TIAs and the prevention of stroke

In this new column we will share clinical pearls from practising physicians, then follow them with a commentary by a local expert. —ED

In my view a transient ischemic attack (TIA) is a medical emergency as 10% of patients with a TIA will have a stroke (a medical catastrophe) within 90 days of a TIA. Because 50% of these patients (5% of all TIAs) will have their stroke within 2 days of the TIA, time is of the essence.

I believe we can significantly reduce the risk of stroke following a TIA if we do the following:

- Send the patient immediately for a CBC, CR, CK, and AST.
- Have the patient take the following:
  1. ASA 325 mg STAT and then 81 mg OD.
  2. Clopidogrel bisulfate (Plavix) 300 mg STAT and then 75 mg OD.
  3. Atorvastatin (Lipitor) 20 mg STAT and simvastatin (Zocor) 40 mg STAT then OD.
  4. Ramipril (Altace) 2.5 mg STAT or perindopril erbumine (Coversyl) 2 mg STAT then gradually titrate the dose to ramipril 10 mg or perindopril erbumine 8 mg over 7 to 10 days.
- If necessary, further reduce BP gradually with other medications.

Refer the patient urgently to the Stroke Prevention Clinic at Vancouver General Hospital (see the "Stroke prevention clinic" box at right). The Clinic has rapid access to CT head scans and carotid artery doppler ultrasound. The current wait time to consultation is 2 weeks.

This prescription style is contrary to my normal pharmacological practice of "start low, go slow, and aim high" only one drug at a time, but the risk of side effects is outweighed by the 2-day 5% stroke risk. One must use clinical judgment if relative or absolute contraindications exist in respect to any of the above-noted therapeutic options.

I realize that it is relative heresy to suggest that ASA does not work for stroke prevention, but as Dr Phil Teal (Director of the Stroke Prevention Clinic at VGH) has said, "There is no single trial evidence that ASA reduces the risk of stroke."

Statins, ACE inhibitors, and blood pressure reduction each have single trial evidence of stroke risk reduction of between 25% and 40% over 3- to 4-year terms.

—Ian L. Mitchell, MD
Delta

Commentary

Dr Mitchell's sense of urgency regarding the investigation and treatment of patients presenting with TIAs and stroke is well founded and greatly appreciated. A major stroke is a life-altering catastrophe. Stroke is the third leading cause of death and the leading cause of adult disability. Current stroke prevention strategies could prevent half of all strokes and yet we fail to do this with distressing frequency.

TIAs must be considered an emergency since, like unstable angina, they reflect an unstable vascular condition. Clinical predictors of high risk include major symptoms of limb weakness or aphasia, crescendo or recurrent TIAs, TIAs due to high-grade atherosclerotic disease of the cervical or intracranial vessels or associated with high-risk cardioembolic sources, and TIAs in patients with multiple vascular risk factors.

Urgent targeted investigations are required to define the underlying vascular diagnosis. Basic lab tests and an EKG do not evaluate either the organ at risk, or the heart and vessels likely to be causing the problem (with the exception of atrial fibrillation). However, these are often the extent of tests done in the ER and the patient is then told the tests were normal and to see his or her family doctor or take an Aspirin. Key investigations or referrals are often arranged on a routine rather than urgent/emergent basis. Routine, in our current health care system, may mean waiting for 3 months for a carotid ultrasound or neurology evaluation.

Aggressive investigation and treatment is necessary. At the Vancouver General TIA and Stroke Prevention Clinic we typically see patients within a few days and same-day assessment by a stroke neurologist is available either in the clinic or office when necessary. When indicated we are able to get the essential investigations on the same day. A similar clinic operates in Victoria.

Stroke prevention strategies should be evidence-based, where the evidence exists, or based on a sound understanding of vascular biology and the brain when the evidence is inadequate or lacking.

Risk factor management including vigilant control of blood pressure, cholesterol, and blood sugar to target levels is essential. Statins, ACE inhibitors, or angiotensin receptor blockers are proven effective. Smoking cessation is a highly and rapidly reversible stroke risk.

