

In Reply to: A Risk Score for Predicting the Incidence of Hemorrhage in Critically Ill Neonates: Development and Validation Study

Stefano Ghirardello¹  Genny Raffaelli^{1,2} Fabio Mosca^{1,2}

¹ NICU, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy

² Department of Clinical Sciences and Community Health, University of Milan, Milan, Italy

Address for correspondence Stefano Ghirardello, MD, Neonatal Intensive Care Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan 20122, Italy
(e-mail: stefano.ghirardello@mangiagalli.it).

Thromb Haemost 2021;121:694–696.

We read with interest the study by Sokou et al¹ and would like to make comments. The authors proposed a risk score for predicting hemorrhage of any grade in critically ill neonates within 24 hours of rotational thromboelastometry testing, using the Neonatal Bleeding Assessment Tool (NeoBAT) score. The analysis included 167 newborns with perinatal hypoxia (16 with hypoxic-ischemic encephalopathy and 151 with fetal distress), 121 neonates with sepsis, and 46 with suspected sepsis. The study was performed between 2014 and 2019, and all consecutive patients were evaluated for enrolment. The incidence of intraventricular hemorrhage (IVH) was approximately 29% across the entire population with a gestational age between 32 and 39 weeks. More than one-third of the cohort experienced at least one bleeding episode.

The first observation pertains to the characteristics of the study population.

The same authors recently published another study focusing on thromboelastometry variables in neonates with perinatal hypoxia.² The authors provided results from 164 newborns with perinatal hypoxia (16 with hypoxic-ischemic encephalopathy and 148 with fetal distress), enrolled between 2016 and 2019. The mean gestational age of the 53 preterm and 111 term newborns was 33.6 and 38.7 weeks, respectively. In this population, no cases of IVH were recorded and the authors did not apply the NeoBAT score as a tool to predict bleeding.

Interestingly, in the two different studies,^{1,2} the authors enrolled approximately the same number of patients with perinatal hypoxia, but they applied the NeoBAT score for bleeding evaluation only in the more recently published study. The second observation relates to the abnormal (and unexplained) incidence of bleeding events observed, particularly IVH. Large observational studies have determined the

incidence of IVH to be approximately 1% in neonates greater than 30 weeks' gestational age.^{3–5}

As the authors did not observe any intracranial hemorrhage in their previous study on newborns with perinatal hypoxia,² we can assume that most IVH observed in the present study occurred in patients with sepsis, which would equate to more than 90 episodes for 167 newborns. If this is indeed true, the percentage of IVH exceeds 50% in this latter population, which is extraordinarily high for the population included in the most recent study.¹

Third, the authors did not provide clinical data (i.e., Apgar score, need for mechanical ventilation and inotropes, SNAPPE score, mortality) to better characterize the severity of illness for the patients enrolled that could justify such a high incidence of IVH observed in their cohort.

For these reasons, we consider the risk score for the prediction of bleeding in critically ill neonates proposed by the authors not applicable to the preterm and term newborns admitted to neonatal intensive care units from high-income countries.

Conflict of Interest

None declared.

References

- 1 Sokou R, Piovani D, Konstantinidi A, et al. A risk score for predicting the incidence of hemorrhage in critically ill neonates: development and validation study. *Thromb Haemost* 2020. Doi: 10.1055/s-0040-1715832
- 2 Konstantinidi A, Sokou R, Tsantes AG, et al. Thromboelastometry variables in neonates with perinatal hypoxia. *Semin Thromb Hemost* 2020;46(04):428–434
- 3 Harding D, Kuschel C, Evans N. Should preterm infants born after 29 weeks' gestation be screened for intraventricular haemorrhage? *J Paediatr Child Health* 1998;34(01):57–59

received

October 5, 2020

accepted after revision

October 19, 2020

published online

November 19, 2020

© 2020, Thieme. All rights reserved.

Georg Thieme Verlag KG,
Rüdigerstraße 14,
70469 Stuttgart, Germany

DOI <https://doi.org/>

10.1055/s-0040-1721316.

ISSN 0340-6245.

- 4 Ballardini E, Tarocco A, Baldan A, Antoniazzi E, Garani G, Borgna-Pignatti C. Universal cranial ultrasound screening in preterm infants with gestational age 33–36 weeks. A retrospective analysis of 724 newborns. *Pediatr Neurol* 2014;51(06):790–794
- 5 Bath V, Karam M, Saslow J, et al. Utility of performing routine head ultrasound in preterm infants with gestational age 30–34 weeks. *J Matern Fetal Neonatal Med* 2012;25:116–119

