

Factors Influencing Delay in Treatment-Seeking Among Adults with Acute Ischemic Stroke: A Retrospective Case-Control Study at Selected Private Hospital, Coimbatore, Tamil Nadu

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Abstract

Background: Acute ischemic stroke (AIS) is a leading cause of death and long-term disability worldwide. Timely intervention, particularly thrombolysis within the 4.5-hour therapeutic window, can significantly improve outcomes. In India, however, pre-hospital delays frequently prevent patients from receiving time-sensitive treatment.

Objective: To examine demographic, clinical, cognitive, and social factors associated with delays in seeking treatment among adults diagnosed with AIS.

Methods: A retrospective case-control study was conducted among 105 AIS patients admitted to private hospital, Coimbatore. Patients were categorized into within-window (<4.5 hours; n = 39) and after-window (>4.5 hours; n = 66) groups. Data were collected using structured questionnaires, the Duke Social Support and Stress Scale (DUSOCS), and the NIH Stroke Scale (NIHSS). Statistical analysis included Chi-square tests and logistic regression; significance was set at $p \leq 0.05$.

Results: The mean time to hospital arrival was 7 hours 47 minutes (SD = 5 h 33 m), with 62.9% presenting after the 4.5-hour window. Delayed presentation was significantly associated with poor stroke knowledge ($p = 0.01$), low perceived seriousness of symptoms ($p < 0.001$), inadequate non-family support ($p < 0.001$), and coexisting hypertension and diabetes ($p = 0.005$). Patients presenting after the window had higher rates of moderate-to-severe strokes (NIHSS: 50%) compared to those presenting within the window (2.6%).

Conclusion: Delays in treatment were primarily attributable to inadequate symptom recognition, underestimation of severity, limited social support, and transport barriers. Public awareness initiatives, strengthened emergency medical services, and enhanced community support systems are essential to reducing pre-hospital delays in AIS care.

Keywords: Acute ischemic stroke, treatment delay, social support, symptom perception, India