



## Ischemic and Hemorrhagic Stroke Management – What is the same and what is different

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## Disclosures

None to declare

## Objectives

- Compare and contrast ischemic stroke management with hemorrhagic stroke
- Medical management of acute ischemic stroke
  - Antithrombotics and anticoagulants
  - Antihypertensives
  - Statins

When it comes to a stroke,  
**TIME = BRAIN**



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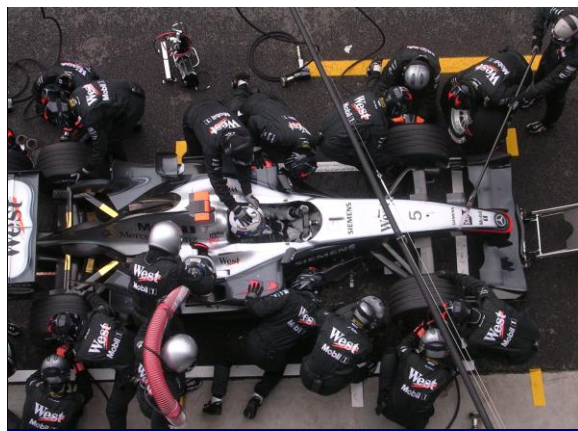
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## Hyperacute Stroke Revascularisation Therapy



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## Medical Management in Ischemic Stroke

Antithrombotics and anticoagulants  
Antihypertensives  
Statins

### REVIEW ARTICLE

## Early Risk of Stroke After Transient Ischemic Attack

A Systematic Review and Meta-analysis

Caren M. Wu, MD, MSc; Kevin McLaughlin, MB, ChB, PhD; Diane L. Lorenzetti, MLS;  
Michael D. Hill, MD, MSc; Braden J. Manns, MD, MSc; William A. Ghali, MD, MPH

Arch Intern Med. 2007;167(22):2417-2422

Table 3. Stratified Meta-analysis of the Early Risk of Stroke Following Transient Ischemic Attack for Passive vs Active Ascertainment of Outcome (Random Effects Models)

Risk of Stroke at Follow-up, d	Passive Ascertainment, % (95% CI)	Active Ascertainment, % (95% CI)	P Value
2	3.1 (1.7-4.6)	9.9 (4.9-14.9)	.02
30	6.4 (4.2-8.5)	13.4 (9.8-17.1)	.004
90	8.7 (6.3-11.1)	17.3 (9.3-25.3)	.11

Half of recurrent events occur within the first 48 hours of minor stroke or TIA

### Guidelines

Canadian Stroke Best Practice Recommendations: Hyperacute Stroke Care Guidelines, Update 2015

## Role of anti-thrombotics in secondary prevention: Antiplatelets

- Aspirin as standard of treatment in combination with statins
  - Loading with ASA 160mg stat and 81mg OD after
- In patients already on prior ASA, clopidogrel can be considered as an alternative although similar treatment effect for stroke prevention

## Role of antithrombotics in secondary prevention: Combination antiplatelets

- Previous long term studies have demonstrated reduction in recurrent stroke but increased risk of major bleeding with no net benefit.
- Short term dual antiplatelet therapy within 24 hours of TIA/minor stroke first tested in FASTER trial associated with reduction in stroke rates (ARR 3.3%,  $p = 0.25$ ) but increase in rate of symptomatic hemorrhage (AR 1%,  $p = 0.5$ )

