Updates in Acute Ischemic Stroke

ISC 2026 Highlights

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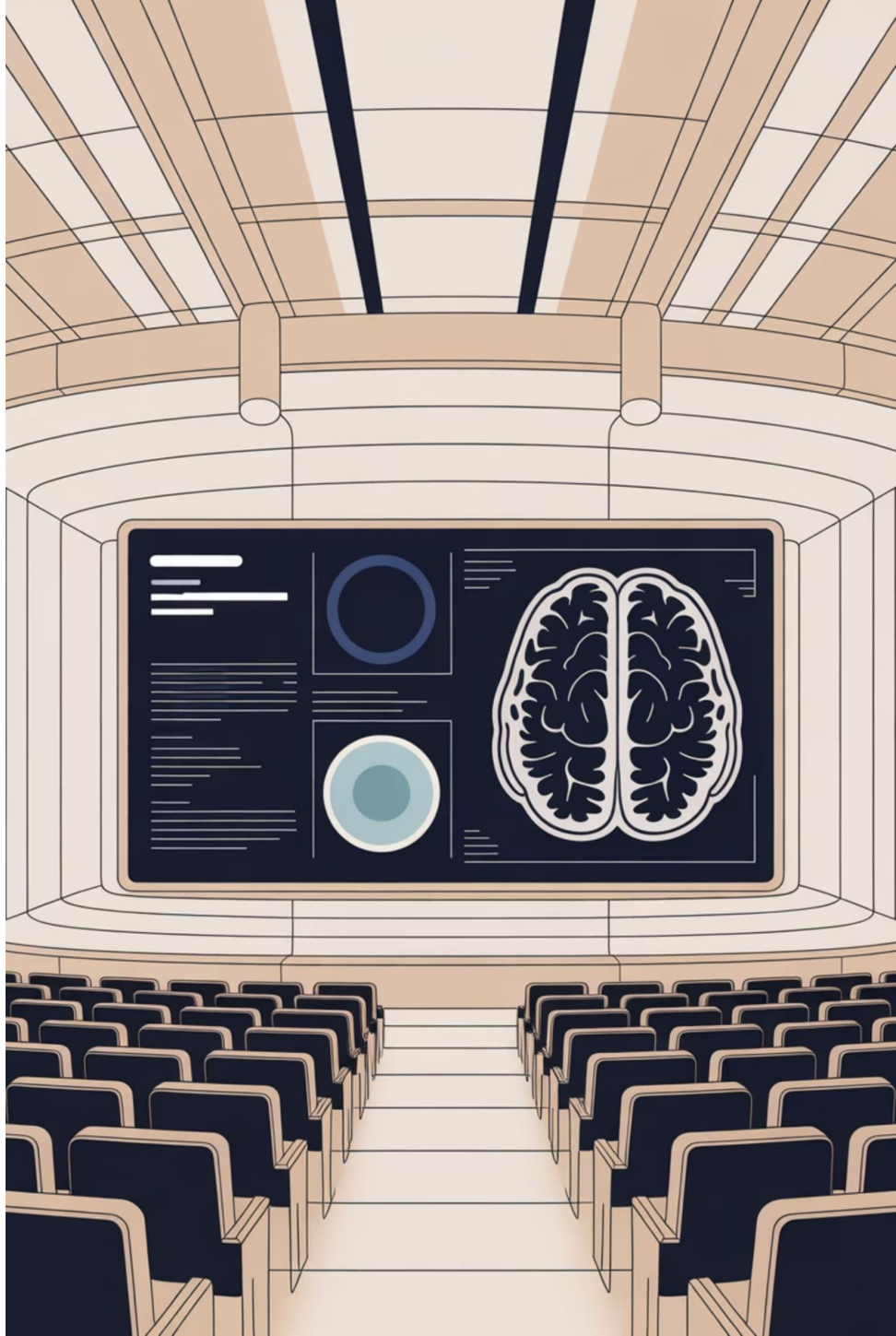


