



The 65th ASH Annual Meeting Abstracts

POSTER ABSTRACTS

311. DISORDERS OF PLATELET NUMBER OR FUNCTION: CLINICAL AND EPIDEMIOLOGICAL

Evaluation of ISTH Severe Bleeding Criteria and Development of a Mortality Prognosis Model for Hospitalized Immune Thrombocytopenia Patients: A Multicenter, Retrospective and Prospective Cohort StudyZhuo-Yu An¹, Haixia Fu, MD¹, Yun He¹, Xiaolu Zhu, MD², Jin Wu³, Qiu-Sha Huang⁴, Kaiyan Liu⁵, Xiaohui Zhang, MD⁶¹Peking University People's Hospital, Peking University Institute of Hematology, Beijing, China²Peking University Institute of Hematology, Peking University People's Hospital, Peking University Institute of Hematology, National Clinical Research Center for Hematologic Disease, Beijing Key Laboratory of Hematopoietic Stem Cell Transplantation, Beijing, China³Peking University People's Hospital, Beijing, China⁴Peking University People's Hospital, Peking University Institute of Hematology, Beijing, CHN⁵Peking University People's Hospital, Beijing, China, Beijing, CHN⁶Peking University People's Hospital, Peking University Institute of Hematology, Beijing, China., Beijing, China

Introduction: Immune thrombocytopenia (ITP) is an autoimmune disorder characterized by the immune system's erroneous destruction of platelets, which play a crucial role in blood clot formation. This condition precipitates a decreased platelet count and consequently heightens the risk of bleeding events, ranging from mild petechiae to severe, potentially fatal occurrences such as intracranial hemorrhage. Therefore, accurate anticipation and management of these severe bleeding risks form an integral facet of clinical care for ITP patients. The International Society on Thrombosis and Hemostasis (ISTH) has instituted criteria designed to classify and forecast severe bleeding in patients with thrombotic disorders. Despite their widespread use in diverse clinical scenarios, the validity and efficacy of these criteria for ITP patients remain underexplored. Furthermore, disparities in the application and interpretation of these criteria among practitioners underscore the necessity for a comprehensive evaluation within the ITP context. Consequently, our study is poised to fill these crucial gaps. We intend to evaluate the performance and applicability of the ISTH severe bleeding criteria specifically within the ITP patient population. Concurrently, we aspire to develop and validate a robust, reliable mortality prediction model for this unique group of hospitalized patients.

Methods: This study was a multicenter, retrospective cohort investigation conducted across 20 medical centers nationwide. A total of 1487 adult patients diagnosed with immune thrombocytopenia were enrolled. The study period spanned from Jan 2020 to Jan 2023, ensuring a comprehensive assessment of patient outcomes. To further evaluate the joint impact of multiple prognostic factors, a multivariate Cox regression model was constructed. Prospective observational cohorts were subsequently established with the objective of assessing the real-world performance of the mortality prognosis model.

Results: In our study, out of the 1487 enrolled adult patients with immune thrombocytopenia (ITP), 420 patients (28.24%) experienced bleeding events. The incidence of major bleeding types among these patients was assessed based on the critical bleeding diagnostic criteria. Intracranial bleeding was found to be the most common type, occurring in 229 patients (54.46%). This was followed by respiratory compromise in 87 patients (20.66%) and hemodynamic instability bleeding in 76 patients (18.08%). Intramuscular bleeding was the least common, observed in only 3 patients (0.70%). Furthermore, we evaluated the efficacy of the ISTH severe bleeding criteria in predicting mortality among ITP patients. Our analysis unveiled a significant association between meeting the ISTH severe bleeding criteria and increased mortality rates. Patients who met the criteria demonstrated a higher incidence of death compared to those who did not meet the criteria. Additionally, we developed a mortality prognosis model for hospitalized ITP patients, incorporating various clinical and laboratory parameters. The model considered the presence of intracranial bleeding, admission platelet count, cardiovascular disease, diabetes mellitus, and admission creatinine levels as predictive factors. The mortality prognosis model demonstrated strong predictive power, with an area under the receiver operating characteristic curve of 0.82. This indicates its ability to distinguish between patients at high and low risk of mortality. Kaplan–Meier survival analyses further confirmed significant survival differences between patients who met the ISTH severe bleeding criteria and those who did not.

Conclusions: Our study reaffirms the substantial relevance of ISTH severe bleeding criteria in assessing bleeding profiles and prognosis among hospitalized ITP patients. The developed mortality prognosis model demonstrates excellent predictive

capabilities for mortality in this patient population and is currently undergoing validation in a prospective cohort. These findings emphasize the importance of individualized management strategies to optimize outcomes in ITP patients. Further research and validation are warranted to refine and validate the mortality prognosis model for broader clinical application.

Disclosures No relevant conflicts of interest to declare.

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