrose and Lidocaine intra-articular injections: (joint regeneration) may reduce pain but evidence is not strong to establish effectiveness.

Epidural blood patch therapy: One case series (25 pts) suggests that EBP may be effective for chronic WAD involving a suspected CSF leak, the association of CSF leak and chronic WAD has never been established.
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

INTERVENTIONS FOR CHRONIC WAD

SURGICAL INTERVENTIONS:

Radiofrequency neurotomy:

Although relief may not be permanent, there is strong evidence that RNF is effective in reducing pain.

Occipital nerve decompression and Carpal tunnel decompression:

Limited evidence.
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

INTERVENTIONS FOR CHRONIC WAD

SURGICAL INTERVENTIONS:

Cervical discectomy and fusion:

It is not clear whether this procedure provides substantial relief.
CLINICAL MANAGEMENT APPROACH FOR WHIPLASH-ASSOCIATED DISORDERS (WAD)

CONCLUSIONS

• Exercise and mobilization programs: most frequently investigated during the continuum.

• Interdisciplinary Interventions 2nd more frequently studied type of intervention.
CONCLUSIONS

ROLE OF THE PHYSICIAN

ASSESSMENT (PATIENT/RISK FACTORS).

REASSURANCE.

REGULAR FOLLOW-UP.

PREVENTION OF CHRONICITY.

SELECTION OF INTERVENTIONS