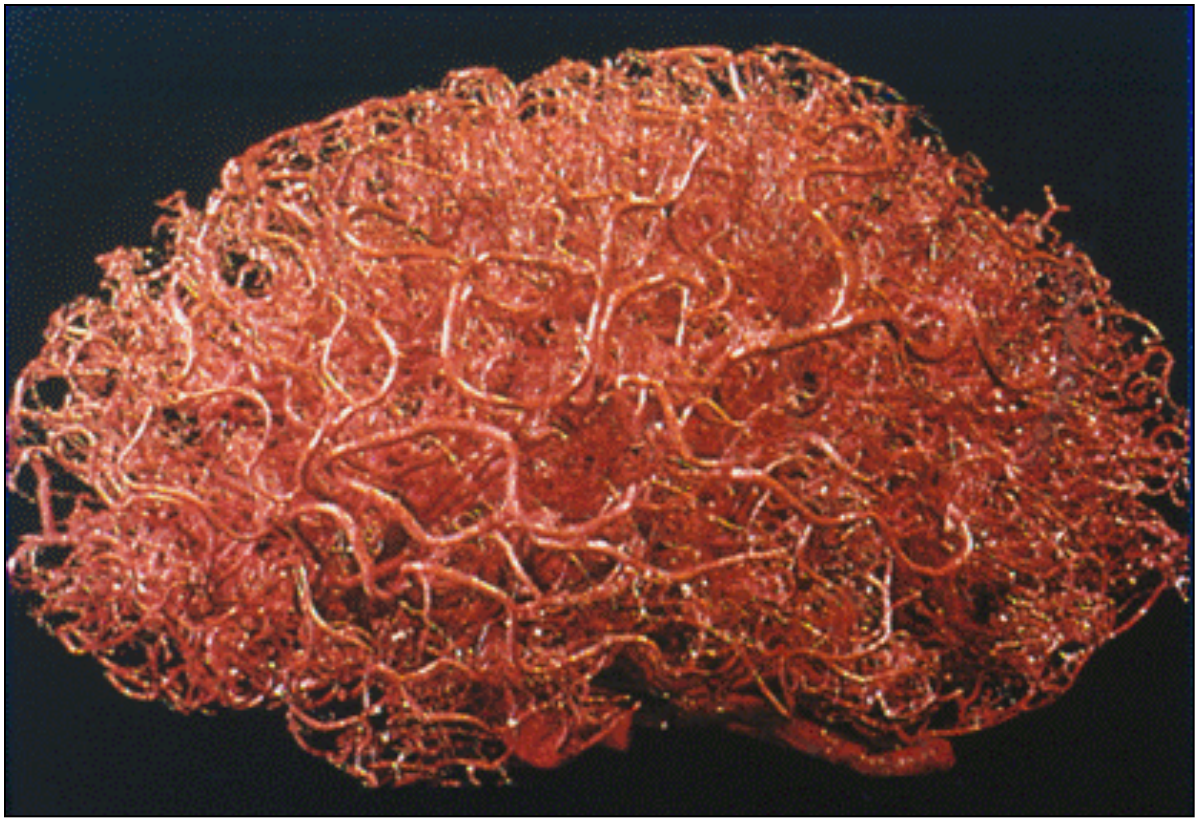
Mot de passe des 5 et 6 juin 2014 : maladie506
Password, June 5 & 6, 2014 : maladie506

# Les maladies vasculaires cérébrales



Zlokovic et Apuzzo. Neurosurgery 1998; 43(4): 877-78
cité sur http://www.ohsu.edu/bbb/forprof_program.html

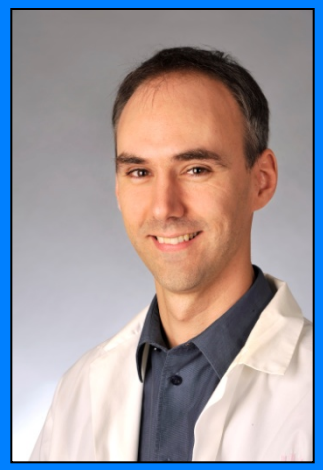
## Centre Mont-Royal, 5 juin 2014


## Dr Yan Deschaintre

Université de Montréal

YD

# Présentateur



- Dr Yan Deschaintre
  - Formé à l'Université de Montréal (1995-2005)
  - Fellowship en troubles cognitifs vasculaires avec Pr Pasquier à Lille (2005-2007)
  - Neurologue au centre des maladies vasculaires cérébrales du CHUM (depuis 2007)


YD

# Conflits d'intérêts potentiels

- **Déclarations des 2 dernières années**
  - **A participé à des comités aviseurs pour Bayer (Xarelto – rivaroxaban)**
  - **A été conférencier pour**
    - **Bayer (Xarelto – rivaroxaban)**
    - **Boehringer-Ingelheim (Pradaxa – dabigatran)**
    - **Novartis (Exelon – rivastigmine)**
    - **Pfizer (Aricept – donépézil)**

http://images.lpcdn.ca/641x427/201210/16/600034-juge-france-charbonneau.jpg

# Objectifs

- Définir, identifier et prendre en charge l'ICT/ AVC
- Employer les pratiques optimales d'évaluation et de prise en charge du patient avec AVC en phase aiguë
- Reconnaître les thérapies et autres options destinées à réduire les risques d'AVC

