Retrospective Analysis of Clinical Features and Identification of Prognostic Risk Factors for Neuroblastoma

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Purpose

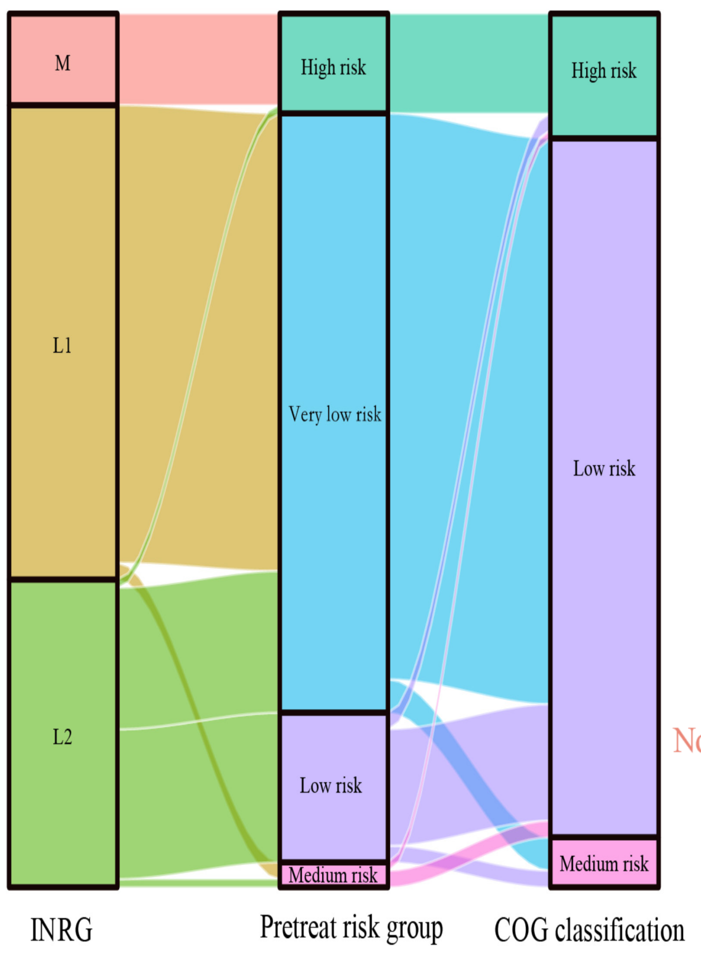
To systematically review the cases of single-center NB (neuroblastoma) in recent years, analyze the high-risk factors of NB, summarize the diagnosis and treatment experience, and find potential prognostic predictors.

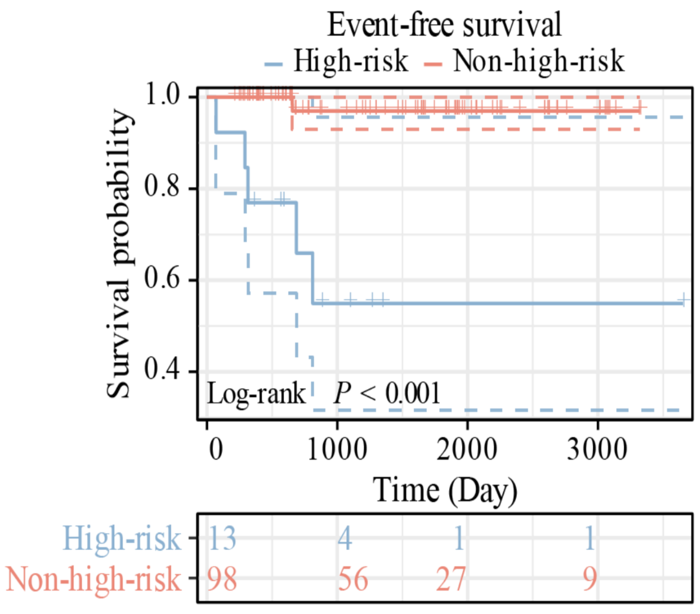
Methods

The clinical data of children diagnosed with NB in our center from January 2015 to June 2024 were retrospectively collected. According to the pretreatment risk group, the children were divided into high-risk and non-high-risk groups, and the comparison between groups was performed to determine the high-risk factors of NB.

