

May 22nd, 4:30 PM - 6:00 PM

Impact of medical and neurological ICU complications on moderate-severe traumatic brain injury (TBI)

Susanne Muehlschlegel

University of Massachusetts Medical School, Susanne.Muehlschlegel@umassmemorial.org

Raphael A. Carandang

University of Massachusetts Medical School, raphael.carandang@umassmemorial.org

Cynthia Ouillette

University of Massachusetts Medical School, cynthia.ouillette@umassmed.edu

See next page for additional authors

Follow this and additional works at: http://escholarship.umassmed.edu/cts_retreat

 Part of the [Epidemiology Commons](#), [Health Services Research Commons](#), [Nervous System Diseases Commons](#), [Neurology Commons](#), [Surgery Commons](#), and the [Trauma Commons](#)

Susanne Muehlschlegel, Raphael A. Carandang, Cynthia Ouillette, Wiley R. Hall, Frederick A. Anderson Jr., and Robert J. Goldberg, "Impact of medical and neurological ICU complications on moderate-severe traumatic brain injury (TBI)" (May 22, 2012). *UMass Center for Clinical and Translational Science Research Retreat*. Paper 48.
http://escholarship.umassmed.edu/cts_retreat/2012/posters/48

This material is brought to you by eScholarship@UMMS. It has been accepted for inclusion in UMass Center for Clinical and Translational Science Research Retreat by an authorized administrator of eScholarship@UMMS. For more information, please contact Lisa.Palmer@umassmed.edu.

Presenter Information

Susanne Muehlschlegel, Raphael A. Carandang, Cynthia Ouillette, Wiley R. Hall, Frederick A. Anderson Jr., and Robert J. Goldberg

Creative Commons License

This work is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 License](https://creativecommons.org/licenses/by-nc-sa/3.0/).

IMPACT OF MEDICAL AND NEUROLOGICAL ICU COMPLICATIONS ON MODERATE-SEVERE TRAUMATIC BRAIN INJURY (TBI)

Susanne Muehlschlegel, MD, MPH^{1,2,3}; Raphael Carandang, MD^{1,3}; Cynthia Ouillette, RN¹; Wiley Hall, MD^{1,3}; Fred Anderson, PhD^{3,4}; Robert Goldberg, PhD⁵

Departments of ¹Neurology (Div. Neurocritical Care), ²Anesthesia/Critical Care and ³Surgery; ⁴Center for Outcomes Research; ⁵Department of Quantitative Health Sciences (Div. Epidemiology of Chronic Diseases), University of Massachusetts Medical School, Worcester, MA

Contact information:

Susanne Muehlschlegel, MD, MPH

Email: susanne.muehlschlegel@umassmemorial.org

Phone: 508-856-4684

Abstract:

Certain admission characteristics are known predictors of adverse outcomes in patients with moderate-severe TBI, but explain only 1/3 of outcome variability. Intensive care unit (ICU) complications occur frequently in this population, but their impact on patient outcomes remains poorly defined. In a prospective observational cohort study of 170 consecutive moderate-severe TBI patients admitted to Level I trauma center (UMASS) over the period 11/2009–2/2012, we examined the association of ICU complications and 3-month outcome (Glasgow Outcome Scale [GOS]). The mean age was 51 years, 72% were men, and the median GCS and injury severity scores were 4 and 29, respectively. Using multiple logistic regression analysis, hypotension requiring vasopressors (HRV) was the strongest predictor of poor outcome (GOS 1-3 [OR 2.8; 95% CI 1-7.5]) among medical complications. After combining medical with neurological ICU complications, brain herniation (OR 5.8; 95% CI 1.1-30.2) and intracranial rebleeding (OR 2.9; 95% CI 1-8.4) were the strongest predictors of poor outcome, while HRV approached significance (OR 2.4; 95% CI 0.9-6.4). We identified important potentially modifiable predictors of adverse outcomes after moderate-severe TBI. Confirmation of our findings in a larger cohort is warranted.