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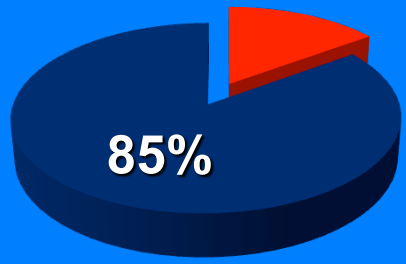
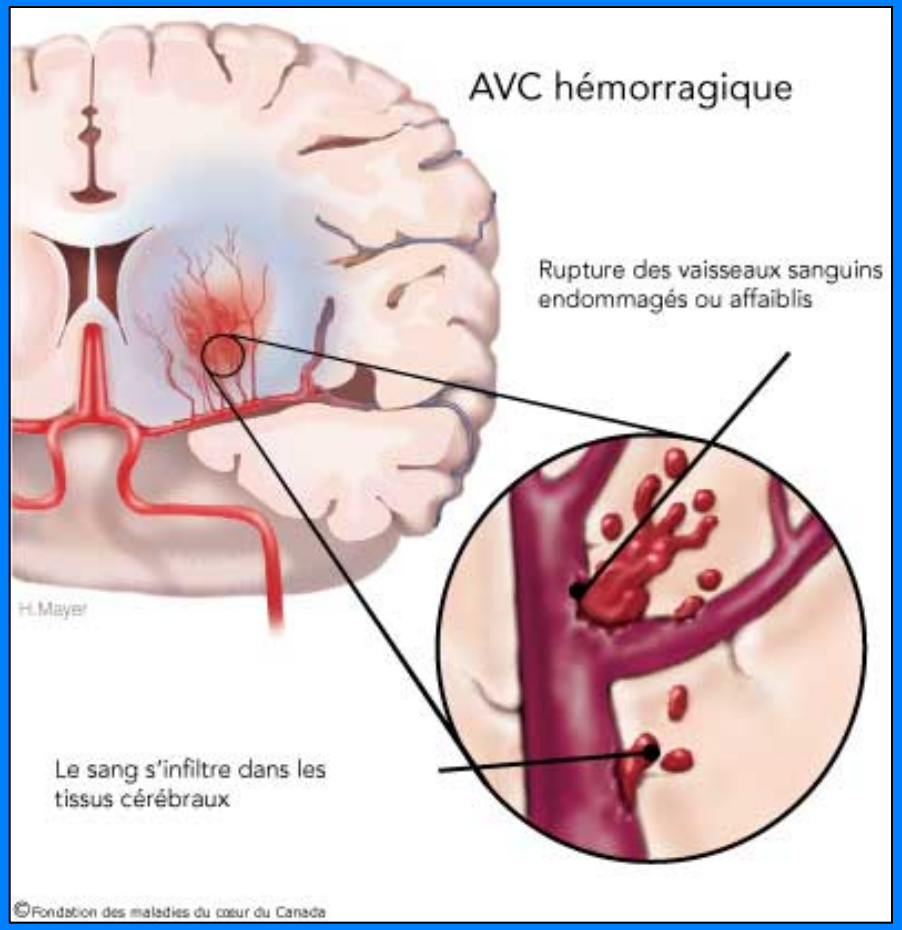
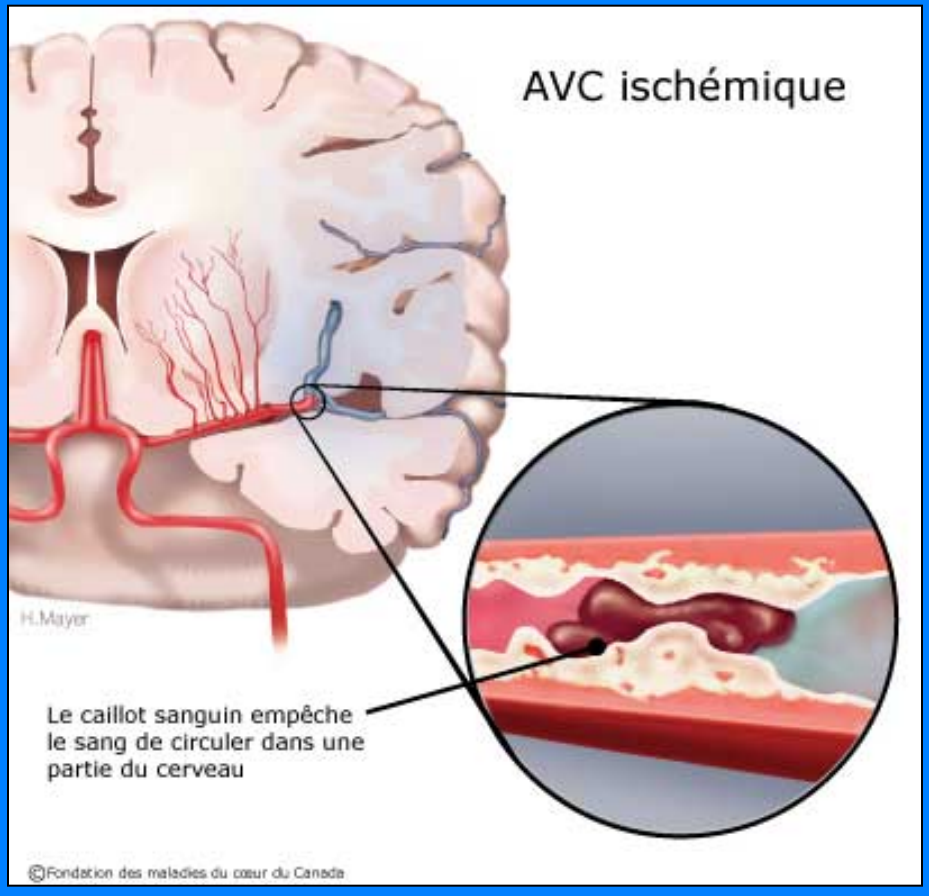
YD

# Hémorragie *vs* ischémie



YD

# Caractéristiques cliniques d'un AVC ischémique

- **Début soudain des signes et symptômes**
  **(scénario fréquent: symptômes présents au réveil donc heure exacte du début inconnue)**
- **Maximum à l'installation**
  **(ou évolution sur <24h si fosse postérieure)**
- **Signes focaux qui reflètent le territoire vasculaire impliqué**

YD

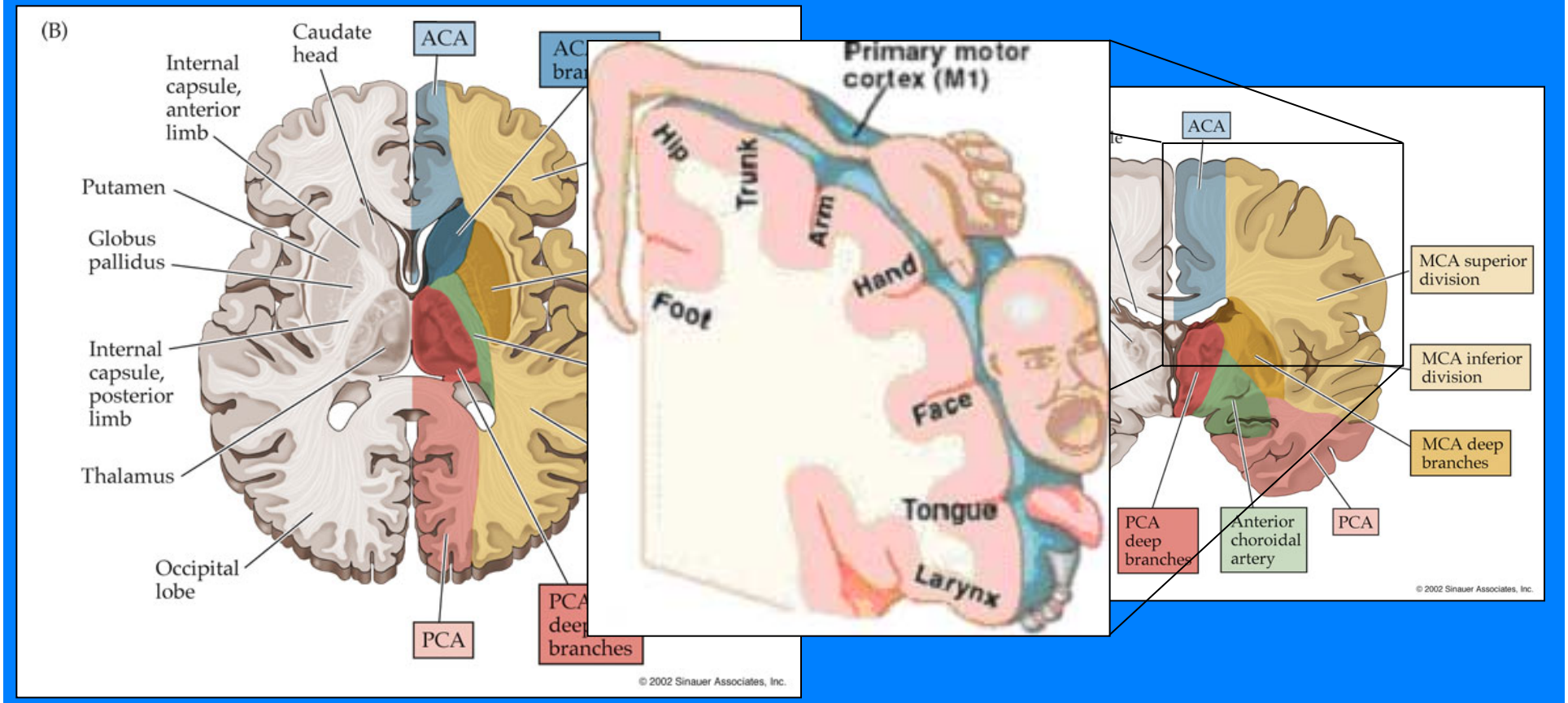
# "Nouvelle" définition de l'ICT (ischémie cérébrale transitoire)

