

Response to Letter to the Editor by Dr. Witsch et al.

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We thank Dr. Witsch et al. for their kind interest in our recent article on “Risk Stratification for the In-Hospital mortality in Subarachnoid Hemorrhage: The HAIR score”. We acknowledge that between score 6 and 7, mortality was essentially the same (in our data, 82.1 vs. 83.3 %), and Dr. Witsch reports similar numbers, albeit with a slightly decreased mortality (79.7 vs. 78.4 %). This small reversal is likely due to low power as the number of patients in the moribund subgroups (score 6, 7, 8) were likely relatively small compared to the overall cohort. In our data, there were only 6 patients with a score of 7 and no patients with a score of 8. Recognizing this, we chose to validate the HAIR score in our second cohort using a simplified risk

stratification with low (score 0–2), moderate (score 3–5), and high (score 6–8), and clinically, it may be more meaningful to categorize patients this way. Of interest, Dr. Witsch’s findings included patients with the maximum HAIR score of 8, which was associated with 100 % mortality. Inclusion of patients in the highest subgroup is important and appears to be consistent with the HAIR score prediction. Dr. Witsch’s findings of an area under the ROC-curve of 0.9 indicates robust performance in discrimination overall, and we are pleased that the HAIR score has been externally validated in a separate cohort of over 1,600 subarachnoid hemorrhage patients.

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