

WHY DO PATIENTS WITH NON-TRAUMATIC SUBARACHNOID HEMORRHAGE DIE?

J. Bruggen, G. Vermeiren, S. Thiessen, M. Vander Laenen, T. Fivez, W. Boer, K. Engelen, C. De Deyne, X. Willaert

Department of Critical Care Medicine, ZOL Genk, Belgium

Background

Withdrawal of life sustaining therapy is believed to be the leading cause for mortality in non-traumatic subarachnoid hemorrhage (SAH).¹ The exact criteria intensive care physicians use in the process of withdrawal of care decision making have not yet been described.

Methods

In this single centre retrospective study, we analyzed all patients that were admitted to the ICU for SAH between December 1st 2018 until September 1st 2023. Patient records were queried for baseline characteristics (age, sex, APACHE 4 predicted mortality, Charlson Comorbidity Index or CCI). In the patient group that died in the intensive care unit, a manual chart review was performed to obtain extended baseline characteristics (World Federation of Neurosurgical Societies or WFNS score, Modified Fisher or M-Fisher score and SAFIRE score) and cause of death. In case of withdrawal of care (WOC) the process of decision making was analyzed.

Results

We identified a total of 265 patients. Patient baseline and extended characteristics are shown in figure 1. 11% of patients with SAH died in ICU. APACHE 4, WFNS, M-Fisher and SAFIRE score were higher in this group, all indicating more severe bleeding. The major cause of death was WOC (57%) followed by brain death (43%). WOC was installed after a median time of 7 (IQR 1,1-16) days in ICU. In 88% of WOC cases, withdrawal was a multidisciplinary (based on the opinion of a neurologist, neurosurgeon, interventional radiologist and intensive care physician) and multimodal (based on CT, MRI and neurophysiology findings) decision. Main imaging findings were severe bleeding or brain ischemia that was deemed to result in severe disability. In 2 patients (12%) the decision for WOC was made by the intensive care physician alone. Biomarkers such as neuron specific enolase (NSE) were not used.

Conclusion

WOC is the main reason for mortality after SAH. The WOC decision is typically multidisciplinary and multimodal.

References

1. Hoogmoed J et al. Why do patients with poor-grade subarachnoid hemorrhage die? World Neurosurgery. Vol 131 Nov 2019, e508-513.