- Bref épisode de dysfonction neurologique
  - Avec symptômes cliniques durant typiquement < 1h
- Causé par une ischémie focale du cerveau ou de l'œil
- Sans évidence d'infarctus

NEJM 2002; 347(21): 1713

YD

# Déficit brachio-facial de l'AVC sylvien




Blumenfeld. Neuroanatomy through clinical cases.

YD

**Tableau 3**

# Atteinte vestibulaire périphérique ou centrale

| Périphérique | Centrale |
|---|---|
| Complète :<br>• Vertige<br>• Nystagmus (horizonto-rotatoire)<br>• Atteinte du réflexe vestibulo-oculaire<br>• Instabilité posturale | Incomplète |
| « Congruente »<br>(pointe toujours vers le même côté atteint) | « Incongruente »<br>(direction variable) |
| Acouphènes / surdité possible | Surdité rare |
| Pas d'autre signe neurologique | Autres signes… |

Deschaintre. Clinicien Plus mai 2012: 63-66

YD

# Signes accompagnateurs de l'AVC de la circulation post.

- **Hémianopsie**
  **(cortex occipital – circulation postérieure)**
- **Ophtalmoplégie / diplopie**
- **Hémiparesthésie / hémiparésie**
- **Dysarthrie, dysphagie**
- **Ataxie / dysmétrie**
  **(instabilité posturale et déviation les bras tendus possible avec atteinte périphérique)**

# “Imitateurs” à considérer

- Lésions cérébrales
  - Hémorragie intra-crânienne
  - Tumeur
- Dysfonctions transitoires
  - Intoxication
  - Désordre métabolique (hypoglycémie)
  - Convulsion et paralysie de Todd
  - Migraine avec aura
- Autres
  - Atteinte périphérique
  - Somatisation / anxiété
  - …

http://blogducoeur.free.fr/images/2008/aout/cameleon.jpg


YD
Prise en charge

YD

# Time is brain!

# Considérer la thrombolyse IV

- Indications
  - AVC ischémique < 3h (< 4½h)
    - Début bien déterminé ou
    - "Dernière fois vu normal"
  - Déficit neurologique significatif
    - Mesurable sur l'échelle NIHSS
    - Incapacitant pour le patient