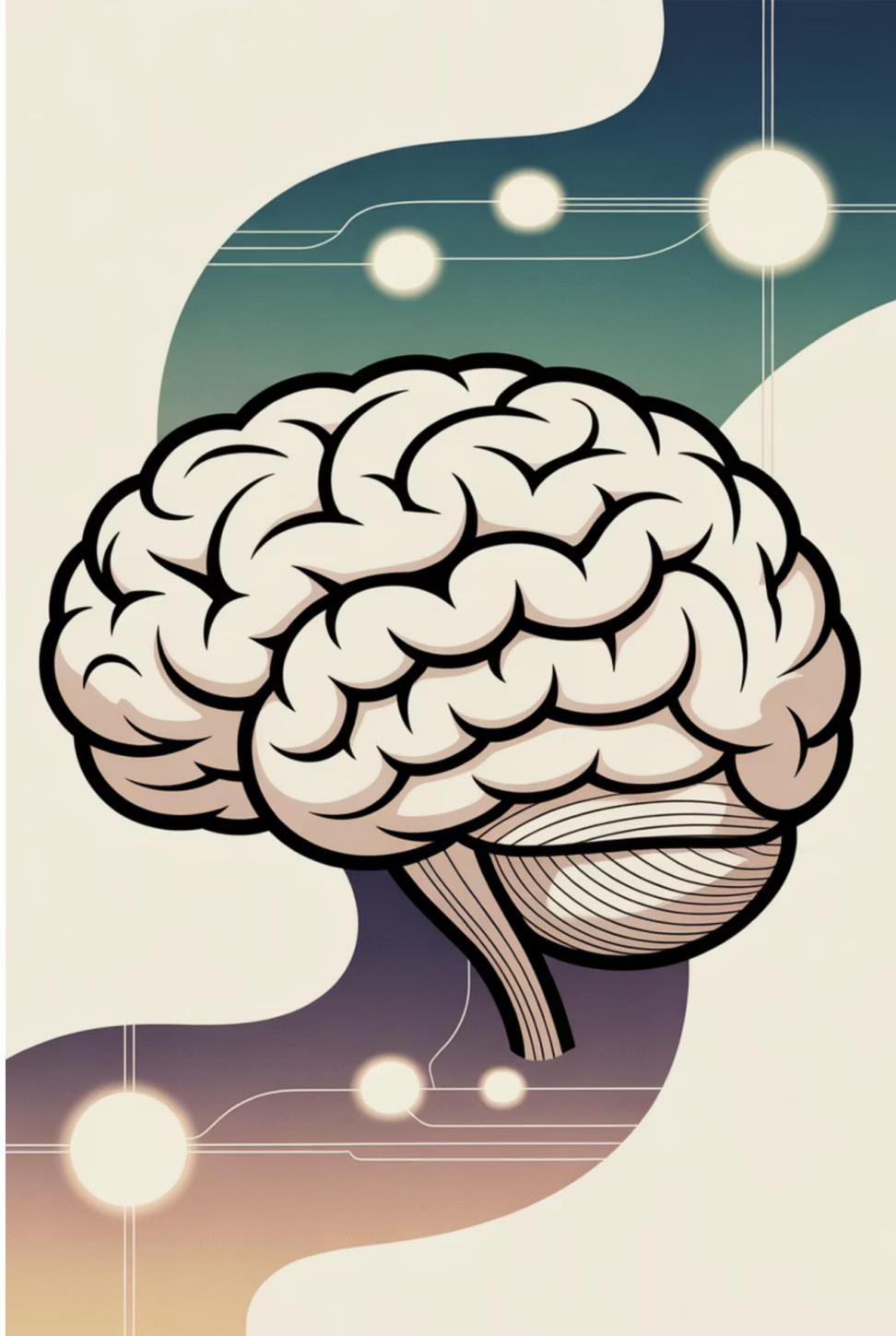
The University of Kansas Health System

CHAPTER 1 INTRODUCTION

The Evolving Landscape of AIS Treatment

Acute ischemic stroke (AIS) remains a leading cause of disability and death worldwide. The 2026 International Stroke Conference convened the global neurovascular community to share practice-changing evidence spanning **imaging, intervention, pharmacology,** and **systems of care**.

250+	40+	12+
Presentations	Countries represented	Late-breaking trials



CHAPTER 2 KEY TRIALS

Breaking News from ISC 2026: Key Trial Results

This presentation will explore several landmark trials that shaped acute stroke care at ISC 2026.

