Initial Management of Whiplash Injuries
A Regional Comparison

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Spinal Column Injuries

- Part of a collection of data from all 12 Regional Hospitals over 12 weeks
- Database of all patients presenting with spinal column injuries
Presentation

• Present the demographic and epidemiological data for cervical column injuries

• Compare the current use of soft collars within region

• Ongoing studies
  • use of X-rays
  • use of ambulance transport
  • clinical outcome at 1 year
Whiplash

- Crowe 1928
  - “sudden hyperextension followed by hyperflexion of the neck”

- 10,000 studies published
  - still controversial

- 1,000,000 cases in USA/year
Whiplash

- Quebec Task Force 1995
  - temporary discomfort
  - usually self-limited
  - favourable prognosis
• Whiplash-Associated Disorders
• WAD
• Europe between £3.3 and £6.6 billion (€2.25 and €4.5 billion) by insurance companies for whiplash injuries
Mitigate the patient’s loss

- Offering the best initial management
  - Quebec Task Force recommend
    - Restrict the use of soft cervical collars to a minimum period
    - Prolonged use of collars is detrimental
Initial Management

- Traditionally
  - rest
  - analgesia
  - a period of immobilisation in a soft cervical collar
    - usually from 2 weeks upwards
  - graduated exercises
Early mobilisation Vs. Immobilisation

- Mealy et al, Dublin BMJ, 1986
  - Early benefit (8 weeks)
    - active movement gave significant improvements for both cervical movements and pain intensity
- McKinney, Belfast, BMJ 1989
  - Late outcome (2 years)
    - early mobilization reduces the number of patients with symptoms after two years
Early mobilisation Vs. Immobilisation

• Borchgrevink et al, Norway, Spine 1998
  – first 14 days
    • continue normal activities
    • time off work and soft neck collar immobilisation
• single blinded, randomised treatment study
• 201 patients, 6 months F/U
Borchgrevink et al, Norway, Spine 1998

- Significant reduction of symptoms
  - less pain during daily activities
  - less neck stiffness
  - better concentration
Intra-Regional comparison between seven SWT hospitals
928 patients

11 cases per hospital per week
Regional totals

- 928
  - Extrapolate for 12 Hospitals across the region
    - 1500 whiplash injuries in 12 weeks
  - Yearly total 6500 for the Region
    - underestimation
  - Regional incidence 200 per 100,000 per year
Saskatchewan 700 per 100,000
1987 Quebec 70 per 100,000
1982 Australia 106 per 100,000
New Zealand 13 per 100,000
1990 Wirral 100 per 100,000
1998 SWT 200 per 100,000
Whiplash Sex and Age Distribution

average female age 30.57 years
average male age 32.49 years

- <16yrs
- 17-24yrs
- 25-32yrs
- 33-39yrs
- 40-46yrs
- 47-52yrs
- 53-59yrs
- >60yrs

Males
Females

Bar chart showing the distribution of whiplash cases by age group and gender, with higher counts in the 17-24 years age group for both males and females.
Sex

- Females: 57%
- Males: 43%

Hospital A: females 64%
Hospital B: females 56%
Hospital C: females 53%
Hospital D: females 56%
Hospital E: females 54%
Hospital F: females 50%
Why Women?

Relative neck muscle bulk to head size

More litigious??
• Drivers 73%
  - A = 64%; B = 73%; C = 79%; D = 71%

• Front passengers 20%
  - A = 26%; B = 21%; C = 14%; D = 20%

• Rear seat passengers 7%
  - A = 10%; B = 6%; C = 7%; D = 9%
Ambulance

6 patients admitted

32% of patients with whiplash patients transported to A/E by ambulance

29% of these patients had another injury

Surrey and Sussex
X-ray

- 49.7% patients had a cervical neck X-ray
- Three ? #’s
  - cleared by Orthopaedic review
- One anterior cervical soft tissue swelling
  - normal CT scan
A&E X-rays

- Commonly performed before release from spinal immobilisation boards
  - wedge fracture
  - facet dislocation
- difficulty swallowing
- neurology
- pre-existing pathology
soft cervical collars

Hospital A
68% were discharged with a collar

Hospital B and Hospital D
28% 30%

Hospital C
< 1%
Findings and Outcome in Whiplash-Type Neck Distortions

- Jonsson et al, Uppsala, Sweden
  - Spine 1994
- 50 consecutive patients
- 24 persistent pain
  - 2 posterior fusions
    - complete pain relief
  - 8 Discectomy and anterior fusion
    - alleviation of pain
  - 14 non-surgical patients had persistent symptoms
Jonsson et al, Uppsala, Sweden
Spine 1994

• Conclusion
• “Neck and radiating pain were alleviated by early disc excision and fusion.”
Possible benefit for patients

– earlier mobilisation
– less pain
– better long term results
– “mitigate their loss”
– avoid spinal surgeon’s knife

• Benefits to the hospital A
– reduction in the use of soft collars
– reduced nursing time, fitting and instructing
THANK YOU