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The NEW ENGLAND JOURNAL of MEDICINE	
<b>Clopidogrel with Aspirin in Acute Minor Stroke or Transient Ischemic Attack</b> <small>Yongjun Wang, M.D., Yilong Wang, M.D., Ph.D., Xingquan Zhao, M.D., Ph.D., Liang Liu, M.D., Ph.D., David Wang, D.O., F.A.H.A., F.A.A.N., Chensue Wang, M.D., Ph.D., Chen Wang, M.D., Hui Li, Ph.D., Xia Meng, M.D., Ph.D., Liang Cai, M.D., Ph.D., Jianping Jia, M.D., Ph.D., Qing Gong, M.D., Ph.D., Anding Xu, M.D., Ph.D., Jiezhong Tang, M.D., Ph.D., Yansheng Li, M.D., Ph.D., Zhimin Wang, M.D., Haoyu Xia, M.D., and S. Claiborne Johnston, M.D., Ph.D., for the CHANCE Investigators*</small>	<b>Clopidogrel and Aspirin in Acute Ischemic Stroke and High-Risk TIA</b> <small>S. Claiborne Johnston, M.D., Ph.D., J. Donald Easton, M.D., Mary Farrant, M.B.A., William Barham, M.D., Robin A. Conwell, M.D., Jordan J. Elm, Ph.D., Anthony S. Kim, M.D., Anne S. Lindblad, Ph.D., and Yuko Y. Palesch, Ph.D., for the Clinical Research Collaboration, Neurological Emergencies Treatment Trials Network, and the POINT Investigators*</small>
<b>CHANCE</b> <ul style="list-style-type: none"> <li>• Large RCT with similar treatment effect to FASTER but no increased risk of bleeding</li> <li>• Disproportionately high rate of recurrent stroke in exclusively Chinese population</li> </ul>	<b>POINT</b> <ul style="list-style-type: none"> <li>• Similar relative reduction in recurrent stroke rates</li> <li>• High rates of study drug discontinuations with increased risk of major bleeding</li> </ul>
<div style="border: 1px solid black; padding: 5px; text-align: center;">                     Not standard of care but can be considered if risk of hemorrhage is low.                      Yet to influence guidelines                 </div>	

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## Role of anti-thrombotics in secondary prevention : Anticoagulants

- Early anticoagulation with UFH or warfarin associated with reduction in risk of recurrent stroke but off set by increased risk of bleeding.
- Direct acting oral anticoagulants represent a potential option of reducing stroke risk with minimal haemorrhagic complications – DATAS-2 Phase II clinical trial
- Special consideration for specific high risk populations

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# Antihypertensives



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## Anti-hypertensives in Stroke

- Effective blood pressure control reduces risk of recurrent stroke
- Canadian Best Practice Guidance recommends target BP < 140mm Hg/90mm Hg and <130mmHg/80 mm Hg in diabetes
- Blood pressure control in acute stroke remains uncertain outside of tPA and urgent carotid endarterectomy

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## Statins



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The NEW ENGLAND  
JOURNAL of MEDICINE

ESTABLISHED IN 1812 AUGUST 10, 2006 VOL. 355 NO. 6

High-Dose Atorvastatin after Stroke  
or Transient Ischemic Attack

The Stroke Prevention by Aggressive Reduction in Cholesterol Levels (SPARCL) Investigators\*

N Engl J Med 2006;355:549-59.

- Absolute reduction in 5-year risk of 2.2%;  
NNT of 227 per year to prevent 1 stroke
- The lower the LDL, the lower the recurrent  
stroke/TIA risk
- Small increase in hemorrhagic strokes  
balanced by significant net reduction in all  
strokes

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## Questions?

**HOMER vs. HOMER**

Over 2,500 years ago, a Greek poet named Homer wrote the *Iliad* and the *Odyssey*, two of the world's best-known works of literature. Seventeen years ago, a doofus named Homer Simpson made his first appearance on TV. Read on for a few more differences between these two famous Homers.

HOMER	HOMER SIMPSON
Wrote two of the world's longest epic poems.	Would like to eat the world's biggest hoagie.
Was blind.	Can't see his toes.
Had great writing chops.	Loves pork chops.
His birthplace is a mystery.	His IQ is a mystery.
His books have earned a lot of dough.	Says "D'oh" a lot.
Both the <i>Iliad</i> and the <i>Odyssey</i> are mixes of fact and fiction.	Most of Homer's stories are more fiction than fact.

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