



Unreliability of reported tetanus vaccination histories

Michael Gindi MD*, Peter Oravitz DO, Regina Sexton DO, Mikhail Shpak DO,
Anita Eisenhart DO

Department of Emergency Medicine, Saint Barnabas Hospital, Bronx, NY 10457, USA

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Abstract Our study questioned the reliability of patients' reported tetanus immunization histories. One thousand patients at an urban teaching hospital were queried regarding their tetanus immunization status. Of the 377 patients who initially asserted having had a tetanus vaccine in the last 5 years, 98 (26%) were confirmed, either by further history taking or chart review, not to have received tetanus immunization. It appears that there is a sizeable percentage of patients who falsely report their tetanus immunization status.

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1. Introduction

Surveys of emergency department patients suggest that 1% to 6% of all persons in the United States who receive medical care for injuries that can lead to tetanus do not receive prophylaxis as recommended by the Advisory Committee on Immunization Practices [1]. However, it has been shown that, in a primary care setting, mothers do not reliably recall the immunization statuses of their children and tend to falsely estimate the number of vaccines their children had received [2,3]. No study to date has addressed the reliability of reported tetanus histories in an adult acute care setting.

The initial history obtained from patients concerning their last tetanus vaccination is most often taken at face value. Further elaboration frequently reveals that what patients had initially thought was a tetanus vaccine was, in fact, some

other needle injection (purified protein derivative [PPD], hepatitis booster, influenza vaccine, etc). Overconfidence in an unreliable history may lead to nonimmunization of patients at risk for tetanus. We sought to objectively evaluate the reliability of reported tetanus immunization histories.

2. Materials and methods

We recently had our residents at an urban teaching hospital with an ED census of more than 95 000 administer a survey to 1000 patients regardless of their presenting complaints. After obtaining informed consent, patients were asked, "When was your last tetanus vaccine?" Patients were classified into 3 categories based on their response. First were those patients who had no recollection as to when their last vaccination had been. Second were those who recalled that their last vaccine was administered more than 5 years ago. Third were those who asserted that their last vaccine was administered within the last 5 years. The first 2 groups were excluded from further questioning because, in an acute

* Corresponding author.

E-mail address: mikeginid@pol.net (M. Gindi).

care setting, the patients in these groups would be vaccinated if clinically indicated.

Those patients who asserted that their vaccines were taken within the last 5 years were next asked, "Why did you receive the vaccine?" Their response was considered accurate (1) if they gave a history of vaccine administration in response to a break in the skin or (2) if the history was confirmed upon further review of their medical records. Conversely, their response was considered inaccurate if further history or review of their medical records indicated that the vaccination they received was not for tetanus immunization. The response was considered indeterminate if further history and review of their medical records were equivocal.

The internal review board of our hospital approved all aspects of this study.

3. Results

Of the 1000 patients queried, 623 patients had no recollection of when they had their last tetanus vaccine or recalled that they received it more than 5 years ago. Of the 377 who recalled that their vaccination was administered within the last 5 years, 143 patients' vaccinations were verified to be for tetanus immunization by a history of a skin break. Of the 377, 52 were determined by further history as having received an injection other than tetanus (see Table 1). The remaining 182 were indeterminate by initial history and further investigation into their medical records was therefore required. Of these 182, 22 were confirmed to have been administered a tetanus vaccine according to their medical records. Of 182, 46 were determined to have been administered injections other than tetanus or were given no vaccine at all (see Table 2). The remaining 114 were indeterminate because of inability to access their medical records. Of the 377 who initially asserted having had a tetanus vaccine in the last 5 years, 165 (43.8%) were confirmed to have actually received a tetanus vaccine, 98 (26.0%) were confirmed not to have received a tetanus vaccine, and 114 (30.2%) were indeterminate.

4. Discussion

Our data support that histories obtained from patients concerning their tetanus statuses are unreliable. Twenty-six

Table 1 Injections mistaken for tetanus after further history

PPD	29
Analgesics	8
Flu vaccine	6
Hepatitis vaccine	3
Asthma treatment	3
Antibiotics	2
Rabies vaccine	1
Total	52

Table 2 Injections mistaken for tetanus after records reviewed

PPD	12
Hepatitis vaccine	2
Flu vaccine	2
Analgesics	1
Pneumovax	1
No record of tetanus found in chart	28
Total	46

percent of patients who initially stated that they have received a tetanus vaccination within the last 5 years were confirmed to have never received prophylaxis. Further clarification of those histories may be helpful in ascertaining patients' true tetanus statuses. Taking a few moments to gain more accurate information would facilitate appropriate vaccination in those patients who may otherwise miss the opportunity to be properly vaccinated. However, there still exists a substantial subset of patients in whom additional history taking will not be able to delineate their true tetanus statuses.

A major limitation to our study may be external validity. In other settings outside an urban teaching hospital, patients may be more informed about their vaccination history, possibly because they have received more consistent medical care by a primary physician. We have seen that most patients who falsely reported their tetanus status received the injection in confusion with PPD administration. Our hospital's population may receive a larger amount of PPDs than in other settings because of requirements set forth by entities such as drug detoxification programs and the United States penal system, thus allowing for more confusion between the 2 injections in our population. Further studies in other clinical settings need to be undertaken to see if results similar to ours would be found.

Another limitation is the large number of indeterminate histories. However, even if most of these indeterminate histories were subsequently found to ascertain tetanus vaccination, it still does not alter the fact that a significant number of patients (26%) did in fact convey false information in reporting their tetanus status. Finally, there still exists the possibility that vaccines were administered but not documented in the patients' medical records.

5. Conclusions

It appears that there is a good percentage of patients who falsely report their tetanus immunization status. Much in the same manner that it has become commonplace to ask the details and nature of a patient's stated drug "allergy" to determine whether it is true or not, we feel that the emergency physician should ascertain through further questioning the true nature of a patient's tetanus status and not base important health decisions upon inaccurate data.

References

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