YD

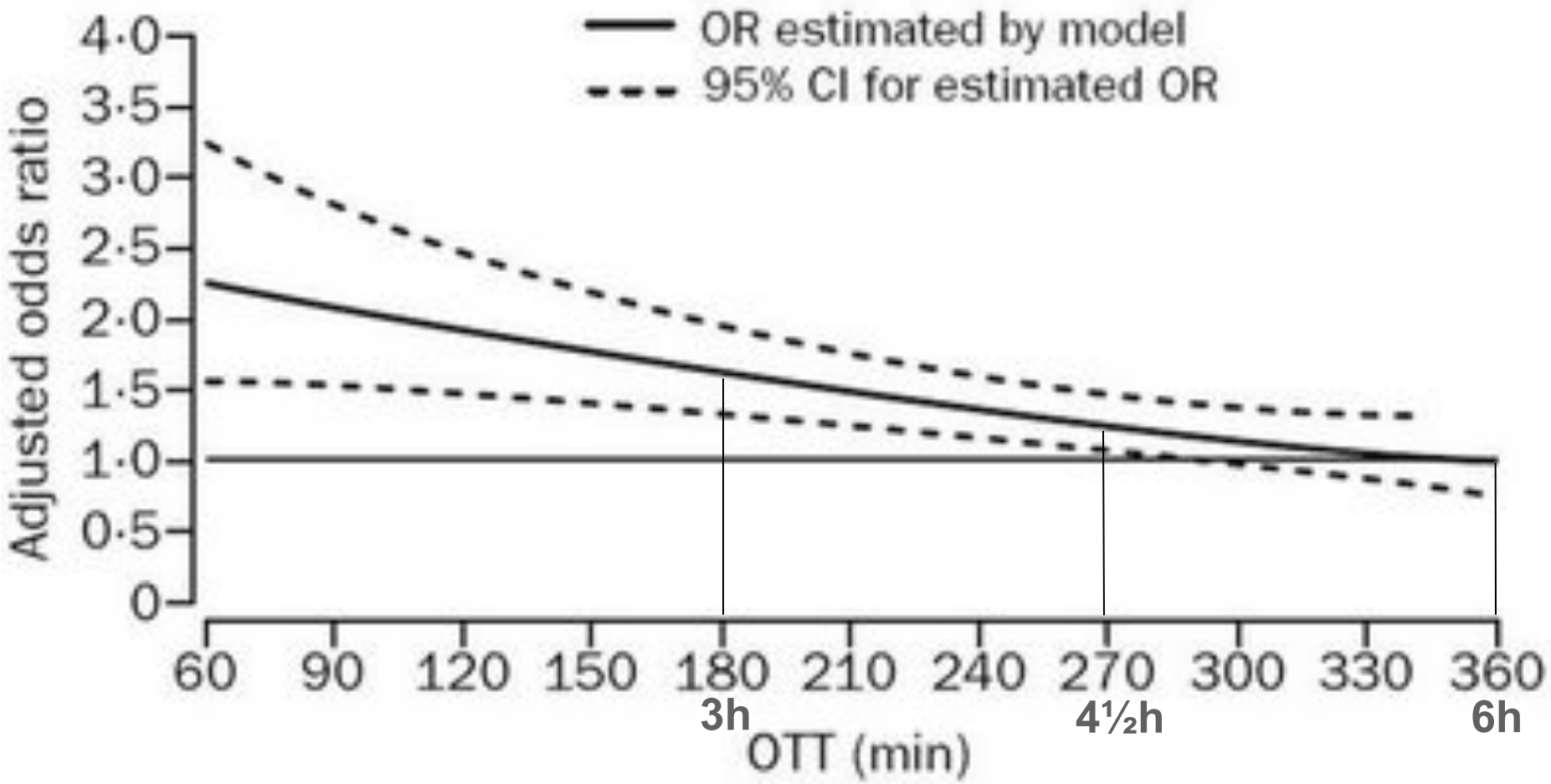
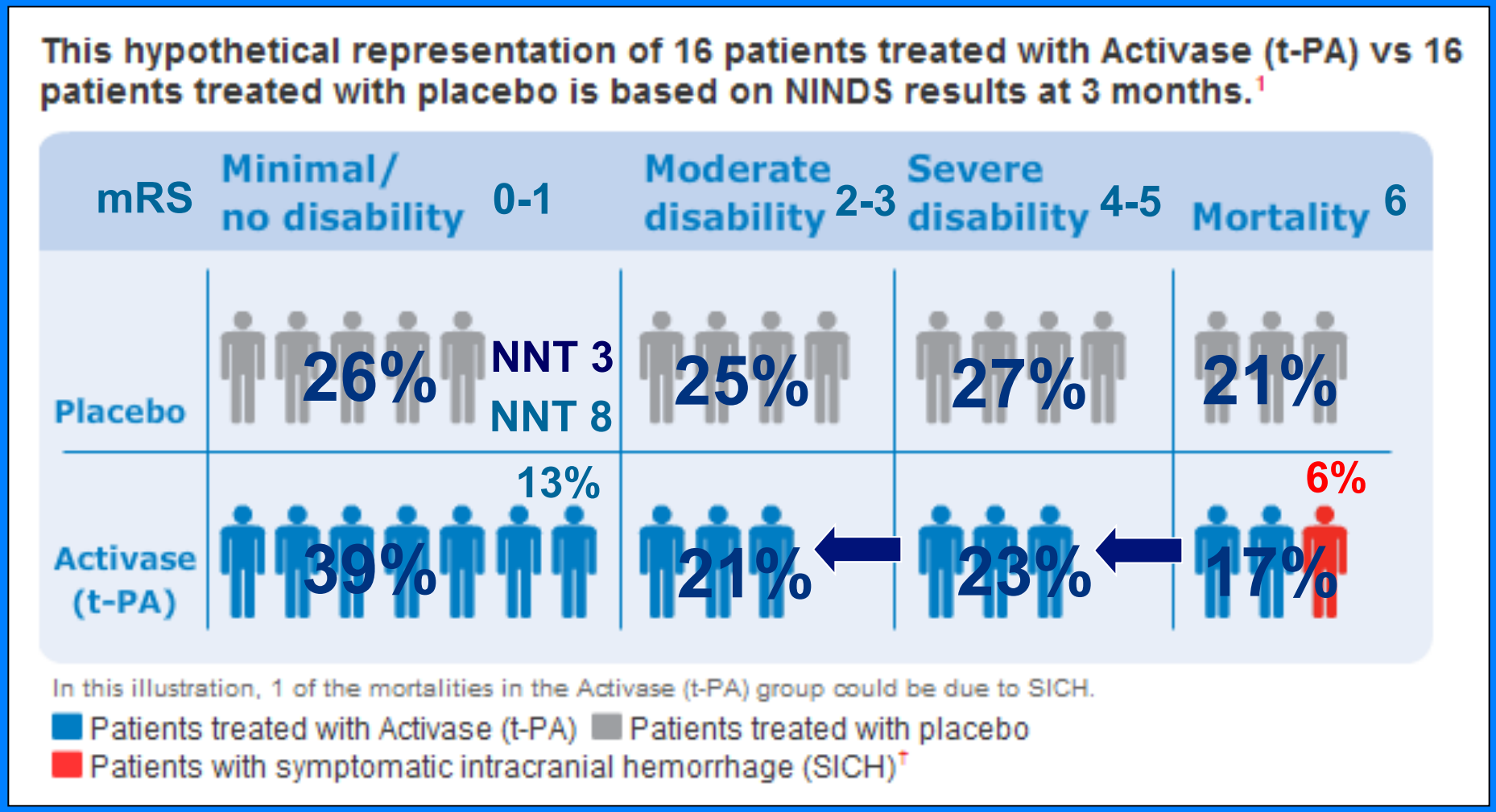



Figure 3: **Model estimating odds ratio for favourable outcome at 3 months in rt-PA-treated patients compared with controls by OTT**

