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Is the self-reported history accurate in patients with persistent axial pain after a motor vehicle accident?

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Abstract

BACKGROUND CONTEXT: A patient's self-reported history has, in general, assumed to be accurate. Clinical management of individuals with persistent axial pain after a motor vehicle accident (MVA) and measures to prevent future MVA, spinal cord injury, and traffic deaths often depend on a presumed accurate report of preexisting axial pain, drug, alcohol, and psychological problems to initiate intervention. In addition, research efforts to determine the effects of MVA on subsequent health are often predicated on a presumed accurate history from the patient of past medical and psychosocial problems. Despite so many clinical, public health, and research efforts being dependent on an accurate assessment of pre-injury health, the validity of the self-reported history after MVA has not been systematically investigated.

PURPOSE: To determine the validity of self-reported history in subjects with axial neck or back pain attributed to a recent MVA.

STUDY DESIGN: A prospective, multiclinic validation study examining the critical elements of a patient's self-reported history after an MVA judged against an audit of his or her medical records.

PATIENT SAMPLE: A cohort of consecutive patients with persistent axial pain after an MVA was prospectively identified from five spine-specialist's outpatient clinics. Of 702 patients, 335 subjects were randomly selected for auditing of their medical records.

OUTCOME MEASURES: Self-reported demographic and clinical features were recorded by standardized questionnaires and clinical interviews. Audits compared these responses to an extensive medical record search.

METHODS: The self-reported prevalence of preexisting axial pain, at-risk comorbidities (psychological distress, alcohol, and drug abuse), and control conditions (hypertension and diabetes) was recorded. The medical records of a random sample of 50% of the enrolled cohort underwent auditing of their medical records in a wide search of network paper and electronic and archived records, and compared with the self-reported history of pre-accident health.

RESULTS: Overall, approximately 50% of the subjects were found to have previous axial pain problems at audit when none was reported to the spine-specialist after an MVA. Similarly, approximately 75% of the subjects were found to have one or more preexisting comorbid conditions at audit that were not reported during the evaluation after the MVA (alcohol abuse, illicit drug use, and psychological diagnosis). For those who perceived that the accident was the fault of another, as opposed to their own or no one's fault, the documented previous back and neck pain troubles in the medical records was more than twice the self-reported rate of these problems ($p<.01$). The rate of previously documented psychological problems was more than seven times that of the self-reported rate ($p = 0.001$). In those subjects who perceived that the accident was their own or no one's fault, a lesser degree of under-reporting of axial pain and comorbid conditions was found.

CONCLUSION: The validity of the patient's self-reported history when presenting with persistent axial pain after an MVA appears poor in this large multiclinic random sample.The self-reported rates of alcohol abuse, illicit drug use, and psychological diagnosis, as well as prior axial pain were significantly lower than that seen in the medical records, especially in thosewho perceive that the MVA was another's fault. The failure to recognize this under-reporting may seriously compromise

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clinical care, public health efforts at injury prevention, and research protocols dependent on accurate pre-accident morbidity assessments.

Keywords: Motor vehicle accident; Validity; Back pain; Neck pain; Depression; History

Introduction

The self-reported clinical history in patients after trauma has generally been expected to yield valuable and reliable information. Certain elements of the history can dictate probable diagnoses, need for further investigation, treatment, and prognosis. This is especially true in the case of persistent neck or back pain where a past history of axial pain is a strong predictor of poor outcomes [1–4]. Similarly, depression and other comorbidities have also been associated with future axial pain episodes, pain severity, and prolonged illness [3,5–8].

The validity of a patient's history after a motor vehicle accident (MVA) has, in general, assumed to be accurate. This information is often used in clinical and population research to determine the effects of MVA on future illness burden and health-care utilization. However, one can hypothesize that some factors may compromise the validity of this history as reported to clinicians and researchers. For instance, distraction of the recent accident, litigation concerns, and reluctance to discuss substance abuse or emotional troubles may account for some variance between the reported and actual relevant medical history.

Nonetheless, serious traffic accidents in the setting of existing emotional distress, depression, or substance abuse may be critical events allowing identification of persons at-risk for future events, and perhaps allow the opportunity for intervention to prevent more serious injury or death. A previous history of these factors is clearly associated with future serious MVA injuries, including an increased risk of future MVA-related spinal cord injury or death [9–11].

In a pilot study, 100 subjects underwent a limited audit of medical records to establish the validity of their self-reported prior history of axial back and neck pain after an MVA, as well as certain at-risk comorbidities associated with axial pain (depression, drug abuse, alcoholism, and psychological distress) [12]. In that study, approximately 70% of the patients denied comorbid conditions in their postaccident history that were found to be previously documented in their records. Before this series of investigations, there was no other works that attempted to systematically examine the validity of self-reported history for axial neck and back pain after MVA. This study aims to shed further light through a large multicenter study design on the validity of self-reported axial pain and comorbid conditions following MVA.

Method

Study design

This study was a prospective, multiclinic cohort study designed to systematically evaluate the validity of self-reported patient histories of axial pain, drug, alcohol, and psychological problems in the subgroup of trauma patients without serious bone, disc, or ligamentous injuries who continued to have axial pain complaints over three months after an MVA. Self-reported responses to standardized questionnaires were compared with an audit of previous computerized medical records and any external medical referrals or notes within a large university-based health-care system.

Primary hypothesis

A random audit of previous medical records will show a high degree of agreement between self-reported comorbidities, previous axial pain, drug, alcohol, and psychological problems (plus two control conditions, diabetes and hypertension) and those found in the documented records.

Subject recruitment

Consecutive patients seen in any of the five orthopedic spine clinics affiliated with Stanford University School of Medicine (a Level I Trauma Center) for axial pain after MVA were prospectively identified. The referral area for this group is a large urban and suburban area including the entire San Francisco peninsula and greater Bay area. The ethnic and social makeup of this geographical area is very diverse and generally of a middle-range socioeconomic level (neither very indigent nor exclusively wealthy) compared with that of the California and the United States in general. Patients must have been evaluated at this institution's Emergency Department, Urgent Care Units or Medicine Walk-in Clinics or Satellite Urgent Care Clinics for this problem and subsequently seen in any of the five spine clinics in the system.

Approval was obtained from the Institutional Review Board (IRB) and the Administrative Panel of Human Subjects in Medical Research according to US Department of Health and Human Services (DHHS) regulations at Stanford University School of Medicine. Informed consent according to University and DHHS guidelines was obtained from all prospective participants at the time of the original screening.

Exclusion criteria

Any spinal or extremity fracture or dislocation associated with the MVA, significant initial head injury (Glasgow Coma Scale < 15) during emergency department admission or medical evaluation; patients not seen by the Orthopedic Group within the first three months after MVA; subjects with serious non-MVA illnesses that precluded evaluation