

Prognostic factors for chronic neck pain in persons with minor or moderate injuries in traffic accidents

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FROM ABSTRACT:

Prognostic factors for chronic neck pain were identified in a prospective Norwegian insurance cohort comprising 636 persons with minor or moderate traffic injuries.

One questionnaire was used at baseline and another at 3 years post-injury. Daily severe or very severe neck pain at three years follow up was defined as chronic neck pain.

Eight significant independent prognostic factors for chronic neck pain were identified:

- 1) Rear-end or frontal and rear-end collision [Increased risk by 310%]
- 2) Neck and/or shoulder pain before the accident [Increased risk by 138%]
- 3) Post-accident memory and concentration problems [Increased risk by 362%]
- 4) Post-accident bodily tension [Increased risk by 243%]
- 5) Post-accident difficulties to climb stairs [Increased risk by 403%]
- 6) Post-accident difficulties to bend forward [Increased risk by 385%]
- 7) Post-accident difficulties to do heavy labour [Increased risk by 270%]
- 8) Beliefs in future work disability [Increased risk by 164%]

The results indicate that development of chronic neck pain is influenced by pre-accident neck and/or shoulder pain, the impact of the collision, as well as post-accident symptoms, perceived impaired function and pessimism for the future ability to work.

THESE AUTHORS ALSO NOTE:

"Neck pain is the most common symptom in whiplash injuries, typically caused by rear-end collisions."

Only "3–5% of persons exposed to a whiplash trauma in a car crash will develop acute symptoms." 80% of these symptoms are neck pain and headache.

10% of those that develop whiplash symptoms will develop chronic complaints that have a considerable impact on their level of functioning.

In this study, the authors "defined daily severe or very severe neck pain 3 years after the accident as chronic neck pain."

RESULTS:

- 1) Among the 1,638 responders, 1,067 (65.1%) reported neck complaints after the accident.
- 2) Of those with neck pain, 776 (72.7%) reported that the complaints started within 72 h after the accident. **[This means that 27.3% developed neck pain after 72 hrs of being in the collision]**
- 3) In the final 3 year evaluation, 87 (13.7%) had developed chronic neck pain.
- 4) The prognosis was not related to gender or age.
- 5) "The risk for chronic neck pain was higher with rear-end or frontal and rear-end impact than with frontal or side impact."
- 6) Memory and concentration problems that developed later than 3 days after the accident were related to a worse prognosis for chronic neck pain at 3 years.
- 7) Difficulties to climb stairs, difficulties to bend forward and difficulties to do heavy labor were all associated with a poor prognosis.
- 8) The pain drawing was divided into squares. Patients who marked the largest number of squares, especially if more than 7 squares were marked, were significantly associated with a poor prognosis for recovery.

DISCUSSION

"The present study identified eight significant independent prognostic factors for chronic neck pain after traffic accidents. These comprised neck and/or shoulder pain before the accident, the impact of the collision, early post-accident bodily tension and impaired cognitive and physical function, as well as pessimism for the future ability to work. These factors predicted 72% of those who developed chronic neck pain correctly."

"The present results suggest that the frequencies of acute symptoms and chronic neck pain after whiplash trauma are higher than previously concluded by a Norwegian expert group."

"The risk for chronic neck pain is higher in collisions with rear-end compared to frontal or side impact."

"The predictive capacity of the eight independent significant prognostic factors identified in this study suggests that they represent valuable information to identify the individuals with the highest risk for developing chronic neck pain after traffic injuries, and thus being in need for early treatment."

KEY POINTS FROM DAN MURPHY

- 1) This study evaluated prognostic factors for chronic neck pain using a prospective study involving 636 persons with minor or moderate traffic injuries at baseline and then again at 3 years after injury.
- 2) Daily severe or very severe neck pain at three years follow up was defined as chronic neck pain; 13.7% had chronic neck pain at 3 years follow-up.
- 3) Eight significant independent prognostic factors for chronic neck pain were identified:
 - A)) Rear-end or frontal and rear-end collision [Increased risk by 310%]
 - B)) Neck and/or shoulder pain before the accident [Increased risk by 138%]
 - C)) Post-accident memory and concentration problems [Increased risk by 362%]
 - D)) Post-accident bodily tension [Increased risk by 243%]
 - E)) Post-accident difficulties to climb stairs [Increased risk by 403%]
 - F)) Post-accident difficulties to bend forward [Increased risk by 385%]
 - G)) Post-accident difficulties to do heavy labour [Increased risk by 270%]
 - H)) Beliefs in future work disability [Increased risk by 164%]
- 4) Only "3–5% of persons exposed to a whiplash trauma in a car crash will develop acute symptoms." 80% of these symptoms are neck pain and headache.
- 5) In this study, 27.3% developed neck pain after 72 hrs of being in the collision.
- 6) The pain drawing was divided into squares. Patients who marked the largest number of squares, especially if more than 7 squares were marked, were significantly associated with a poor prognosis for recovery.
- 7) "The present results suggest that the frequencies of acute symptoms and chronic neck pain after whiplash trauma are higher than previously concluded."
- 8) "The risk for chronic neck pain is higher in collisions with rear-end compared to frontal or side impact."
- 9) "The predictive capacity of the eight independent significant prognostic factors identified in this study suggests that they represent valuable information to identify the individuals with the highest risk for developing chronic neck pain after traffic injuries, and thus being in need for early treatment."