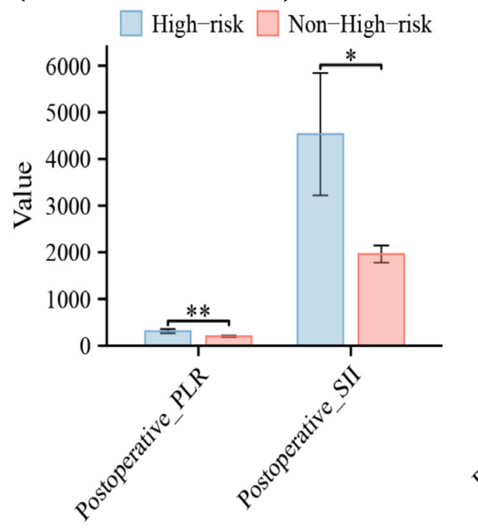
Results

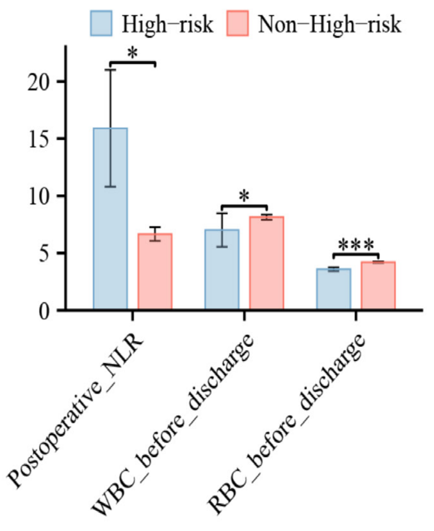
A total of 111 NB children were enrolled. The event-free survival rate was 61.54% (8/13) in high-risk group and 97.96% (96/98) in non-high-risk group.

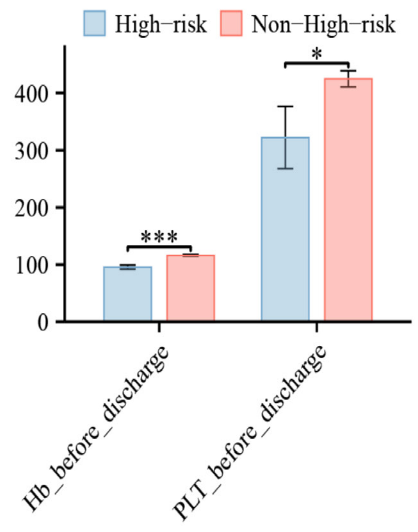




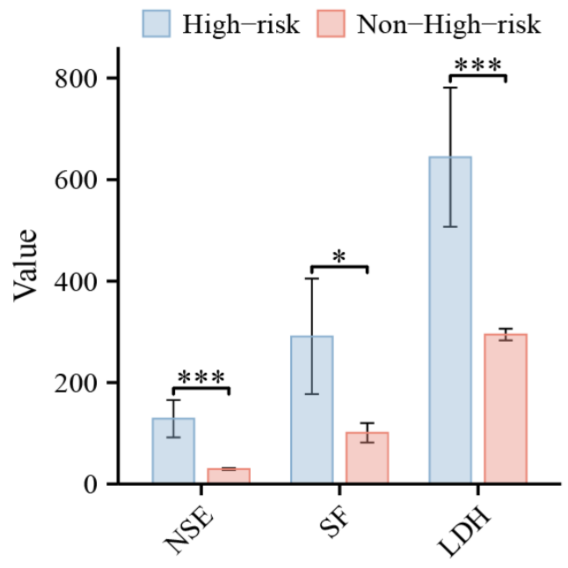
Conversely, levels of [RBC (red blood cell count) (4.13 (3.51, 4.37) vs. 4.43 (4.22, 4.72) *10^{12}/L) and Hb (hemoglobin) (106.00 (97.00, 109.00) vs. 123.00 (115.00, 130.00) g/L)] at admission and [RBC (3.59 ± 0.56 vs. 4.21 ± 0.50 *10^{12}/L) and Hb (95.50 ± 13.26 vs. 116.17 ± 14.29 g/L)] at discharge were significantly lower in the high-risk group ($P < 0.05$).

