



Availability Of Thrombolytic Therapy After Optimization Of The Prehospital Stage Of Stroke Care

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Intravenous thrombolytic therapy is one of the most effective treatments for ischemic stroke; however, its benefit declines rapidly as time from symptom onset increases, which restricts its use to a narrow therapeutic window [1]. For large-vessel occlusion, endovascular thrombectomy has also become a standard of care [2]. Algorithms for prehospital diagnosis and routing can reduce time delays and increase access to reperfusion therapy [3, 4], which is essential for improving clinical outcomes.

Aim of the study. To evaluate the impact of prehospital stage optimization on the rate of reperfusion (thrombolytic and endovascular) therapy in patients with acute cerebrovascular accident (ACVA).

Materials and methods

A prospective study was conducted in 122 patients with 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 rates of thrombolytic therapy and endovascular interventions were assessed. Data from the retrospective stage of the study (230 patients) were used for comparison. Differences were considered statistically significant at $p < 0.05$.

Results. The implementation of the developed algorithms was accompanied by a marked increase in the availability of reperfusion therapy. Notably, at the retrospective stage no patient received reperfusion therapy, indicating that these treatments were practically unavailable in the existing system of care. At the prospective stage, thrombolytic therapy was administered to 13 patients (21.7%) in the control group and to 25 patients (40.3%) in the main group; the difference was statistically significant ($p < 0.05$).

In addition, endovascular treatment was introduced for the first time in the main group and was performed in 4 patients (6.5%), whereas no such interventions were performed in the control group. Accordingly, the proportion of patients who did not receive reperfusion therapy decreased significantly from 78.3% in the control group to 53.2% in the main group ($p < 0.05$). Thus, the algorithms not only increased the rate of thrombolytic therapy but also enabled the use of modern endovascular treatment. The higher rate of reperfusion therapy appears to result from shorter time intervals, improved diagnosis, and optimized patient routing, which is consistent with published data [3].

Conclusion

The implementation of prehospital care algorithms nearly doubled the rate of thrombolytic therapy (from 21.7% to 40.3%) and introduced endovascular treatment for patients with ACVA, providing access to modern therapies, which is one of the key conditions for improving clinical outcomes.

References

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