



Reduction in cervical spine immobilization is not associated with missed injuries

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DISCLOSURES

- No disclosures



BACKGROUND

- EMS providers can correctly determine which patients have cervical spine injuries
- Patients arriving via EMS without a cervical collar rarely have serious cervical spine injuries
- Local protocol changed from spinal immobilization to spinal motion restriction (SMR)
- SMR protocol associated with decreased cervical collar use

STUDY AIM

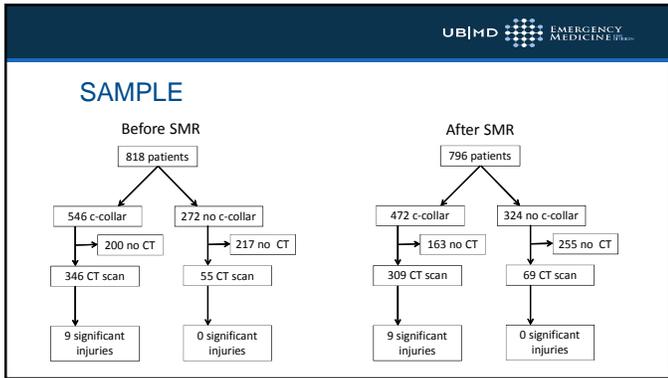
- Is decreased cervical collar use associated with an increase in serious cervical injuries among patients transported without cervical collars?

METHODS

- Secondary analysis of a retrospective chart review
- Adult patients transported by a single EMS agency with a dispatch for motor vehicle collision to one of 3 hospitals
 - Electronic screening of EMS agency PCR
 - Matching hospital record
- 6 month period before (Jan-June 2015) and a 6 month period after (Jan-June 2016) the SMR protocol change

METHODS

- Fisher exact test and t-test used for statistical comparison between time periods
- Serious cervical spine injuries identified on CT
 - Operative intervention
 - Discharge in an immobilization collar
 - Cervical spine injuries present in patients who died as a result of traumatic injuries
 - Initial screening of CT reports and hospital records by trained research associates, verified by attending physician review



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SAMPLE

	Before SMR	After SMR	p-value
Male	52.9%	50.5%	0.34
Age (yr)	38.9 (0.54)	39.4 (0.58)	0.51
Trauma center	77.5%	83.2%	0.005
MVC subtype	83.9%	82.5%	0.80

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- ### RESULTS
- Cervical collar use decreased from 66.8% to 59.3% (p=0.002)
 - No significant difference
 - Proportion of male patients
 - Average age
 - Subtype of motor vehicle accident
 - Increase in transport to trauma center
 - No significant change was observed in the rate of CT cervical spine imaging (51.0% before and 52.5% after, p=0.55)

RESULTS

- Serious cervical spine injuries were identified in 2.2% before and 2.4% of imaged patients after SMR ($p=0.99$).
- All patients with serious cervical spine injury were placed in cervical collars by EMS providers, a sensitivity of 100%.
- Specificity was 14.0% before and 18.7% after SMR ($p=0.10$).

LIMITATIONS

- Single mechanism of injury evaluated
- Single EMS system
- CT-identified injuries

CONCLUSIONS

- Overall decrease in use of cervical collars with Spinal Motion Restriction protocol
- No motor vehicle accident patients with serious cervical injuries transported without a cervical collar in either period
