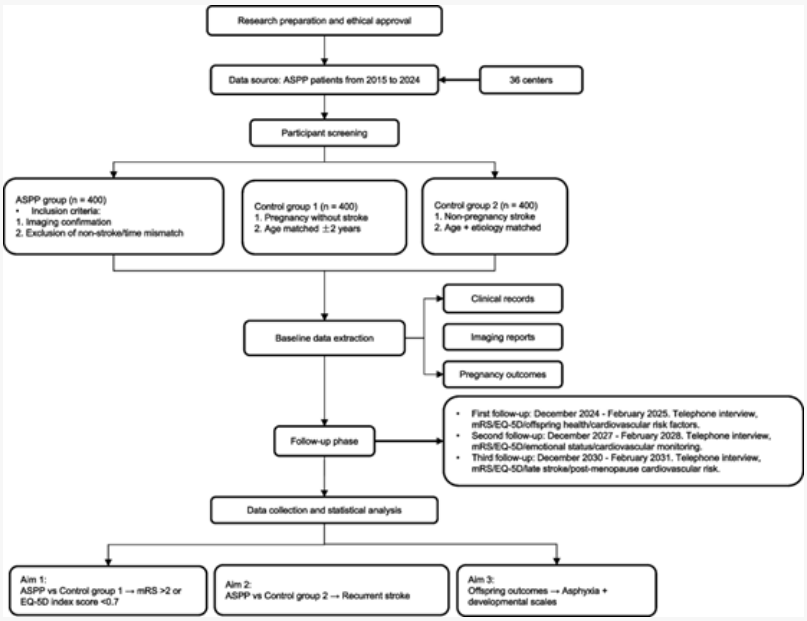
Chinese Neurosurgical Journal Unveils Study on Stroke Risks and Prognosis in Pregnant and Postpartum Women

Researchers utilize matched cohorts to comparatively assess potential risk factors associated with brain stroke during pregnancy

BEIJING, BEIJING, CHINA, August 6, 2025 /EINPresswire.com/ -- Acute stroke occurs when the flow of blood to the brain is disrupted, leading to damage in brain cells. Although it is a medical emergency in any context, stroke during pregnancy and the puerperium—the period shortly after childbirth—can be particularly serious. Recent findings suggest that the incidence of acute stroke in pregnancy and puerperium (ASPP) is on the rise. In-hospital mortality rates for these cases are reported to be around 4.2%, highlighting the need for further investigation into the underlying risk factors and outcomes.



Previous studies relied on International Classification of Diseases codes to assess the incidence rate and risk factors for acute stroke in pregnancy and puerperium (ASPP). The use of disability-related questionnaires and clinical APGAR scores along with

Given the elevated risks and clinical complexities of treating pregnant women with stroke, there is a growing recognition of the need for more in-depth studies on ASPP. Against this backdrop, a team of researchers from China has conducted a retrospective, nationwide, multicenter study to advance current knowledge and understanding about ASPP. The team was led by Dr. Jizong Zhao from the Department of Neurosurgery, Beijing Tiantan Hospital, Capital Medical University, China comparatively analysed patients with ASPP and non-ASPP participants between January 2015 to November 2024. Laying the groundwork for their research, the research team has developed a comprehensive study protocol. Their study protocol was recently published online in the Chinese Neurosurgical Journal on June 04, 2025.

The study is designed to evaluate ASPP cases between January 2015 and November 2024, involving 36 tertiary hospitals across 22 provinces in China. These hospitals were selected based on their experience with a higher number of ASPP cases and their ability to provide certified, standardized stroke care. Sharing insights on the need for the present study, Dr. Zhao says, "Previous studies have predominantly utilized large-scale national healthcare data and the International Classification of Diseases (ICD) parameters to assess the incidence rate and risk factors associated with ASPP. Although these population-based studies benefit from larger sample sizes, they often lack detailed data, which prevents the comprehensive exploration of risk factors and the identification of prognostic predictors".

In their study, the researchers aimed to address three critical aspects related to ASPP: (1) to identify risk factors of ASPP and predictors of its prognosis, (2) to evaluate the risk of recurrent strokes, particularly during subsequent pregnancies in ASPP patients, and (3) to assess the prognosis of offspring of ASPP patients. Furthermore, to enable the present research to be classified as a national-level study, they included 36 tertiary hospitals from 22 provinces of China which had higher incidence rate of ASPP cases along with certification to provide standardized stroke care.

The study involved the use of two matched control groups for comparison: 400 pregnant or puerperal participants with no history of stroke and 400 non-pregnant participants who recently experienced a stroke. These groups were matched based on factors such as age and stroke subtype, helping researchers isolate variables that may be specific to ASPP. For each participant, data was collected from electronic medical records (EMRs), covering a range of variables including demographics, medical and medication history, as well as pregnancy-related factors. Follow-up assessments are conducted via telephone interviews, with a follow-up schedule that includes up to three rounds. The final round is planned between December 2030 and February 2031.

The outcomes for women will be measured using standard tools such as the modified Rankin Scale (mRS) and EQ-5D, which assess physical functioning and quality of life. For newborns, the APGAR score (evaluating appearance, pulse, grimace, activity, and respiration) will be used at birth, while long-term development will be assessed using the Ages and Stages Questionnaire (3rd edition).

"To begin with, this study does not rely on the ICD-based coding and can thus avoid coding errors, such as misclassification and underreporting. Next, it is capable of collecting long-term recovery outcomes for patients with ASPP. Furthermore, it will be the first study to explore whether ASPP affects the development of offspring," states Dr. Zhao.

One of the strengths of this study is its ability to track both short-term and long-term outcomes in a diverse patient population. By drawing from hospitals across various provinces and carefully matching comparison groups, the researchers aim to ensure that their findings are representative and meaningful at the national level.

While the study is currently focused on building a comprehensive dataset and protocol, its ultimate aim is to inform future strategies for prevention, risk management, and clinical decision-making in ASPP cases. Importantly, by including a follow-up period that spans several years, the study may also shed light on long-term maternal health and the developmental outcomes of children affected by these high-risk pregnancies.

In summary, this multicenter research initiative marks an important step toward improving clinical understanding and patient care in the context of stroke during pregnancy. Its detailed approach and long-term scope offer an opportunity to fill key gaps in current knowledge and may contribute to the development of more tailored healthcare strategies for women at risk of ASPP.

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Reference

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About the University

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About Dr. Jizong Zhao from Capital Medical University

Dr. Jizong Zhao is Professor and Chairman of the Department of Neurosurgery at Beijing Tiantan Hospital, Capital Medical University, and also leads the National Clinical Research Center for Diseases of the Nervous System. An Academician of the Chinese Academy of Sciences, Dr Zhao is a member of the American Association of Neurological Surgeons (AANS), and serves on the Nominating Committee and Cerebrovascular Diseases & Therapy Committee of the World Federation of Neurosurgical Societies (WFNS). He is also on the Board of Directors of the Walter E. Dandy Neurosurgical Society. His research focuses on cerebrovascular disease and brain tumors.

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