

Interrater Reliability and Accuracy of Clinicians and Trained Research Assistants Performing Prospective Data Collection in Emergency Department Patients With Potential Acute Coronary Syndrome

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Study objective: Clinical research requires high-quality data collection. Data collected at the emergency department evaluation is generally considered more precise than data collected through chart abstraction but is cumbersome and time consuming. We test whether trained research assistants without a medical background can obtain clinical research data as accurately as physicians. We hypothesize that they would be at least as accurate because they would not be distracted by clinical requirements.

Methods: We conducted a prospective comparative study of 33 trained research assistants and 39 physicians (35 residents) to assess interrater reliability with respect to guideline-recommended clinical research data. Immediately after the research assistant and clinician evaluation, the data were compared by a tiebreaker third person who forced the patient to choose one of the 2 answers as the correct one when responses were discordant. Crude percentage agreement and interrater reliability were assessed (κ statistic).

Results: One hundred forty-three patients were recruited (mean age 50.7 years; 47% female patients). Overall, the median agreement was 81% (interquartile range [IQR] 73% to 92%) and interrater reliability was fair (κ value 0.36 [IQR 0.26 to 0.52]) but varied across categories of data: cardiac risk factors (median 86% [IQR 81% to 93%]; median 0.69 [IQR 0.62 to 0.83]), other cardiac history (median 93% [IQR 79% to 95%]; median 0.56 [IQR 0.29 to 0.77]), pain location (median 92% [IQR 86% to 94%]; median 0.37 [IQR 0.25 to 0.29]), radiation (median 86% [IQR 85% to 87%]; median 0.37 [IQR 0.26 to 0.42]), quality (median 85% [IQR 75% to 94%]; median 0.29 [IQR 0.23 to 0.40]), and associated symptoms (median 74% [IQR 65% to 78%]; median 0.28 [IQR 0.20 to 0.40]). When discordant information was obtained, the research assistant was more often correct (median 64% [IQR 53% to 72%]).

Conclusion: The relatively fair interrater reliability observed in our study is consistent with previous studies evaluating interrater reliability for cardiovascular disease in the inpatient setting. With respect to research data, we found that prospective ascertainment of clinical data is more often correct when done by research assistants compared with clinicians simultaneously evaluating patients. [Ann Emerg Med. 2009;54:1-7.]

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0196-0644/\$-see front matter

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doi:10.1016/j.annemergmed.2008.11.023

INTRODUCTION

Background

Although prospective data collection is generally considered more precise than data collected through chart abstraction,¹ collecting such data is complicated by substantial time and funding requirements.²⁻⁷ Busy emergency physicians often

perceive that they do not have the time to enroll patients, obtain consent, and complete data collection instruments. Moreover, difficulties in securing funds for research have contributed to a decline in the total number of clinical investigators.²⁻⁷ Although research can be facilitated by looking to industry for support, doing so may create conflicts of interest.⁸⁻¹¹ A different solution