Pneumonia in traumatic brain injury

- Association between traumatic brain injury and risk of developing infections in the central nervous system and periphery
- Challenges in Pulmonary Management after Traumatic Brain and Spinal Cord Injury
- Sex- and age-specific differences in product-related traumatic brain injury morbidity in the United States, 2004-2023
- Predictive factors and prevalence of acute symptomatic seizures among patients with acute traumatic brain injuries
- Admission braden scale is an effective marker for predicting pneumonia in critically ill patients with traumatic brain injury
- Granulocyte-macrophage colony-stimulating factor reduces lung bacterial load following traumatic brain injury and hemorrhage polytrauma in a juvenile rat model
- Decoding mechanisms and protein markers in lung-brain axis
- Oxygen therapy in the intensive care unit

The incidence of pneumonia in ICU patients with TBI is very high, seriously affecting the prognosis. A study aimed to construct a predictive model for pneumonia in ICU patients with TBI and provide help for the prevention of TBI-related pneumonia. Clinical data of ICU patients with TBI were collected from the Medical Information Mart for Intensive Care (MIMIC)-IV database and hospital data. Variables were screened by lasso and multivariate logistic regression to construct a predictive nomogram model, verified in internal validation cohort and external validation cohort by receiver operator characteristic (ROC) curve, calibration curve and decision curve analysis (DCA).A total of 1850 ICU patients with TBI were enrolled in the study from the MIMIC-IV database, including 1298 in the training cohort and 552 in internal validation cohort. The external validation cohort included 240 ICU patients with TBI from hospital data. Nine variables were selected from the training cohort by lasso regression and multivariate logistic regression, and a pneumonia prediction nomogram was constructed. This nomogram has a high discrimination in training, internal validation and external validation cohorts (AUC = 0.857, 0.877, 0.836). The calibration curve and DCA showed that this nomogram had a high calibration and better clinical decision-making efficiency.The nomogram showed excellent discrimination and clinical utility to predict pneumonia, and could identify pneumonia high-risk patients early, thus providing precision medicine strategies for ICU patients with TBI [1)]

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Geng X, Wu H, Liu C, Qi L, Ballah AK, Che W, Wu S, Fu T, Li N, Wei X, Cheng R, Pang Z, Ji H, Wang Y, Wang X. Construction and validation of a predictive model of pneumonia for ICU patients with traumatic brain injury (TBI). Neurosurg Rev. 2023 Nov 21;46(1):308. doi: 10.1007/s10143-023-02208-9. PMID: 37985473.