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Letter to the Editor

The Pre-Hospital Delay Prior to Thrombolysis or Thrombectomy Must and can be Reduced

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Letter to the Editor

We read with interest the article by Dutta *et al.* regarding a cross-sectional study on the frequency and causes of pre-hospital delay in the arrival of acute stroke patients at the hospital ^[1]. Of 683 patients with ischemic or hemorrhagic stroke, 56.9% arrived at the hospital more than 4.5 hours after symptom onset ^[1]. Factors cited as causes for the delayed arrival included a distance of more than 15 km to the hospital, lack of knowledge regarding the "golden hour" (the critical time window) for stroke, symptom onset at night, being alone at the time of onset, "wake-up stroke," use of public transport, a family history of stroke, dizziness, and a prior visit to another treatment facility ^[1]. While the study is noteworthy, it raises certain questions.

A first point is that it is not immediately apparent why a distance of more than 15 km, symptom onset at night, a relevant family history, or dizziness should lead to a delayed arrival. Typically, a distance of 15 km can be covered in 10 to 15 minutes on a rural road; within a built-up area, it takes about 15 to 25 minutes. A family history of ischemic stroke would be expected to accelerate rather than delay transport to the hospital. Even if patients are alone and suffering from dizziness, they should be able to reach a mobile phone, as they generally carry their communication device with them around the clock. If patients experiencing dizziness are not alone, relatives or caregivers should call emergency services on their behalf.

A second point is that the inclusion of patients with hemorrhagic stroke in the analysis is difficult to justify ^[1]. Hemorrhagic stroke generally requires a completely different treatment approach than ischemic stroke; thrombolysis or thrombectomy is not an option in such cases. Thrombectomy may be performed for hemorrhagic stroke only in selected cases ^[2]. Selecting such patients requires distinguishing between primary and secondary hemorrhage. In cases of secondary hemorrhage associated with ischemic stroke—also known as hemorrhagic transformation—thrombectomy is feasible provided the hemorrhage is minor, asymptomatic, and petechial (i.e., the petechiae are confined to the infarcted brain tissue) ^[2]. Consequently, all other patients with hemorrhagic stroke should be excluded from the study.

A third point is that hospital arrival within 4.5 hours of stroke onset does not necessarily guarantee timely and appropriate treatment; numerous in-hospital factors can further delay the initiation of thrombolysis or thrombectomy and must be taken into account when evaluating the overall outcomes for patients with ischemic stroke ^[3]. How many of the patients who arrived within the 4.5-hour window actually underwent thrombolysis or thrombectomy? The success of these procedures depends heavily on the quality of clinical care. Was thrombolysis feasible at the 12 centers equipped with only a CT scanner?

A fourth point is that, in the case of a so-called "wake-up stroke," the time of onset cannot be reliably determined using cranial computed tomography (CCT) ^[4]. To determine the approximate onset of an ischemic stroke in cases of wake-up stroke, patients must undergo multimodal magnetic resonance imaging (MRI). Multimodal MRI allows for the precise identification of salvageable brain tissue, thereby making it possible to estimate whether the stroke occurred within a safe therapeutic time window. Since 12 of the participating centers were equipped only with CT scanners, patients with wake-up stroke were to be excluded from the analysis.

A fifth point is that it was not reported whether the 13 hospitals participating in the study were capable of performing perfusion CT or merely standard CT ^[1]. Knowledge of the technical equipment available at the participating facilities is crucial, as the correct diagnosis—and thus the treatment outcome—depends significantly on the quality of the diagnostic capabilities. While perfusion CT enables the determination of the stroke core and the penumbra, this is not possible with standard CT ^[5].

Declarations**Ethical Approval:** Not applicable.**Consent to Participation:** Not applicable.**Consent for Publication:** Not applicable.**Funding:** None received.**Availability of Data and Material:** All data are available from the corresponding author.**Completing Interests:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.**Author Contribution:** JF was responsible for the design and conception, discussed available data with coauthors, wrote the first draft, and gave final approval. xx: contributed to literature search, discussion, correction, and final approval.**Acknowledgements:** None.**Keywords:** Ischemic Stroke, Cerebral Bleeding, Thrombolysis, Thrombectomy, Prehospital Delay**References**

1. Dutta A, Sarkar A, Podder G, Santra B, Dutta D, Hazra S, *et al.* Factors associated with prehospital delay in stroke: A multicentre study from eastern India. *Indian J Med Res*, 2026. Doi: 10.25259/IJMR_285_2026
2. Beppu M, Kusuma Y, Yoshimura S, Lee JS, Yan B. Mechanical Thrombectomy in Patients with Acute Stroke Having Concurrent Intracranial Hemorrhage: Navigating a Clinical Dilemma. *J Stroke*, Jan 2026; 28(1):178-180. Doi: 10.5853/jos.2025.02236
3. Iwuzo E, Utim S, Okwori I, Bolade R, Anzaa M, Aroh E. Profile and determinants of acute stroke outcome: A prospective cohort study in a tertiary healthcare facility in Makurdi, North Central Nigeria. *Pan Afr Med J*, Dec 30, 2025; 52:189. Doi: 10.11604/pamj.2025.52.189.49928
4. BN, Raman R, Ernstrom K, Tafreshi G, Stemer A, Meyer BC, *et al.* Alberta Stroke Program Early CT Score (ASPECTS) in patients with wake-up stroke. *J Stroke Cerebrovasc Dis*, Nov-Dec 2010; 19(6):475-479.
5. Akkurt BH, Mannil M, Musigmann M. Diagnostic value of routine CT perfusion imaging for radiology residents. *Sci Rep*, Oct 23, 2024; 14(1):25093. Doi: 10.1038/s41598-024-76531-6. PMID: 39443662; PMCID: PMC11499635.0.1016/j.jstrokecerebrovasdis.2010.03.003