Hacke et al. Lancet 2004; 363(9411): 768-74

YD

# Bénéfice de la thrombolyse IV




NEJM 1995; 333: 1581-7 et Neurology 2003; 60(Suppl 1): A427-428

# Équipe neurovasculaire du CHUM YD

# 24/7 (514) 221-0104

YD

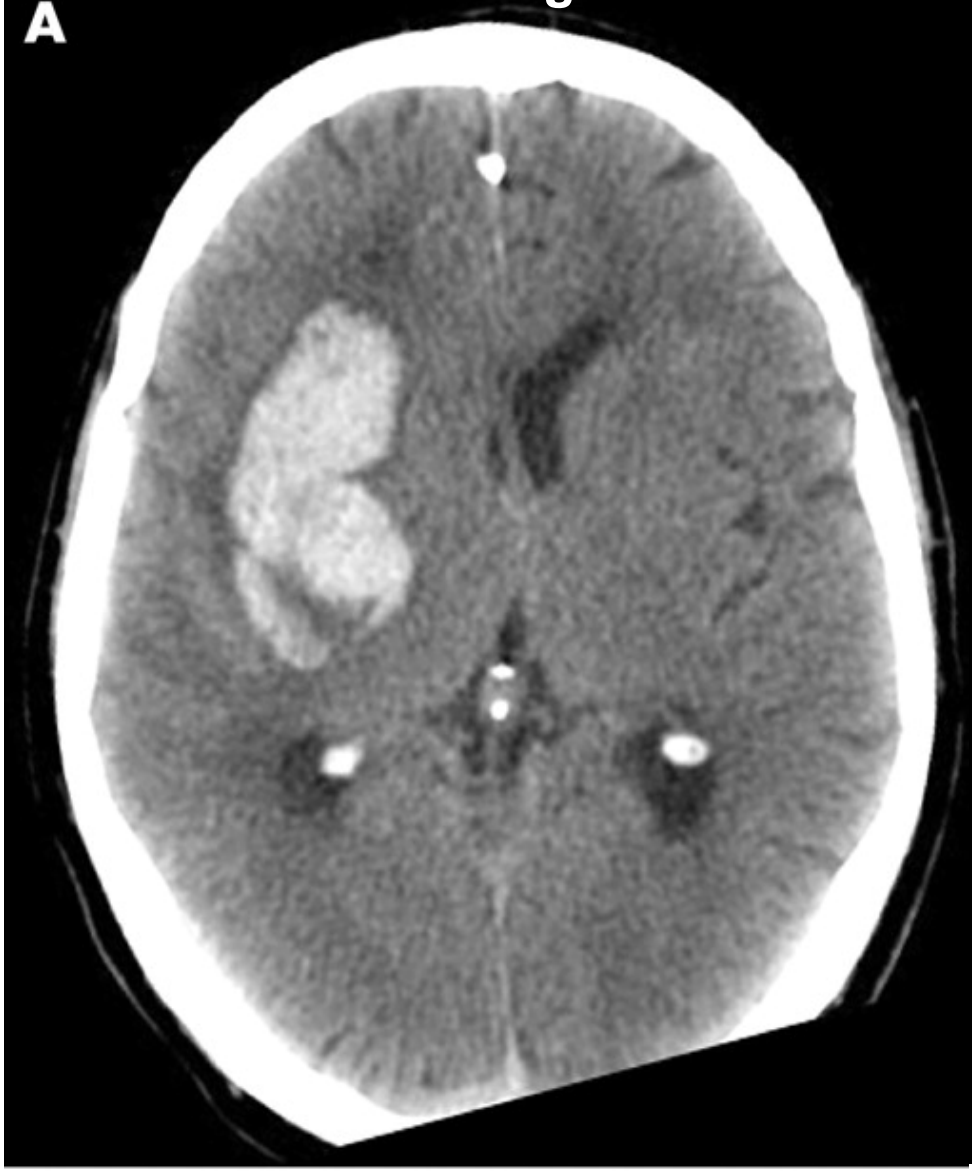
# Obtenir une imagerie cérébrale


http://en.wikipedia.org/wiki/Ct_scan#History

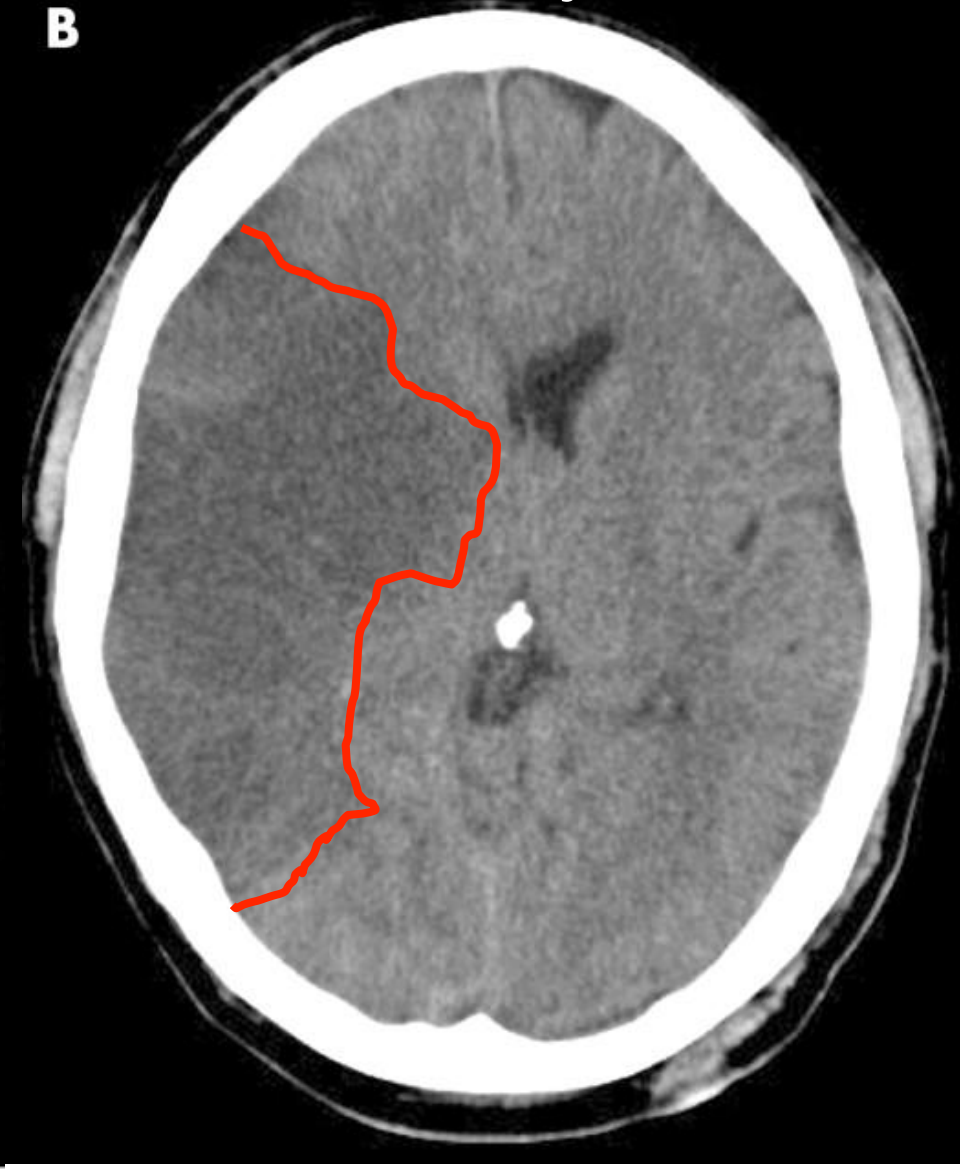
YD

# Contre-indications au rtPA

Hémorragie

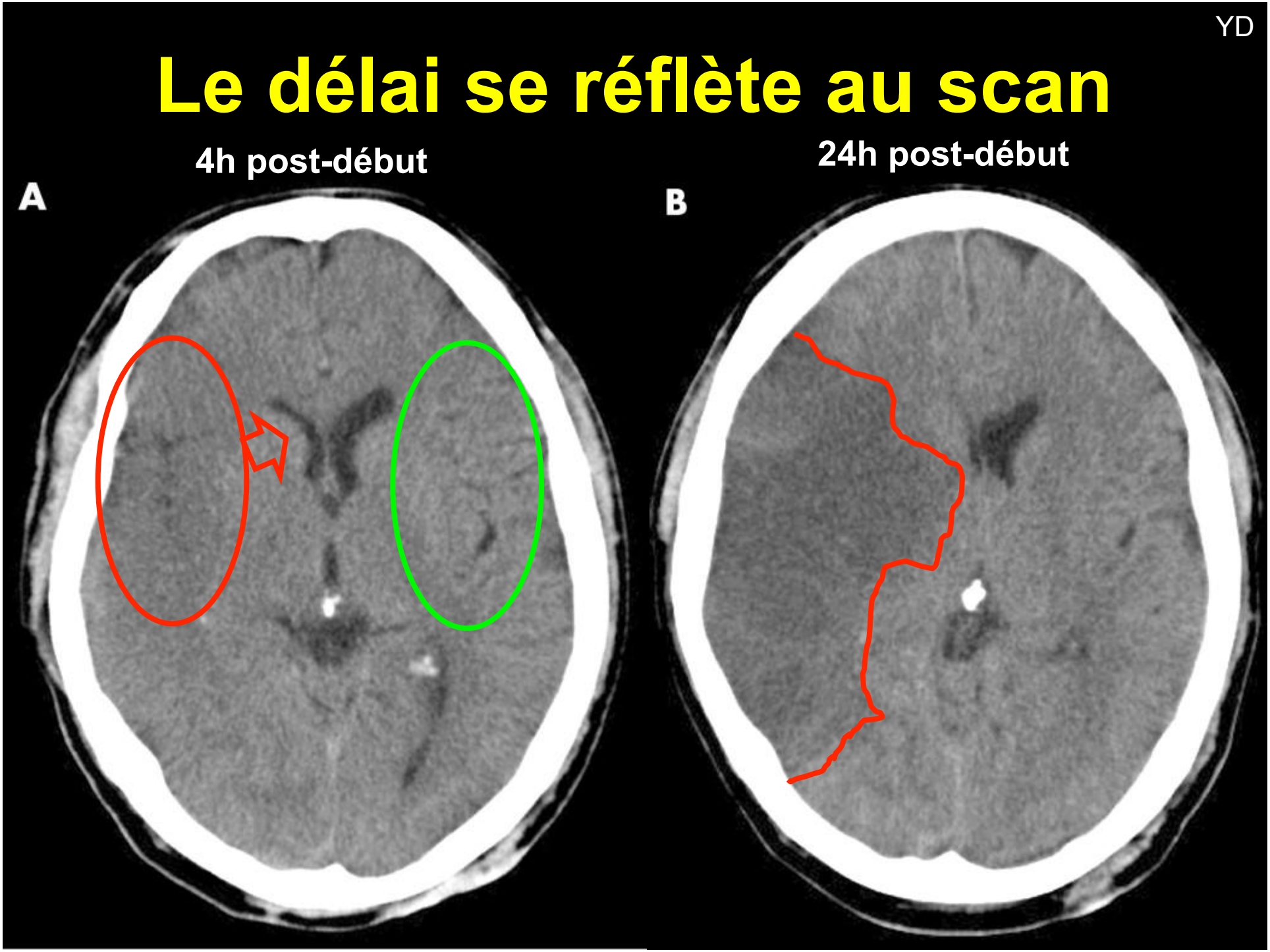



AVC étendu déjà évident




YD

# Le délai se réflète au scan

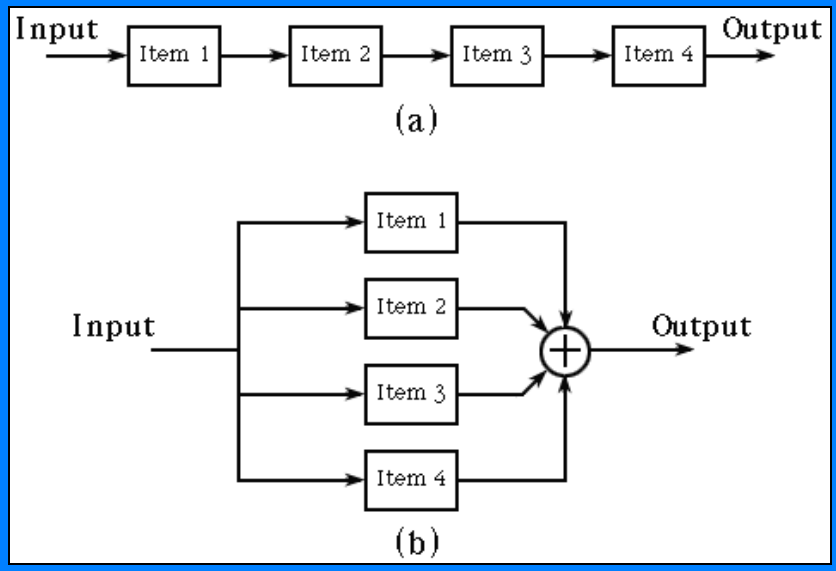


YD

# Prise en charge urgente

- Considérer rtPA
- Obtenir imagerie

- A-B-C
- Anamnèse
