

DIAGNOSTIC AND TACTICAL CAPABILITIES OF PRIMARY-CARE PHYSICIANS IN ACUTE CEREBROVASCULAR DISORDERS

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Abstract

This article addresses early recognition, safe initial assessment, and immediate referral of suspected acute cerebrovascular disorder from primary care to a specialized stroke center. It defines the primary-care role as recognizing stroke, recording onset or last known well, assessing vital functions and glucose, identifying mimics, and coordinating transport. FAST/BE-FAST and reperfusion time windows are summarized.

Keywords: stroke, acute cerebrovascular disorder, primary care, FAST, BE-FAST, thrombolysis, mechanical thrombectomy, routing, time window, differential diagnosis.

Аннотация

В статье изложены раннее распознавание, безопасная первичная оценка и срочная маршрутизация пациента с подозрением на острое цереброваскулярное заболевание. Первичное звено фиксирует время симптомов, оценивает жизненные функции и глюкозу, выявляет инсультоподобные состояния и организует транспортировку; подтверждение подтипа и начало тромболизиса выполняются в специализированном центре. Рассмотрены FAST/BE-FAST и временные окна реперфузии.

Ключевые слова: инсульт, острое цереброваскулярное заболевание, первичная медицинская помощь, FAST, BE-FAST, тромболизис, механическая тромбэктомия, маршрутизация, временное окно, дифференциальная диагностика.

Annotatsiya

Maqolada o'tkir serebrovaskulyar kasallikni erta aniqlash, xavfsiz dastlabki baholash va insult markaziga zudlik bilan yo'naltirish yoritiladi. Birlamchi bo'g'in simptomlar vaqtini, hayotiy funksiyalar va glyukozani baholaydi, o'xshash holatlarni aniqlaydi va transportni

tashkil etadi; insult turi va tromboliz masalasi ixtisoslashgan markazda hal qilinadi. FAST/BE-FAST va reperfuziya vaqt oynalari ko‘rib chiqiladi.

Kalit so'zlar: insult, o'tkir serebrovaskulyar kasallik, birlamchi tibbiy yordam, FAST, BE-FAST, tromboliz, mexanik trombektomiya, yo'naltirish, vaqt oynasi, differensial tashxis.

Introduction

Stroke is a leading cause of death and long-term disability. GBD 2021 estimated 93.8 million people living with stroke consequences, 11.9 million new cases, 7.3 million deaths, and 160.5 million DALYs [1]. These figures reinforce rapid decisions at the first emergency-care contact. Stroke may be ischemic from vessel occlusion or hemorrhagic from vessel rupture; urgent neuroimaging distinguishes them. Primary care should record suspected stroke but not start thrombolytic, antiplatelet, or anticoagulant treatment before diagnosis [3,9]. Time is Brain reflects the cost of delay. The Saver model associates each untreated minute in a typical large-vessel supratentorial ischemic stroke with an average loss of 1.9 million neurons [2]. This is a model estimate, not an individual measurement; investigations must not delay routing.

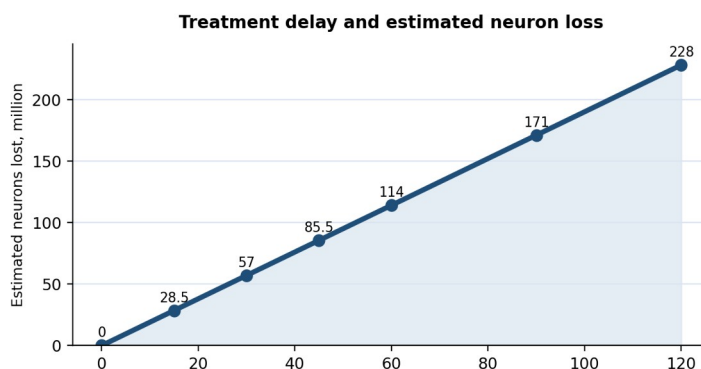


Figure 1. Linear increase in estimated neuronal loss with increasing treatment delay.

Source: Saver model [2]. The values are average estimates for a typical large-vessel ischemic stroke, not an individual prognosis.

Materials and Methodological Approach

This focused analysis prioritized the 2026 AHA/ASA acute ischemic-stroke guideline, the 2022 intracerebral-hemorrhage guideline, and the 2024 prevention guideline [3,9,10]. Screening evidence came from a Cochrane review; reperfusion evidence came from foundational trials and later-window studies [4–8]. It is not a systematic review; sources were selected for clinical relevance and evidence quality.

Clinical Signs and Early Diagnosis of Stroke

Stroke commonly causes sudden facial asymmetry, unilateral weakness, speech disturbance, visual-field loss, diplopia, ataxia, sensory change, or altered consciousness. Severe headache, vomiting, and reduced consciousness raise concern for hemorrhage, but clinical signs cannot replace neuroimaging [3,9].

FAST (Face-Arm-Speech-Time) is a brief screening tool:

1. Face - ask the patient to smile or show the teeth; assess unilateral facial droop.
2. Arm - ask the patient to raise both arms; identify drift or weakness.
3. Speech - ask for a simple sentence; assess slurring, aphasia, or poor comprehension.
4. Time - if any sign is present, record onset time and call emergency transport.

