What’s new in best practice stroke prevention and diagnosis

Dr. Albert Jin
Associate Professor, Division of Neurology
Department of Medicine, Queen’s University and KHSC
March 20, 2018
Presenter Disclosure

Faculty: Dr. Albert Jin

Relationships with commercial interests:
None

Potential for conflict(s) of interest:
None
Outline

• BP, lipid, antiplatelet, and arterial dissection management
• Timing of initial TIA assessment
• What to do about PFO?
Objectives

• Review changes to BP, lipid, antiplatelet and cervicocephalic arterial dissection management
• Learn when to send the patient to ER and when to send to Stroke Clinic
• Review recommendations for PFO closure
http://www.strokebestpractices.ca/prevention-of-stroke/
Canadian Stroke Best Practices

Secondary Prevention of Stroke
Update 2017 (FINAL)

Wein T, Gladstone D (Writing Group Chairs) on Behalf of the Canadian Stroke Best Practice Recommendations SECONDARY PREVENTION of STROKE Writing Group

© 2017 Heart and Stroke Foundation of Canada
November 2017
Blood pressure management

• BP target remains 140/90 for most patients
  – 130/80 for patients with diabetes
• But, for patients with subcortical infarcts due to small vessel ischemic disease, the systolic target is now 130
Lipid management

• LDL < 2.0 mmol/L for most patients
• If stroke plus recent ACS or established coronary artery disease, LDL < 1.8 mmol/L
• No targets for lipid ratio
Antiplatelet therapy

• Still no preference between ASA, clopidogrel and ASA/dipyridamole
• Still no clear guidance on switching to clopidogrel if patient had stroke/TIA while on ASA
  – Only “expert opinion”, based on meta-analysis of heterogeneous studies
• Dual antiplatelet therapy for 21 days doesn’t increase risk of hemorrhage
Antiplatelet therapy

• Dual vs monotherapy following TIA is being tested in the POINT trial
  – Data to be presented later this year?
  – Clopidogrel (600 mg load, then 75 mg/day for 89 days) plus ASA vs ASA alone
Cervicocephalic Arterial Dissection

- Either anticoagulation or antiplatelet therapy is acceptable
- Duration of therapy is not clear

- It’s worth noting that the risk of stroke is highest within the first two weeks and drops off dramatically after that
When should TIA/minor stroke patients be seen, and what difference does it make?
Effect of urgent treatment of transient ischaemic attack and minor stroke on early recurrent stroke (EXPRESS study): a prospective population-based sequential comparison


This is where the TIA battle is often won or lost.

Figure 2: Risk of recurrent stroke after first seeking medical attention in all patients with TIA or stroke who were referred to the study clinic.
Highest Risk Symptoms