- Examen neurologique (NIHSS)
- Labos de base




**En série *vs* en parallèle**

http://www.funrcboats.com/seriesvparallel.htm

# Airway - Breathing - Circulation

- Tête de lit à 30°
- Hygiène buccale
- NPO ad évaluation de la dysphagie
- Viser TA
  - ≤ 220/120 en tout temps
  - ≤ 185/110 si thrombolyse
  - ≤ $160_{sys}$ si hémorragique

YD

# Labos de base

- Prise de sang
  - FSC (cross-match)
  - PTT, INR (et temps de thrombine)
  - Glycémie, $E^+$, créatinine
  - Troponine
- ECG
- (Rx poumons)

http://actumed.ma/2011/10/13/une-prise-de-sang-pour-mesurer-votre-esperance-de-vie/

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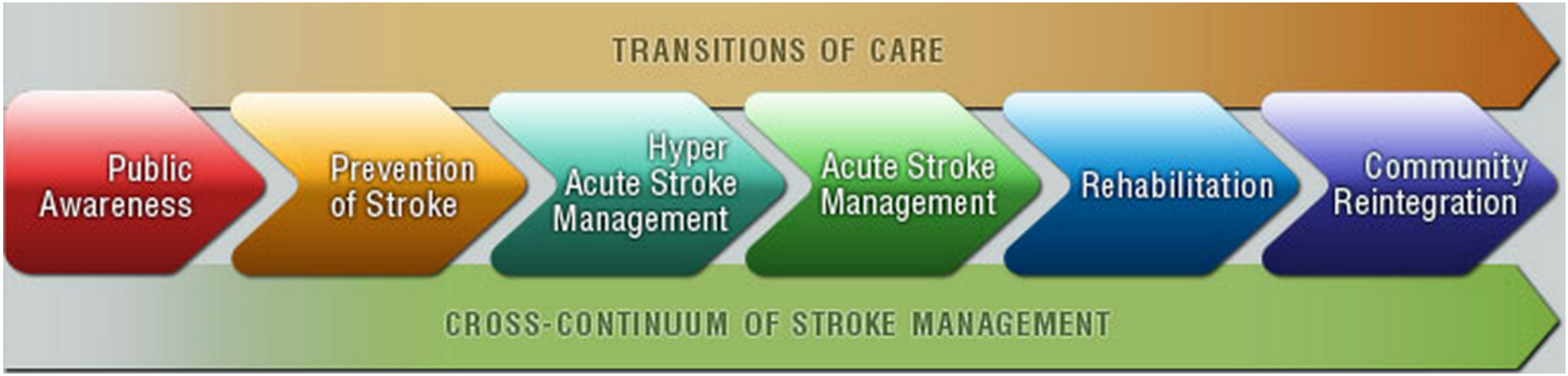
YD