OCEANIC-STROKE

Evaluated optimal imaging strategies for patient selection in acute ischemic stroke

CHOICE-2

Compared treatment strategies in patients with acute stroke and large vessel occlusion

LAIS

Investigated late-window intervention in imaging-selected stroke patients

CREST-2

Examined carotid revascularization outcomes in symptomatic patients

TNK-PLUS

Studied tenecteplase dosing and efficacy in acute ischemic stroke

CHAPTER 3 PHARMACOLOGY

Pharmacological Breakthroughs: Acute Treatment

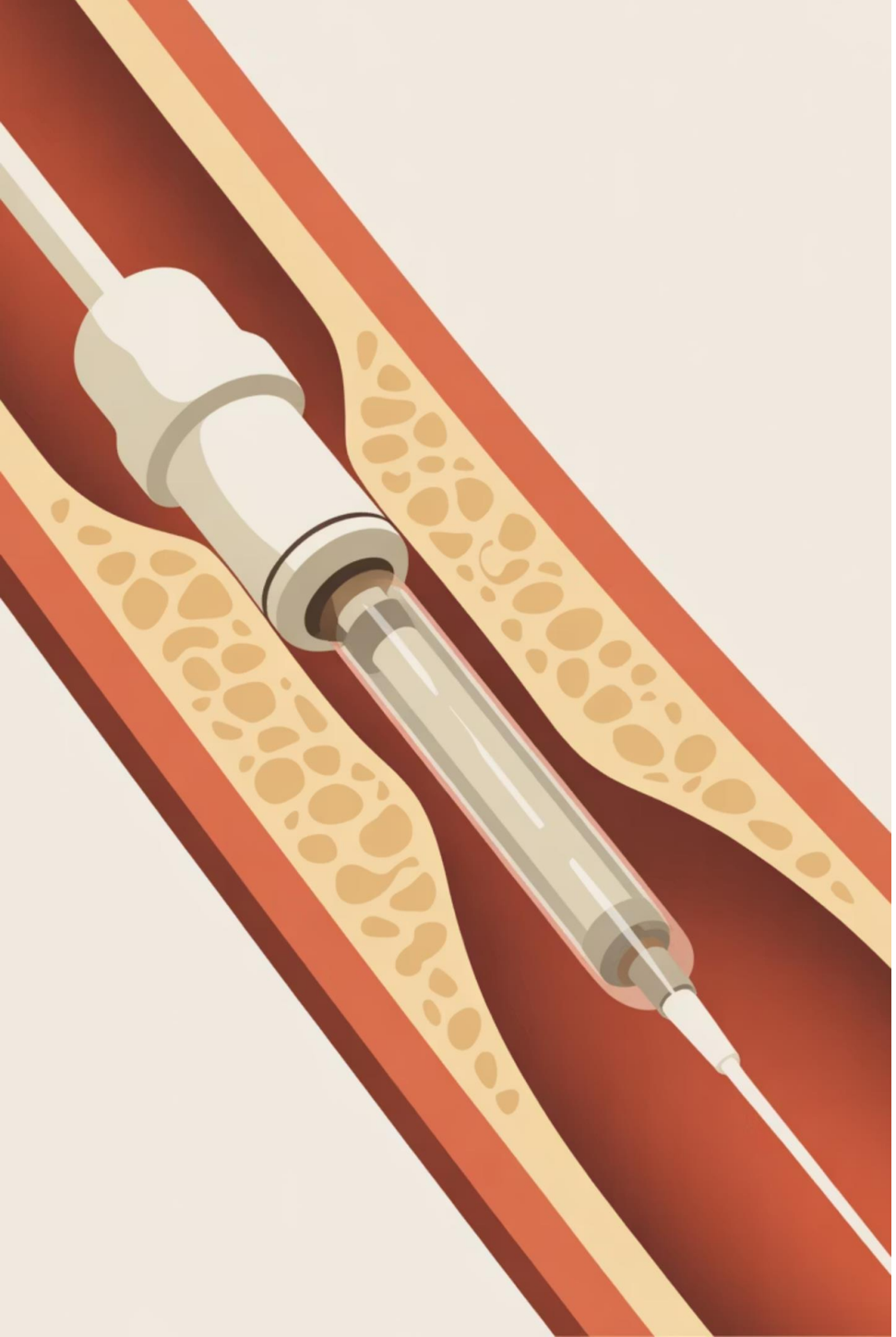
Refining the "post-clot" care for patients undergoing mechanical thrombectomy (EVT) was a major focus

CHOICE-2: Investigated giving **intra-arterial (IA) alteplase** directly into the brain after successful recanalization

