
CONFERENCE ARTICLE**The Role Of Prehospital Care Algorithms In Reducing Time Delays In Acute Cerebrovascular Accident****T. Akhtamov, M.B. Urinov**Bukhara State Medical Institute named after Abu Ali ibn Sino, Uzbekistan

Abstract: In ischemic stroke, each minute of treatment delay is associated with the loss of approximately 1.9 million neurons [1], and shorter door-to-needle times are associated with lower in-hospital mortality and better outcomes [2]. The lack of standardized algorithms is one of the causes of time delays and low effectiveness of prehospital care, whereas their implementation can substantially shorten the time to reperfusion therapy [3, 4].

Aim of the study. To evaluate the impact of the developed algorithms for prehospital diagnosis and routing of stroke patients on the time intervals of medical care.

Materials and methods. A prospective study was conducted in 122 patients with acute cerebrovascular accident (ACVA), divided into a control group (n=60) and a main group (n=62). In the main group, the developed algorithms for prehospital diagnosis and routing were applied. The following were assessed: the interval from symptom onset to the emergency medical services (EMS) call, EMS team arrival time, transport time, and door-to-needle time in patients who received thrombolytic therapy. Differences were considered statistically significant at $p < 0.05$.

Results. Analysis of time intervals at the prehospital and early in-hospital stages showed that the implementation of the developed algorithms was accompanied by a statistically significant reduction in all key time indicators. The interval from symptom onset to the EMS call in the main group was 72.6 ± 24.1 min, significantly shorter than in the control group (94.2 ± 28.5 min; $p < 0.05$). This result may indicate improved patient awareness and earlier response. EMS team arrival time decreased from 18.4 ± 6.2 to 16.1 ± 5.4 min ($p < 0.05$), reflecting improved organization of the EMS service.

Transport time was also significantly reduced: 42.3 ± 10.1 min in the control group versus 34.8 ± 9.6 min in the main group ($p < 0.05$), owing to optimized routing and direct transfer of patients to specialized stroke centers. The most pronounced change was observed in door-to-needle time, which decreased from 78.6 ± 18.3 to 52.4 ± 14.7 min ($p < 0.001$); in the main group, the mean value remained within the 60-minute target recommended by international guidelines [5]. This reduction is clinically significant, as door-to-needle time directly affects the effectiveness of thrombolytic therapy and stroke outcomes [2].

Conclusion. The implementation of algorithms for prehospital diagnosis and routing substantially shortened the time intervals of medical care, creating the prerequisites for more effective treatment and better clinical outcomes in patients with ACVA.

References

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