# Canadian Best Practice Recommendations for Stroke Care



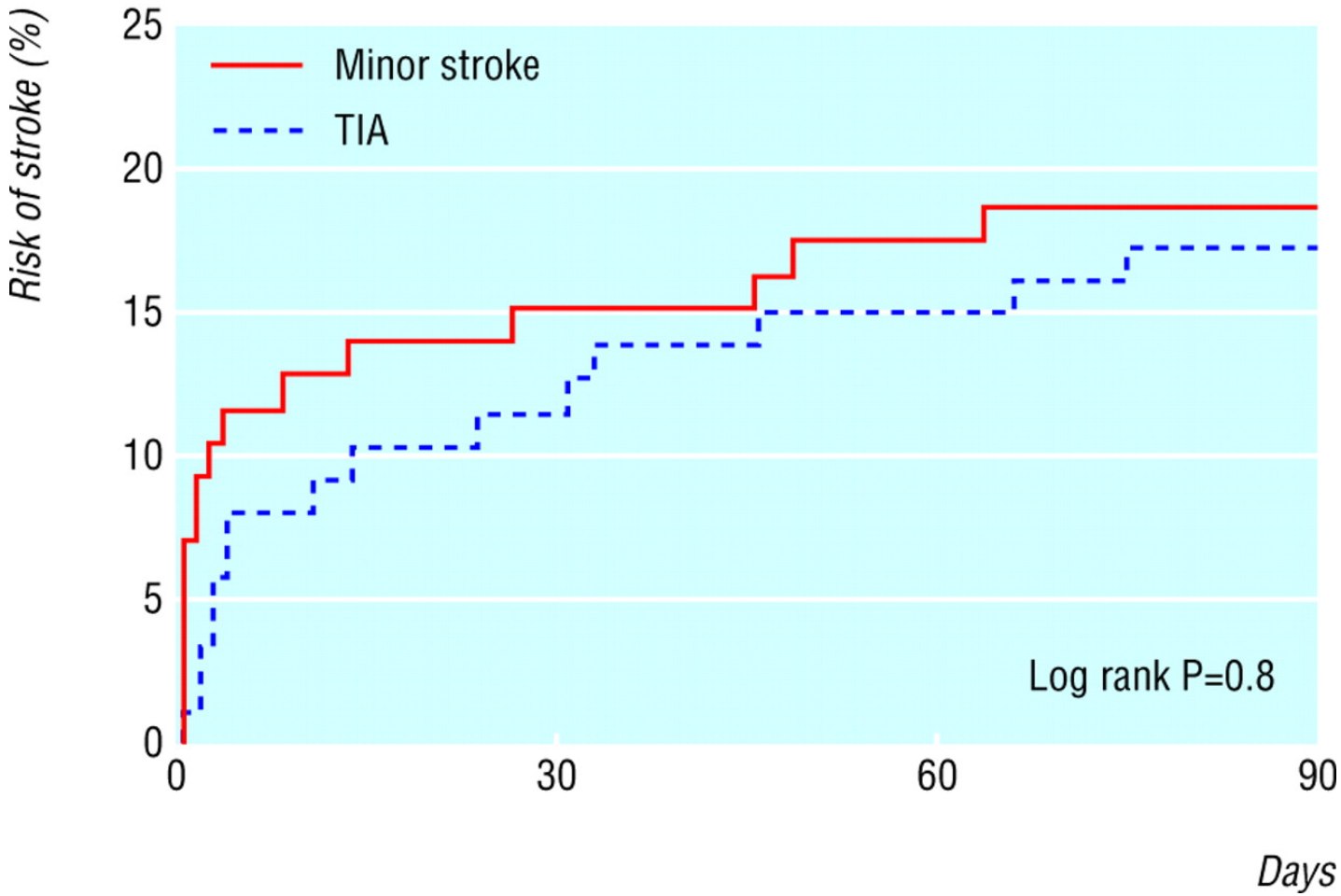

http://www.strokebestpractices.ca/

# Rapidité de prise en charge

- ***Immédiate*** **– à l'hôpital**
  - **Déficit incapacitant persistant**
  - **Patient jugé à haut risque**
  - **Survenue depuis <48h**
- **En-dedans de 24h**
  - **Survenue depuis >2 jours mais <2 semaines**
- **Généralement en-dedans d'un mois**
  - **Survenue depuis >2 semaines ou symptômes sensitifs isolés à faible risque**