• Weakness

• Speech disturbance
  – Dysarthria
  – Aphasia
Increased Risk Symptoms

- No weakness but patient may have...
- Hemibody sensory loss
- Hemifield vision loss
- Monocular vision loss
- Binocular diplopia
- Ataxia
<table>
<thead>
<tr>
<th>Risk For Recurrent Stroke</th>
<th>Time from Stroke Symptom Onset to Healthcare Presentation</th>
<th>Presenting Symptoms</th>
<th>When Patients Should be Seen by Healthcare Professional</th>
<th>Where Patients Should be Seen</th>
<th>Tests to be Done on Initial Assessment</th>
</tr>
</thead>
</table>
| **Very HIGH RISK**       | Within 48 hours                                          | - Transient, fluctuating or persistent unilateral weakness (face, arm and/or leg)  
- Transient, fluctuating or persistent speech disturbance /aphasia.  
- Fluctuating or persistent symptoms without motor weakness or speech disturbance (eg. hemibody sensory symptoms, monocular visual loss, hemifield visual loss, +/- other symptoms suggestive of posterior circulation stroke such as diplopia, dysarthria, and/or ataxia). | Immediately | Emergency Department [ideally ED with brain imaging onsite and access to alteplase (tPA)] | CT/CTA or MRI/MRA (aortic arch to vertex), ECG, Lab Work (Table 3) |
<table>
<thead>
<tr>
<th>Risk For Recurrent Stroke</th>
<th>Time from Stroke Symptom Onset to Healthcare Presentation</th>
<th>Presenting Symptoms</th>
<th>When Patients Should be Seen by Healthcare Professional</th>
<th>Where Patients Should be Seen</th>
<th>Tests to be Done on Initial Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH RISK</td>
<td>Between 48 hours and 2 weeks</td>
<td>- Transient, fluctuating or persistent unilateral weakness (face, arm and/or leg), or speech disturbance/aphasia</td>
<td>As soon as possible, ideally within 24 hours</td>
<td>Stroke Prevention Clinic with Neurologist or Stroke Specialist, Nurse Practitioner</td>
<td>CT/CTA or MRI/MRA (aortic arch to vertex), ECG, Lab Work (Table 3)</td>
</tr>
<tr>
<td>Risk For Recurrent Stroke</td>
<td>Time from Stroke Symptom Onset to Healthcare Presentation</td>
<td>Presenting Symptoms</td>
<td>When Patients Should be Seen by Healthcare Professional</td>
<td>Where Patients Should be Seen</td>
<td>Tests to be Done on Initial Assessment</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------------------------------------</td>
<td>---------------------</td>
<td>-----------------------------------------------------</td>
<td>-----------------------------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>Moderate (INCREASED) RISK</td>
<td>Between 48 hours and 2 weeks</td>
<td>- Fluctuating or persistent symptoms <em>without motor weakness</em> or speech disturbance (e.g., hemibody sensory symptoms, monocular vision loss, binocular diplopia, hemifield vision loss, or ataxia)</td>
<td>As soon as possible, ideally within 2 weeks</td>
<td>Stroke Prevention Clinic with Neurologist or Stroke Specialist, Nurse Practitioner</td>
<td>CT/CTA or MRI/MRA (aortic arch to vertex), ECG, Lab Work (Table 1)</td>
</tr>
<tr>
<td>Risk For Recurrent Stroke</td>
<td>Time from Stroke Symptom Onset to Healthcare Presentation</td>
<td>Presenting Symptoms</td>
<td>When Patients Should be Seen by Healthcare Professional</td>
<td>Where Patients Should be Seen</td>
<td>Tests to be Done on Initial Assessment</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------------------------------------</td>
<td>---------------------</td>
<td>------------------------------------------------------</td>
<td>-----------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>LOWER RISK</td>
<td>More than 2 weeks</td>
<td>- Any typical or atypical symptoms of stroke or transient ischemic attack</td>
<td>Ideally within 1 month</td>
<td>Ambulatory Clinic with access to Neurologist or Stroke Specialist, Nurse Practitioner</td>
<td>As appropriate based on assessment by healthcare team</td>
</tr>
<tr>
<td>Risk For Recurrent Stroke</td>
<td>Time from Stroke Symptom Onset to Healthcare Presentation</td>
<td>Presenting Symptoms</td>
<td>When Patients Should be Seen by Healthcare Professional</td>
<td>Where Patients Should be Seen</td>
<td>Tests to be Done on Initial Assessment</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------------------------------------</td>
<td>---------------------</td>
<td>-------------------------------------------------------</td>
<td>-----------------------------</td>
<td>----------------------------------------</td>
</tr>
</tbody>
</table>

What is the effect of seeing patients quickly?
One-Year Risk of Stroke after Transient Ischemic Attack or Minor Stroke

Pierre Amarenco, M.D., Philippa C. Lavallée, M.D., Julien Labreuche, B.S.T., Gregory W. Albers, M.D., Natan M. Bornstein, M.D., Patrícia Canhão, M.D., Louis R. Caplan, M.D., Geoffrey A. Donnan, M.D., José M. Ferro, M.D., Michael G. Hennerici, M.D., Carlos Molina, M.D., Peter M. Rothwell, M.D., Leila Sissani, B.S.T., David Školoudík, M.D., Ph.D., Philippe Gabriel Steg, M.D., Pierre-Jean Touboul, M.D., Shinichiro Uchiyama, M.D., Éric Vicaut, M.D., and Lawrence K.S. Wong, M.D., for the TIAregistry.org Investigators*

DOI: 10.1056/NEJMoa1412981

Copyright © 2016 Massachusetts Medical Society.
Figure 1. Cumulative Incidence of the Composite Outcome in the Overall Population.

The composite outcome included stroke, an acute coronary syndrome, and death from cardiovascular causes.
Stroke prevention is better when patients are seen quickly

- Stroke rate at:
  - 2 days: 1.5%
  - 7 days: 2.1%
  - 30 days: 2.8%
  - 90 days: 3.7%
  - 365 days: 5.1%
Shorter wait time = Fewer strokes
PFO

- Two recent trials have demonstrated that PFO closure reduces the risk of recurrent stroke
Patent Foramen Ovale Closure or Antiplatelet Therapy for Cryptogenic Stroke

Lars Søndergaard, M.D., Scott E. Kasner, M.D., John F. Rhodes, M.D., Grethe Andersen, M.D., D.M.Sc., Helle K. Iversen, M.D., D.M.Sc., Jens E. Nielsen-Kudsk, M.D., D.M.Sc., Magnus Settergren, M.D., Ph.D., Christina Sjöstrand, M.D., Ph.D., Risto O. Roine, M.D., David Hildick-Smith, M.D., J. David Spence, M.D., and Lars Thomassen, M.D., for the Gore REDUCE Clinical Study Investigators*
Patent Foramen Ovale Closure or Anticoagulation vs. Antiplatelets after Stroke

PFO should be closed if...

• Patient is 18-60 and no other cause of stroke is found
• Patient has been evaluated by someone with stroke expertise
• Infarction is confirmed on imaging and it’s not a lacune
Summary

• A few small changes to BP and lipid management
  – Importance of distinguishing lacunar infarct from other stroke subtypes
  – Lipid management is a little simpler
• Not much change in antiplatelet therapy... yet
• TIA patients should be seen quickly if there is any weakness or speech disturbance
• Some PFOs should be closed