

## REFERENCE

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Ma L, Hu X, Song L, et al. The third Intensive Care Bundle with Blood Pressure Reduction in Acute Cerebral Haemorrhage Trial (INTERACT3): an international, stepped wedge cluster randomised controlled trial. *Lancet*. Published online May 24, 2023:S0140-6736(23)00806-1.

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## SUMMARY

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The implementation of a care bundle protocol incorporating the early control of elevated blood pressure, blood glucose, and body temperature and correction of abnormal coagulation resulted in an improved functional outcome at 6 months.

## BACKGROUND

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- Intracerebral hemorrhage is the most serious and least treatable form of stroke
- The current focus on treatment involves normalization of physiologic abnormalities, particularly intensive blood pressure lowering and reversal of coagulopathies

## STUDY OBJECTIVE

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- Establish whether implementing a goal-directed care bundle incorporating protocols for early intensive blood pressure lowering and management algorithms for hyperglycemia, pyrexia, and abnormal anticoagulation could improve outcomes for acute, spontaneous, intracerebral hemorrhage

## STUDY DESIGN

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- International, multicenter, prospective, stepped wedge, cluster randomized, blinded, outcome assessed, controlled trial undertaken in primarily low- and middle-income countries

## STUDY INTERVENTION & COMPARISON

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- **Care bundle targeting normalization of blood pressure (SBP  $\leq$ 140), blood glucose (110-140 or 140-180 if diabetic), body temperature ( $<$ 37.5°C), and reversal of anticoagulation (INR  $<$ 1.5) vs usual care**

## RESULTS

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- **Primary Outcome**
  - Poor functional outcome less likely in care bundle group (OR 0.86, CI 0.76-0.87,  $p=0.015$ )
- **Secondary Outcomes**
  - Fewer serious adverse events in care bundle group (16% v 20.1%,  $p=0.0098$ )

## ADDITIONAL READINGS

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- Middleton S, McElduff P, Ward J, et al. Implementation of evidence-based treatment protocols to manage fever, hyperglycaemia, and swallowing dysfunction in acute stroke (QASC): a cluster randomised controlled trial. *Lancet* 2011; 378: 1699–706.
- Parry-Jones AR, Sammut-Powell C, Paroutoglou K, et al. Intracerebral hemorrhage care bundle is associated with lower case fatality. *Ann Neurol* 2019; 86: 495–503.
- Song L, Wang X, Ouyang M, et al. Associations of an abnormal physiological score with outcomes in acute intracerebral hemorrhage: INTERACT2 study. *Stroke* 2021; 52: 722–25.