- Patients receiving adjunctive IA alteplase had significantly higher rates of **excellent functional outcomes at 90 days** (57.5% vs. thrombectomy alone). This likely addresses "no-reflow" at the microvascular level that mechanical devices cannot reach

OPTION: Explored the time window for intravenous thrombolytics, showing treatment may not be strictly limited to 4.5 hours

- If advanced imaging shows the brain is still salvageable, tenecteplase can be beneficial up to **24 hours later**, especially for those smaller strokes where mechanical thrombectomy isn't an option



CHAPTER 4 THROMBECTOMY

Thrombectomy Innovations: Distal Occlusions & Bridging Therapy

While previous trials like ESCAPE-MeVO and DISTAL (2025) failed to show a definitive benefit for mechanical thrombectomy (MT) in smaller vessels, **ORIENTAL-MeVO** found a significant advantage by focusing on a more specific, higher-severity patient population

- **Primary Outcome (mRS 0–2):** Patients treated with thrombectomy were significantly more likely to achieve functional independence at 90 days
- **Vessel Reopening:** Imaging at 24–72 hours showed vessel patency in **82.1%** of the thrombectomy group versus only **46.2%** of the medical group

TNK-PLUS: Explored whether tenecteplase (TNK) should be given before thrombectomy in the **late window** (4.5–24 hours)

- No significant benefit was found for "bridging" with TNK in this specific late-window population when thrombectomy was readily available, suggesting that direct-to-thrombectomy remains a viable standard in these cases

CHAPTER 5 PREVENTION & NEUROPROTECTION

Secondary Prevention and Novel Neuroprotective Agents

LAIS Trial

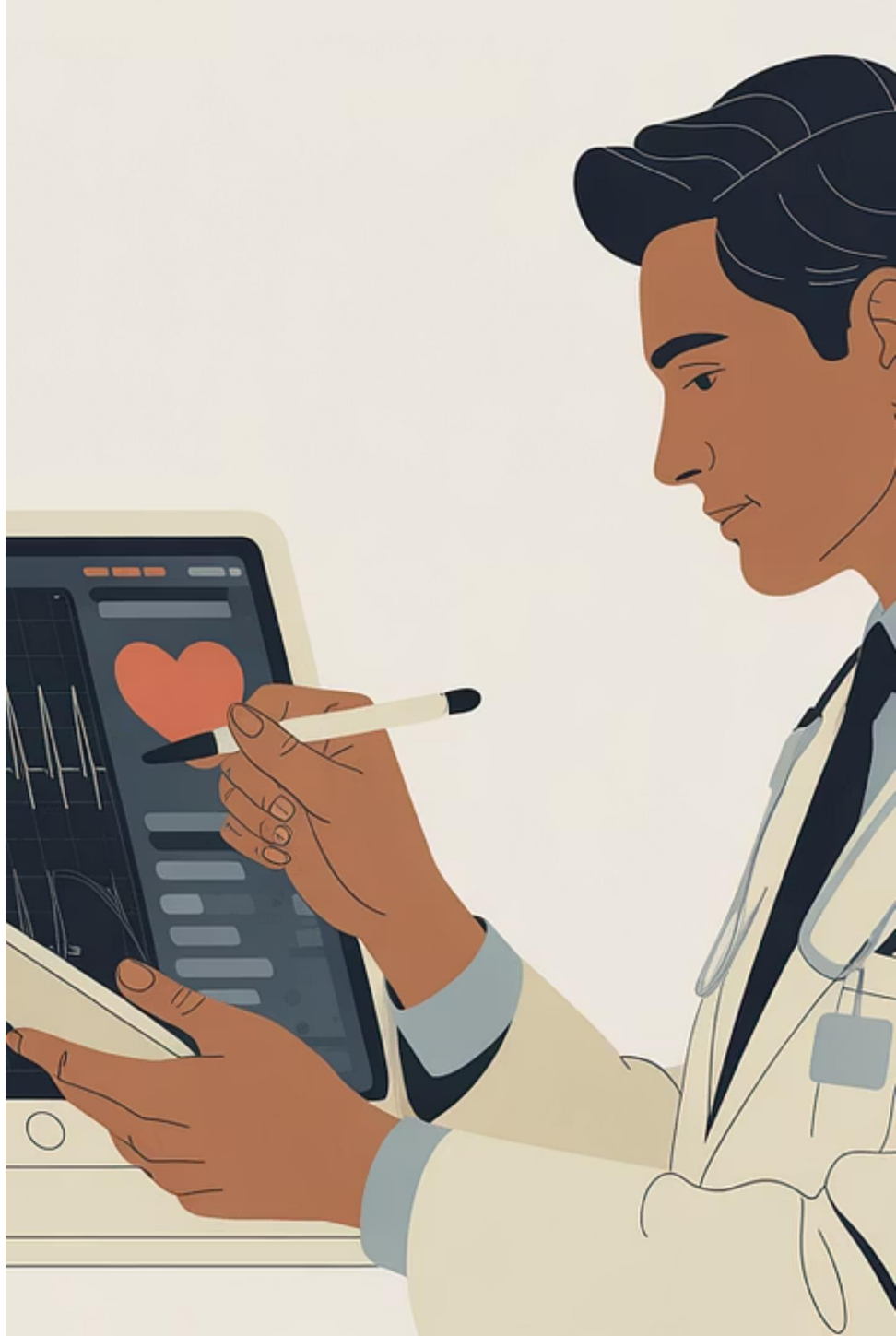
Evaluated **loberamisal**, a new neuroprotective agent administered within 48 hours of stroke onset.

