

POSTER PRESENTATION

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The effect of presenting complaint on the risk of developing ventilator-associated pneumonia for patients intubated in an academic emergency department

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Introduction

Ventilator associated pneumonia (VAP) is a complication of mechanical ventilation that increased ICU length of stay and mortality. Eckert found 26% of trauma patients intubated in the ED develop VAP as compared to 6.5% of those intubated in the ICU. Green demonstrated that 70% of critically ill patients were intubated pre-hospital or in the ED and 18.2% remained in the ED for more than 4 hours.

Objectives

To identify patients intubated in the ED who are at risk for VAP and characterize the effect of presenting complaint on VAP risk and prevalence.

Methods

A retrospective study was performed using an existing QI database of patients intubated in the ED. For the purposes of this study, "At-risk for VAP" was defined as intubated >48 hours, with no significant abnormality on chest x-ray in the first 48 hours. "At-risk" patients were identified as VAP positive if they had a new persistent infiltrate on

CXR with temperature outside 36°-38°C, and leukocyte count outside 4,000-12,000. Chart review was performed in order to categorize patients by presenting complaints and determine VAP risk and incidence.

Results

539 patients were included in the ED intubation cohort, of which 244 presented with traumatic complaints. Within the group, 25% (60) were found to be at risk for VAP and 45% (27) of these developed VAP. 295 patients had medical presenting complaints. 16% (47) of medical patients were at risk for VAP and 17% (8) of these developed VAP. Trauma of unknown or less prevalent mechanism was categorized as Other Trauma, including TBI's and multi trauma. 28% of this group was at risk for VAP and 79% of these were VAP positive. 19% of gunshot wounds were at risk and 67% developed VAP. Neurology complaints presented with a low occurrence with 24% at risk and only 10% of these developing VAP. Cardiac, gastrointestinal and stabbing complaints had no incidences of VAP. Table 1 and 2, as well Figure 1 detail VAP risk and incidence by presenting complaints.

Table 1 Medical Patients VAP Risk and Incidence.

	Respiratory	Neurologic	Cardiac	Psychiatric	GI	Multisystem / other
Total Patients	59	87	28	57	9	55
% at risk for VAP	9 (15%)	21 (24%)	1 (4%)	6 (11%)	1 (11%)	9 (16%)
% at risk who developed VAP	2 (22%)	2 (10%)	0 (0%)	1 (17%)	0 (0%)	3 (33%)

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Table 2 Trauma Patients VAP Risk and Incidence.

	MVA	Falls	GSW	Stabbing	Other Trauma
Total Patients	119	30	31	14	50
% at risk for VAP	31 (26%)	8 (27%)	6 (19%)	1 (7%)	14 (28%)
% at risk who developed VAP	9 (29%)	3 (38%)	4 (67%)	0 (0%)	11 (79%)

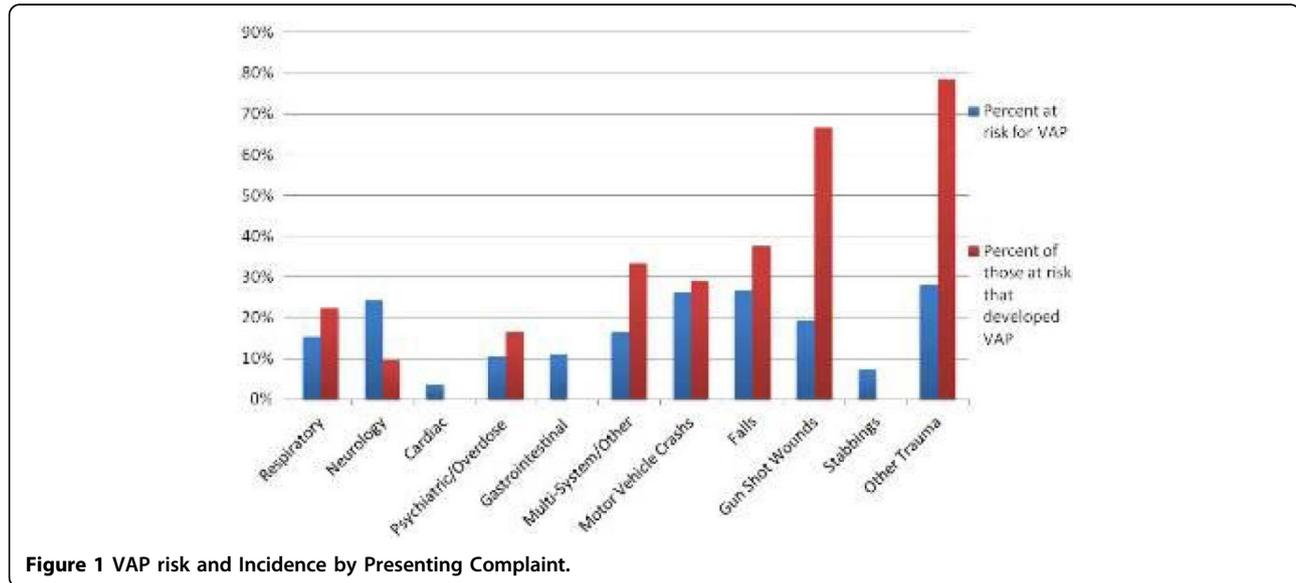


Figure 1 VAP risk and Incidence by Presenting Complaint.

Conclusions

Patients that arrived to the ED after a traumatic injury were at higher risk for VAP and developed VAP more frequently than those who presented with medical complaints. Future study, including a larger sample, is needed to continue to characterize VAP risk as related to presenting complaint and to determine interventions to reduce this risk.

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