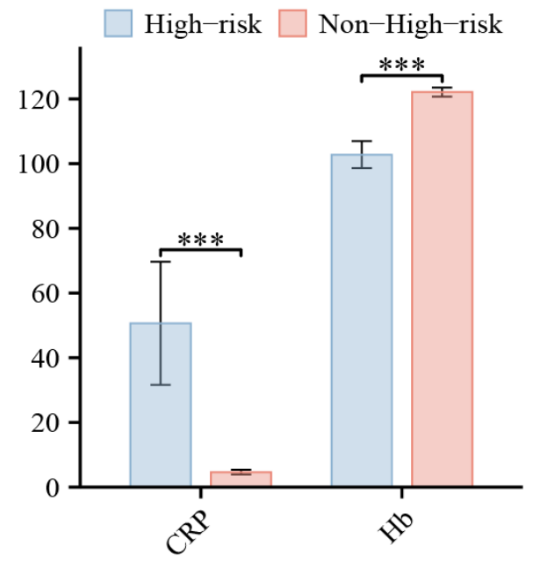


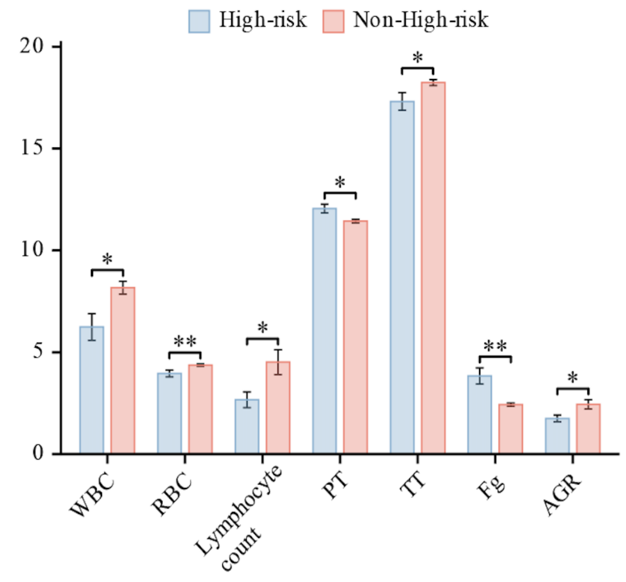


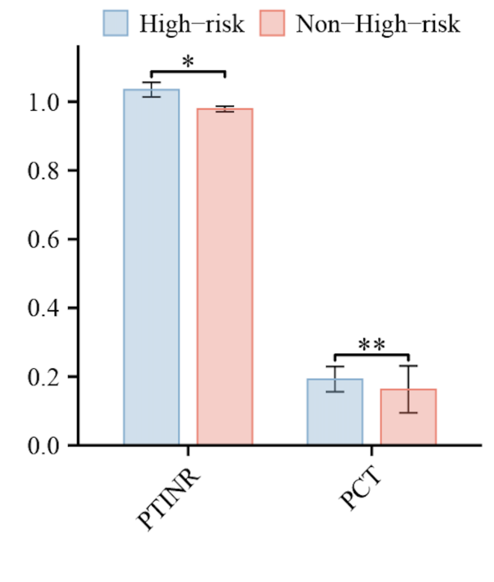


Compared to the non-high-risk group, levels of [NSE (neuron-specific enolase) (94.80 (39.01, 152.35) vs. 25.97 (18.51, 37.65) ng/mL), SF (serum ferritin) (150.65 (117.08, 424.30) vs. 71.57 (40.20, 111.85) ng/L), LDH (lactate dehydrogenase) (485.00 (357.00, 650.00) vs. 261.50 (226.00, 310.00) U/L)] at admission and postoperative first [neutrophil-lymphocyte ratio (8.05 (5.51, 17.25), 5.55 (2.65, 7.69)), platelet-to-lymphocyte ratio (272.95 (187.79, 467.87) vs. 167.78 (122.33, 232.75)), systemic immune-inflammation index (2482.90 (1733.00, 5406.10) vs. 1525.00 (906.44, 2240.20))] were significantly elevated in the high-risk group ($P < 0.05$).









Conclusion

Patients in the high-risk group have significantly poorer prognoses. NSE, SF, LDH, inflammatory markers, RBC, and Hb may be helpful for the prognosis evaluation of NB in the future, so their real-time monitoring in clinical practice is very important.