Improving outcomes for patients with a deadly form of brain bleed

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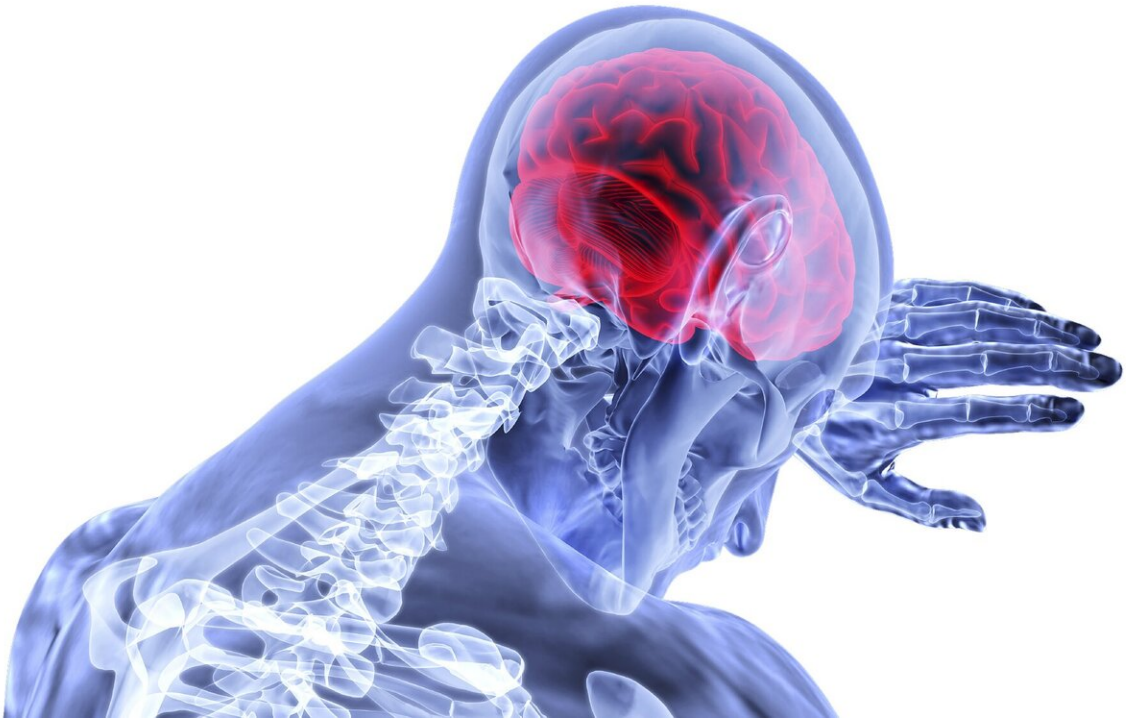

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A new study reveals that drainage of cerebrospinal fluid through the spine could help improve outcomes for patients with aneurysmal subarachnoid hemorrhage (aSAH).

The study, led by researchers from the Institute of Psychiatry,

Psychology & Neuroscience (IoPPN) at King's College London and King's College Hospital NHS Foundation Trust, reveals the positive effect of drainage of cerebrospinal fluid—fluid that fills the ventricles of the brain and surrounds the brain and spinal cord—in the aftermath of a brain bleed.

The results indicate that this treatment can reduce the chances of stroke and artery narrowing, which can cause oxygen deprivation in the brain. This can ultimately reduce the likelihood of death without raising the risk of complications such as infection and protracted length of hospital stay. These findings are published in *World Neurosurgery*.

Research on this topic has been focusing on finding new treatments for delayed insufficient blood supply to the brain following aSAH, a deadly form of brain bleeding. It is believed that the amount of bleed and deposition of its metabolic blood products, which are irritants around the brain, confer the risks of delayed blood flow to the brain and artery narrowing, swelling and subsequent death of brain tissues.

Drainage of cerebrospinal fluid, which can counter this platelet activity, may help clear away these irritants, thereby limiting the narrowing of blood vessels in the brain. Until now, studies on this have been inconclusive.

"Our research shows that drainage of cerebrospinal fluid—fluid that fills the ventricles of the brain and surrounds the brain and spinal cord—through the lumbar spine, can improve outcomes for patients with aneurysmal subarachnoid hemorrhage, a deadly form of brain bleed. This form of drainage improves blood flow to the brain and enhances the chances of survival without an increased risk of complications, and is potentially a treatment modality for aSAH, which has few effective treatments.

"While further gold-standard randomized controlled studies are needed to validate our preliminary findings, the study provides useful insights that may help in designing future research," says Dr. Keng Siang Lee, honorary lecturer at King's IoPPN.

More information: Keng Siang Lee et al, Effectiveness of Cerebrospinal Fluid Lumbar Drainage Among Patients with Aneurysmal Subarachnoid Hemorrhage: An Updated Systematic Review and Meta-Analysis, *World Neurosurgery* (2024). DOI: 10.1016/j.wneu.2024.01.062

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