Initial Neuropathic Pain Symptoms Predict Musculoskeletal Pain Severity Six Weeks After Motor Vehicle Collision

Neuropathic Pain Symptoms Identify Individuals More Likely to Transition from Acute to Persistent Pain in Post-Operative Settings (e.g., 12). Persistent musculoskeletal pain (MSP) after motor vehicle collision (MVC) is common and results in substantial societal costs.1,2 However, to our knowledge, the ability of neuropathic pain symptoms in the hours after MVC to predict MSP persistence/severity has not been assessed.

In this study we evaluated the hypothesis that neuropathic pain symptoms in the emergency department (ED) in the hours after MVC would predict MSP severity at six weeks.

MATERIALS AND METHODS
This prospective observational study recruited patients presenting to one of eight EDs in the immediate aftermath of MVC (Figure 1). Consenting participants completed ED evaluation including an assessment of overall pain severity (0-10 NRS, mild pain = NRS 1-3, moderate pain 4-7, severe pain 8-10) and an assessment of neuropathic pain symptoms (assessed using Douleur Neuropathique en 4 (DN4) Questions), severity of each symptom evaluated using a 0-10 NRS. Assessments were repeated at 6 weeks follow-up. Uni- and bivariate analyses were performed using descriptive statistics and chi square analyses, respectively. Multivariates analyses were performed using linear regression.

RESULTS
115/129 (89%) participants completed the 6-week follow-up assessment. Most participants (n = 115) had some education past high school, came directly to the ED after their MVC, and reported moderate or severe vehicle damage (Table 1). In the ED, 106/129 (85%) patients reported acute pain and 87% patients reported moderate or severe pain (Table 2).

Neuropathic pain symptoms were commonly reported in the ED. 76/119 (69.7%) of patients with pain in the ED reported experiencing one or more neuropathic pain symptoms.

ED neuropathic pain score and ED pain severity were only moderately correlated (r=0.35, p<0.01). At 6 weeks, 78/115 (68%) patients reported persistent MVC-related MSP. 51% patients reported moderate or severe pain.

RESULTS CONTINUED...
6/78 (7%) of patients with persistent MSP at 6 weeks reported coincident neuropathic pain symptoms.

Neuropathic pain symptoms in the hours after MVC that best predicted 6 week MSP severity were painful cold and pins and needles (Table 2).

Neuropathic pain score reported in the ED predicted overall pain intensity at six weeks (model adjusting for age and sex, Table 3). The ED pain intensity was also added to this model, neuropathic pain score was not an independent predictor of pain intensity at six weeks in this sample (Table 3).

DISCUSSION
Neuropathic pain symptoms are common in the immediate aftermath of MVC and are associated with persistent pain. The presence of specific neuropathic symptoms (e.g., pins and needles) at the time of initial evaluation may be useful in predicting which patients are at increased risk for developing persistent pain.

INTRODUCTION

REFERENCES