Antithrombotic therapy is a mainstay of therapy, but unfortunately ASA is only modestly effective. There is mounting evidence for true ASA resistance and ASA failure is commonplace. Both clopidogrel bisulfate

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(Plavix) and ASA/dipyridamole (Aggrenox) are more effective in high-risk cases. The role of clopidogrel bisulfate plus ASA is under investigation for acute intervention in TIA patients but is not used for long-term stroke prevention due to the increased risk of bleeding when ASA is added to clopidogrel bisulfate. Patients with atrial fibrillation must be considered for warfarin anticoagulation.

Patients with symptomatic carotid stenosis must be evaluated for urgent skillful endarterectomy or interventional therapy.

Finally, we must re-engineer our approach to stroke care. Stroke prevention clinics will reduce the incidence and burden of stroke. Additionally, a regional approach to acute stroke delivery in the era of thrombolytic and interventional acute stroke management is required to provide these potent but demanding therapies to our patients. Dr Mitchell's prescriptions are on the right track.

—Philip Teal, MD, FRCPC
Director, Stroke Prevention Clinic (VGH)
BC Centre for Stroke and Cerebrovascular Diseases

STROKE PREVENTION CLINIC

The Vancouver General Hospital Stroke Prevention Clinic is an acute response clinic that provides expert stroke care to patients from the Lower Mainland and throughout BC. The mission of the clinic is to see all patients within days of the referral. Key diagnostic studies can often be obtained on the same day as the Stroke Clinic appointment. You can download the clinic's referral form from http://bcstrokecentre.ca/referral.pdf.

Web site: http://bcstrokecentre.ca
Stroke Prevention Clinic: 604 875-5255
Stroke Program Office: 604 875-4554

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New immunization programs

In September 2004, BC's Ministry of Health announced province-wide funding to increase immunization programs aimed at protecting children from varicella, meningococcal C, and influenza. This means more protection for children from these diseases.

Varicella vaccine
- Beginning in 2005, this vaccine is offered to kindergarten students, grade 6 students, and all children born in 2004 when they reach their first birthday.
- Other children should be vaccinated if they are at high risk and so should their household contacts.
- The illness is more severe if it occurs in teenagers, adults, or individuals with a weakened immune system.
- To prevent getting chicken pox, the vaccine is recommended.

Meningococcal C vaccine
- New this year for grade 9 students. BC already offers this vaccine to 1-year-olds and grade 6 students.
- Risk of meningitis is highest among children under 1 year of age and peaks again between the ages of 15–19 years.
- There are 35–50 cases reported in BC each year.
- To avoid serious problems from this infection, it is recommended that infants and teens have this vaccination.

Influenza vaccine
- This new program seeks to vaccinate children 6–23 months, plus all household contacts and childcare providers of children aged 0–23 months and women in the third trimester of pregnancy.
- This program started in October 2004.
- This immunization is recommended by the National Advisory Committee on Immunization.
- Each year, many young people are hospitalized for influenza.

IMMUNIZATION SCHEDULE FOR CHILDREN

2, 4, and 6 months
- ➠ Diphtheria
  Pertussis
  Tetanus
  Polio
  Haemophilus influenza Type B
- ➠ Hepatitis B
- ➠ Pneumococcal conjugate

6–23 months
- ➠ Influenza (2 doses) (during flu season only)

12 months
- ➠ Measles
  Mumps
  Rubella
- ➠ Varicella
- ➠ Meningococcal C

18 months
- ➠ Diphtheria
  Pertussis
  Tetanus
  Polio
  Haemophilus Influenza Type B
- ➠ Measles
  Mumps
  Rubella
- ➠ Pneumococcal conjugate

Kindergarten
- ➠ Diphtheria
  Pertussis
  Tetanus
  Polio
- ➠ Varicella*

Grade 6
(These vaccines are necessary only if the student has not previously had the vaccination.)
- ➠ Hepatitis B
- ➠ Varicella*
- ➠ Meningococcal C

Grade 9
- ➠ Diphtheria
  Pertussis
  Tetanus
- ➠ Meningococcal C

➠ represents one injection.
* Varicella is given *only* if the child has had no history of the disease or if he or she has not already received the vaccination.

Useful web sites
- BC Health Files www.bchealthguide.org/healthfiles/index.stm
- Canadian Paediatric Society: www.caringforkids.cps.ca
- Health Canada www.hc-sc.gc.ca/english/iyh/medical/childhood_imm.html

—Jill Rhynard
Interior Health Authority