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## New Study Evaluates the Performance of Masimo SpHb® in Monitoring Pediatric Trauma Patients



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Masimo announced today the findings of a recently published study in which researchers at Michigan State University evaluated the performance of noninvasive hemodynamic monitoring (NIHM) using Masimo noninvasive and continuous hemoglobin (SpHb®), as compared to invasive laboratory hemoglobin (LabHb) monitoring, in clinically stable pediatric trauma patients with solid organ injury.

In the study, Dr. Welker and colleagues utilized data from 21 patients under 18 years of age who had experienced blunt trauma, with a mean injury severity score of 16.6. Their hemodynamic status was assessed using physical examination and vital signs in conjunction with periodic LabHb monitoring per normal institutional pediatric trauma guidelines. In addition, NIHM using Masimo SpHb was measured continuously using a Masimo Radical-7® Pulse CO-Oximeter®, and SpHb values were recorded at multiple times to correspond with LabHb blood draws.

Using Bland-Altman analysis, the researchers calculated an average bias of 0.80 g/dL between SpHb and LabHb, with a 95% confidence interval of +3.94 g/dL to -2.33 g/dL. They noted that, "Measurement trends were highly correlated in patients with stable hemoglobin levels and those requiring blood transfusion."

The investigators concluded that, "NIHM demonstrated clinically acceptable accuracy when following hemoglobin trends in the defined pediatric trend patient population. Slight variances between NIHM and LabHb values were occasionally noted, but did not affect clinical management. Continuous NIHM represents a potentially valuable adjunct to traditional laboratory hemoglobin monitoring."

SpHb is not intended to replace laboratory blood testing. Clinical decisions regarding red blood cell transfusions should be based on the clinician's judgment considering among other factors: patient condition, continuous SpHb monitoring, and laboratory diagnostic tests using blood samples.

Reference:

Welker E, Novak J, Jelsma L, Koehler T, Davis A, DeCou J, Durkin E. (2018) Continuous hemoglobin monitoring in pediatric trauma patients with solid organ injury. *J Pediatr Surg*. <https://doi.org/10.1016/j.jpedsurg.2017.12.015>.

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