BE-FAST adds Balance and Eyes and may improve attention to posterior-circulation strokes. A negative scale does not exclude stroke; evidence is heterogeneous, so scales support rather than replace clinical reasoning [4].

Diagnostic Capabilities of the Primary-care Physician

Primary care should perform focused ABCDE assessment, measure blood pressure, pulse, respiratory rate, oxygen saturation, temperature, and capillary glucose, and correct hypoglycemia according to protocol because it can mimic stroke [3]. Record onset or last known well, anticoagulant use and last dose, recent surgery/bleeding, premorbid function, seizure, trauma, and comorbidities. These data inform reperfusion eligibility but must not delay transport [3]. Consider hypoglycemia, postictal Todd paresis, migraine aura, intoxication, infection, metabolic encephalopathy, vestibular syndrome, and peripheral facial palsy. Persistent suspicion requires urgent stroke-center routing, not observation.

Tactical Approach in Primary Care

Diagnosis and routing occur in parallel. Call emergency services, notify the receiving center, communicate last known well, and select the nearest facility capable of thrombolysis or thrombectomy within the local network [3].

Table 1. Stepwise actions in primary care when stroke is suspected

Stage	Minimum assessment	Immediate action	Unacceptable delay / error
1.Recognition	Sudden focal deficit; FAST/BE-FAST; consciousness.	Suspect stroke and activate emergency transport.	Do not dismiss suspicion because the scale is negative.
2.Stabilization	ABCDE; saturation;	Secure airway/breathing;	No routine oxygen without

Stage	Minimum assessment	Immediate action	Unacceptable delay / error
	blood pressure; pulse; glucose.	correct hypoglycemia per protocol.	hypoxia; no rapid unindicated BP reduction.
3. Time and history	Onset/last known well; anticoagulant; surgery; seizure.	Record exact time and transmit to EMS and stroke center.	Do not delay transport for documents or relatives.
4. Routing	Deficit severity; possible large-vessel occlusion; local network.	Notify the receiving stroke center in advance.	No private transport or unplanned referral to limited-capability facility.
5. Handover	Vital-sign trends; treatment given; contact information.	Standardized verbal and written handover.	No aspirin, anticoagulant, or thrombolytic before CT; no oral intake.

Time Windows for Reperfusion Therapy and Routing

Intravenous thrombolysis is evidence-based: NINDS established early alteplase efficacy and ECASS III supported a 4.5-hour window in selected patients [5,6]. The 2026 AHA/ASA guideline permits alteplase or tenecteplase within 4.5 hours and selected unknown-onset or 4.5–9-hour cases with advanced imaging [3]. Decisions require specialized imaging and contraindication assessment. Guideline and trial evidence support thrombectomy for large-vessel occlusion. DAWN and DEFUSE 3 support treatment in selected patients up to 24 and 16 hours, respectively [3,7,8]. Late presentation is not a reason to deny urgent stroke-center assessment. Destination depends on distance, transport time, and inter-center capacity. Primary care need not confirm large-vessel occlusion; it must recognize severe deficit and transmit accurate information [3].

Safety Boundaries in Initial Care

Avoid aspirin or anticoagulants before imaging, unjustified rapid blood-pressure reduction, routine oxygen without hypoxia, oral intake before swallowing assessment, intramuscular injections, and transport delays while awaiting extensive tests. Life-saving interventions are exceptions; other work occurs in parallel or at the stroke center [3,9]. Blood-pressure management differs by stroke type and reperfusion eligibility. Unjustified rapid reduction may worsen ischemic-penumbra perfusion; specialized teams should set targets under local protocol [3,9].

The Physician's Role in Primary Prevention

Primary prevention includes controlling hypertension, diabetes, dyslipidemia, and atrial fibrillation; smoking cessation; physical activity; healthy diet; obesity reduction; and

attention to social barriers. Antithrombotic therapy for primary prevention requires individualized indication and bleeding-risk assessment.

Discussion

Primary care adds value through FAST/BE-FAST training, ready glucometers and vital monitors, mandatory last-known-well documentation, advance notification, and standardized handover. Monitor times from onset to first contact, first contact to transport, and contact to stroke-center arrival. This article adapts international evidence rather than reporting a local Uzbek prospective study. Implementation must account for emergency routing, CT and thrombectomy capacity, distance, staff training, and subsequent audit of time and clinical outcomes.

Conclusion

In acute cerebrovascular disorder, primary care should suspect stroke early, assess reversible mimics, and record time data that determine treatment eligibility. Neuroimaging confirms ischemic or hemorrhagic type; empirical antithrombotic or thrombolytic therapy in primary care is unsafe. The strongest approach combines ABCDE and glucose assessment with emergency transport, advance notification, and standardized handover. The 4.5-hour thrombolysis window and selected thrombectomy up to 24 hours support immediate stroke-center routing [3,7,8]. FAST/BE-FAST training, unified primary-care/EMS routing, measurement of each delay stage, and regular audit can reduce disability and death. Continuous control of hypertension, diabetes, dyslipidemia, smoking, obesity, and atrial fibrillation remains essential.

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