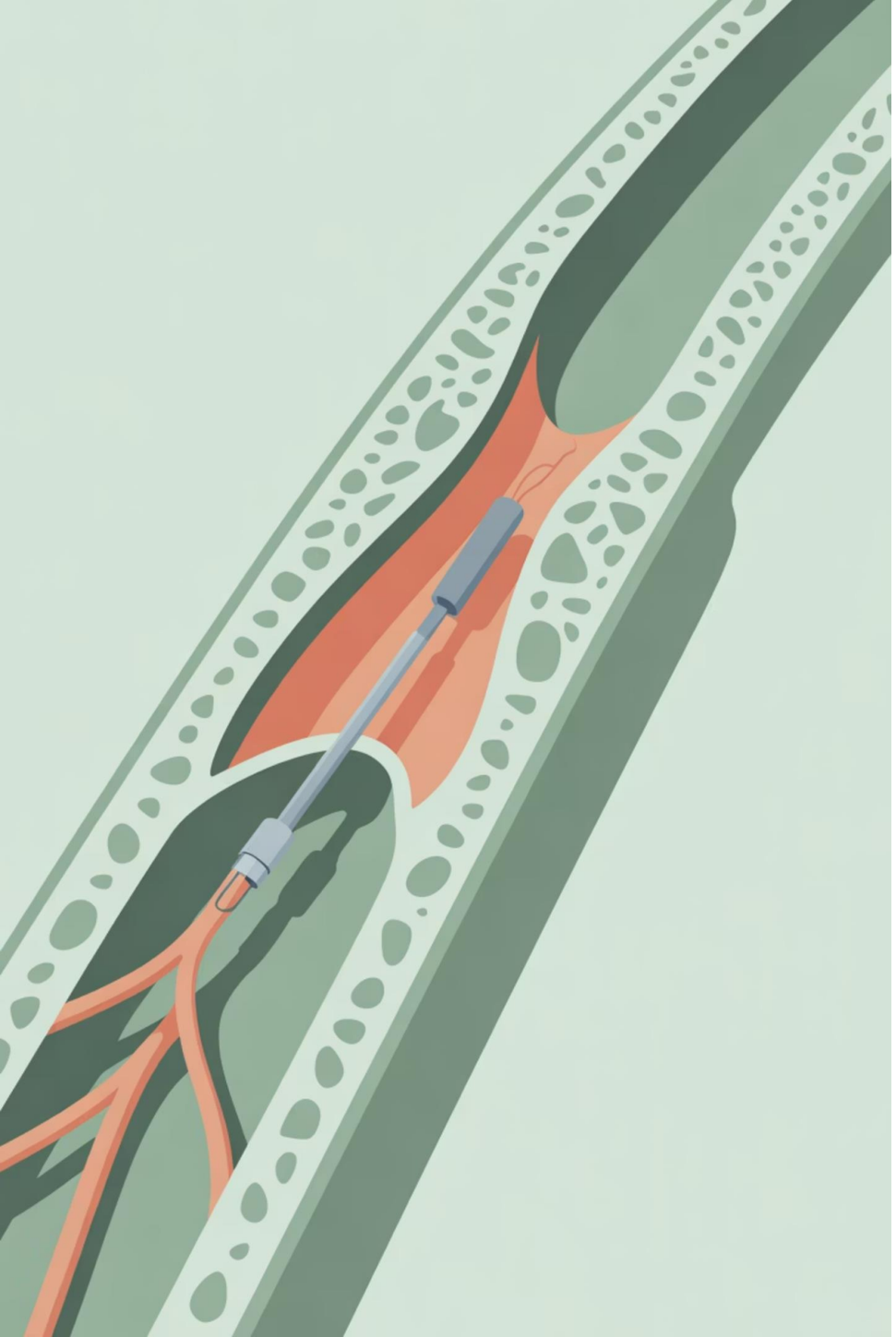
- Mechanism of action:
  - **Dissociate the PSD-95/nNOS complex to** prevent buildup of nitric oxide
  - **Potentiate GABA receptors** to counteract the hyperexcitability of neurons, leading to cell death
- Intervention showed a **13% absolute increase** in patients achieving independence (mRS 0-1) at 90 days

