CURRENT SURGICAL PRACTICE FOR TRAUMATIC SPINAL CORD INJURY IN CANADA

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INTRODUCTION

• Traumatic spinal cord injury (tSCI) comprises a large percentage of traumatic injuries
• It is estimated that tSCI is diagnosed in 5% of all trauma victims
• The majority of patients are from ages 16-32
• Over the past few years there has been an increasing trend toward surgical intervention
INTRODUCTION

• Evidence supports the implementation of early surgical intervention but there is still no consensus for the timing of surgery
• Published data on rates of surgery for tSCI vary widely internationally
INTRODUCTION

• Several criteria may play a role in deciding treatment options in tSCI patients:
  – Severity of initial neurological injury
  – Medical comorbidities
  – Age
  – Biomechanical stability
  – Osteoligamentous integrity
  – Surgical resources
OBJECTIVE: TO DETERMINE SURGERY RATES FOR TSCI IN CANADA

-Demographics
-Clinical characteristics
METHODS

• Registry (RHSCIR) participants with complete records
• Recruited from 2004-2013 from 18 acute care centres across Canada
• Patient characteristics vs surgery y/n analyzed
RESULTS - COHORT

- 1440 participants
- 1250 (86.8%) had acute surgery
RESULTS - PATIENT FACTORS

• No surgery-related difference in:
  – Gender
  – Ethnicity
  – Glasgow Coma Scale \text{(admission)}
  – Charlson Comorbidity Index \text{(admission)}
MORE LIKELY TO HAVE SURGERY IF . . .

- Younger (44.6y vs 52.1y, p<0.0001)
- Higher energy injury (88.9% vs 84.3%, p=0.0115)
- Admission AIS A/B vs C/D (95.1% vs 80.7%, p<0.0001)
- No comorbidities (92.7% vs 75.2% with 1+, p<0.001)
- Thoracic level of injury (p<0.0001)
  - Thoracic (T2-T10; 94.1%), Thoracolumbar (T11-L2; 91.6%), Low cervical (C5-T1; 86.8%), High cervical (C1-C4; 81.1%)
ACUTE LOS

• Longer LOS in those having surgery (mean 41.3d vs 29.5d, p<0.0001)

• Acute LOS also correlated to:
  – AIS A/B 51.5d vs C/D 26.5d (p<0.0001)
  – Injury level (p<0.0001; decreasing LOS as injuries become more caudal)
RESULTS - SYSTEM FACTORS

• No difference in:
  – Time to first neurologic examination
  – Routing via community hospital
RESULTS - SYSTEM FACTORS

• Geography:
  – Surgery rate ranged from 91.4% to 71.3%
  – Other system factors?
    • Availability of OR
    • Day of week injured
    • Remote locations
FUTURE DIRECTIONS

• Geographical differences in care
• Surgeon preference?
• Type of injury (shear/compression)
  – Imaging
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THANK YOU