OCEANIC-STROKE Trial

A landmark study in secondary stroke prevention, providing the first Phase III evidence that a new class of drugs can reduce stroke recurrence without the typical trade-off of increased bleeding

- Mechanism of action:
  - Asundexian is a **factor XIa inhibitor**
  - Studied to be used in conjunction with other traditional antithrombotics such as aspirin
- Asundexian reduced the risk of recurrent ischemic stroke by **26%** compared to placebo (6.2% vs. 8.4%)





CHAPTER 6 CAROTID MANAGEMENT

Carotid Revascularization: CREST-2 Trial Results

The Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial (CREST-2) presented pivotal findings, refining our approach to preventing stroke in asymptomatic patients.

Patient Outcomes & Safety

- CREST-2 found **no cognitive benefit** to either surgery or stenting over medical therapy alone
- Adding a stent to intensive medicine did significantly reduce the risk of **future stroke** (2.8% vs. 6.0%)

Clinical Implications & Standards

CREST-2 underscores the critical importance of **individualized patient selection** and shared decision-making, reinforcing that revascularization remains a viable and beneficial option for carefully selected asymptomatic patients, moving beyond previous, more generalized guidelines towards a more nuanced, risk-stratified approach to carotid management

CHAPTER 7 DISPARITIES

Rural–Urban Disparities in Stroke Outcomes

Rural areas face greater challenges with stroke mortality due to social and environmental factors.

Access to Specialized Care

Rural areas have significantly fewer certified stroke centers and longer transport times to thrombectomy-capable facilities, delaying critical interventions.

Social Determinants

Higher poverty rates (23.3% in rural vs 11.9% in urban areas), limited health insurance coverage, and lower health literacy contribute to worse outcomes.

Infrastructure Gaps

Ambulance availability critically low (0.03 per 100,000 in rural areas), limited telemedicine infrastructure, and fewer mobile stroke units.

Clinical Outcomes

Rural patients present with more severe strokes, have lower reperfusion therapy rates, and experience higher mortality (13.56% vs lower in urban areas).

Environmental Factors

Geographic isolation, weather-related transport delays, and limited rehabilitation services post-discharge.

Stark Reality:

Rural patients experience significantly higher stroke mortality rates, reaching 13.56%, compared to those in urban areas, underscoring critical healthcare access gaps.

CHAPTER 8 CONTROVERSIES

Challenges and Controversies: Debating the Future of AIS Care

1

Direct-to-Thrombectomy?

Should IV thrombolysis be skipped entirely in patients eligible for mechanical thrombectomy? Conflicting trial data fueled intense debate.

2

Equity in Access

Rural and low-income populations face significantly longer treatment times. Telestroke networks and policy interventions were discussed as solutions.

3

AI Governance

As AI-driven decision tools enter clinical workflows, questions of accountability, bias, and regulatory oversight remain unresolved.

CONCLUSION

What's Next in Acute Ischemic Stroke

ISC 2026 reinforced a clear trajectory: **faster diagnosis, broader eligibility, smarter technology, and equitable access**. The field is converging on a future where personalized, imaging-guided stroke care is available to every patient, everywhere.

AI-Guided Triage

Precision imaging at the point of care

Broader Treatment

Expanding windows and vessel targets

Global Equity

Closing disparities in stroke access worldwide