YD

# Risque de récidive après un ICT / AVC mineur




Coull et al BMJ 2004; 328: 326

YD

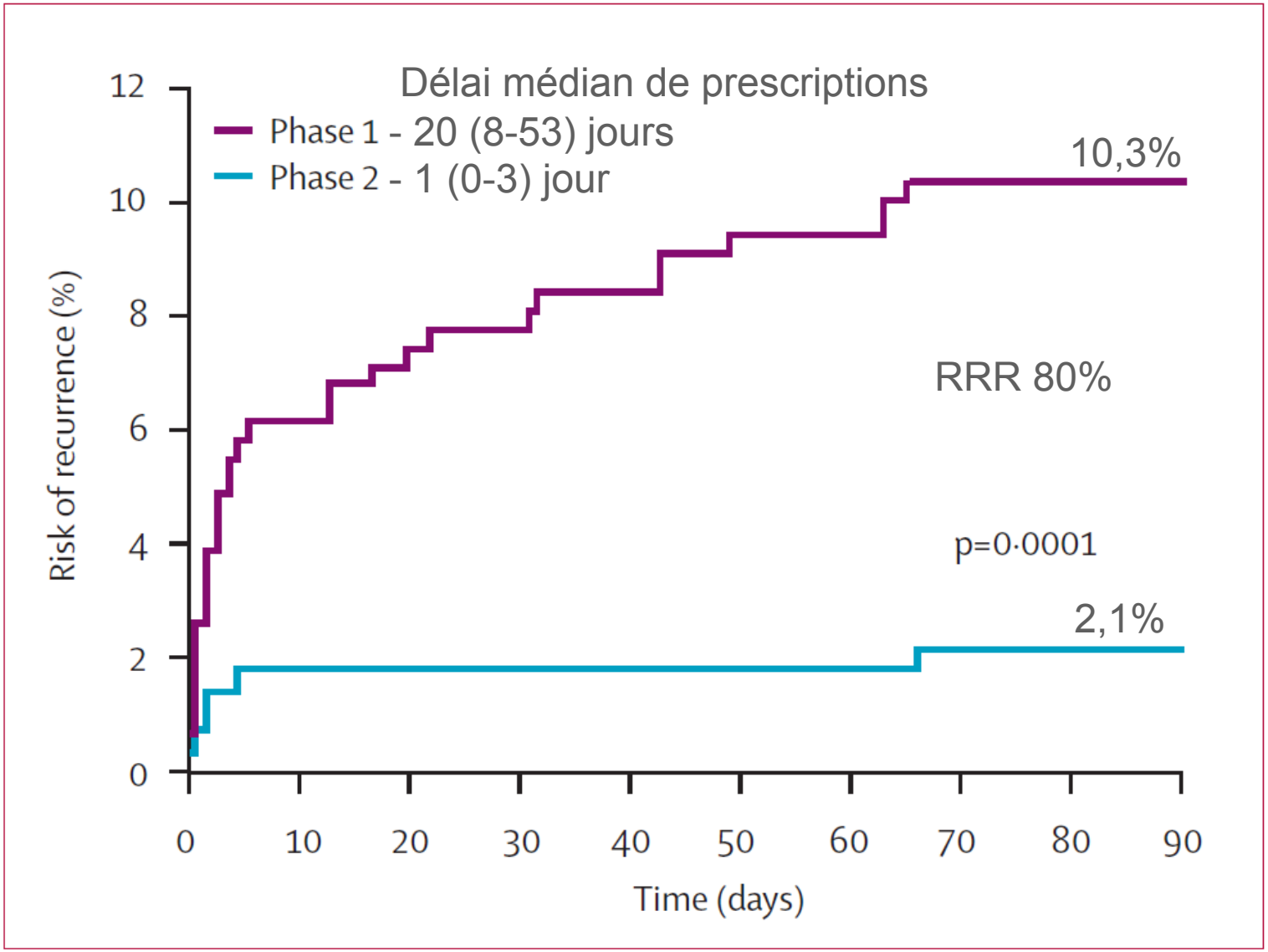



***Figure 2:*** **Risk of recurrent stroke after first seeking medical attention in all patients with TIA or stroke who were referred to the study clinic**

Rothwell et al. EXPRESS study. Lancet 2007; 370: 1432-42

# Échelle ABCD$^2$

- Âge ≥ 60 ans (1 point)
- Blood pressure ≥ 140 / 90 mmHg (1 point)
- Clinique
  - Faiblesse unilatérale (2 points)
  - Trouble du langage isolé (1 point)
  - Autres symptômes (0 point)
- Durée
  - ≥ 60 minutes (2 points)
  - 10-59 minutes (1 point)
  - < 10 minutes (0 point)
- Diabète (1 point)

Johnston et al. Lancet 2007; 369(9558): 283-92

YD

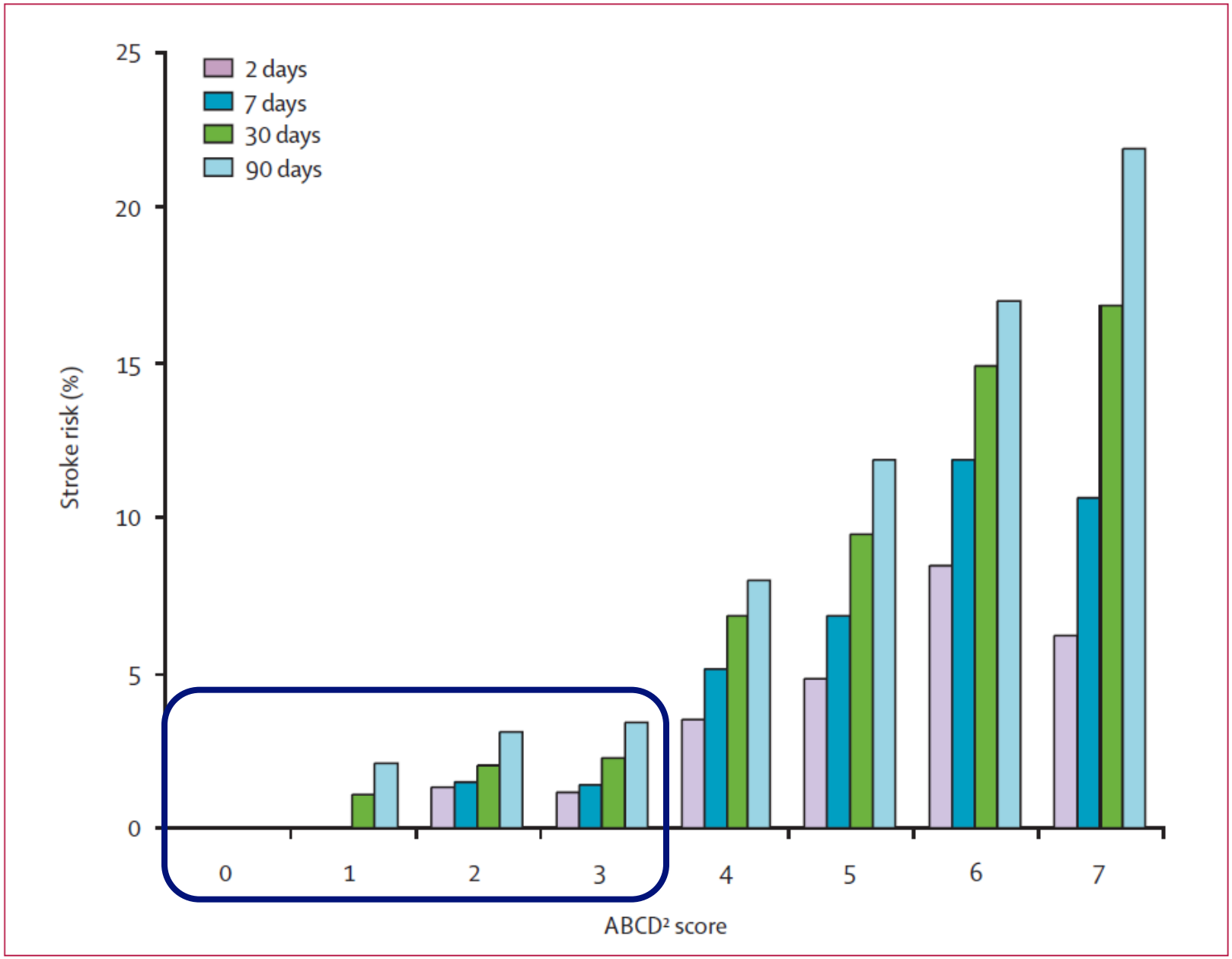



***Figure:*** **Short-term risk of stroke by ABCD² score in six groups combined (n=4799)**

Johnston et al. Lancet 2007; 369(9558): 283-92

YD

# Higher ABCD$^2$ Score Predicts Patients Most Likely to Have True Transient Ischemic Attack

S. Andrew Josephson, MD; Stephen Sidney, MD, MPH; Trinh N. Pham, MA;
Allan L. Bernstein, MD; S. Claiborne Johnston, MD, PhD

***Background and Purpose*—**Some patients diagnosed with transient ischemic attack (TIA) in the emergency department may actually have alternative diagnoses such as seizure, migraine, or other nonvascular spells. The ABCD$^2$ score has been shown to predict subsequent risk of stroke in patients with TIA diagnosed by emergency physicians, but perhaps high ABCD$^2$ scores simply separate those patients with true TIA from those with alternative diagnoses. We investigated this hypothesis in a cohort of patients with TIA identified in the emergency department whose records were reviewed by an expert neurologist.

***Methods*—**Among patients diagnosed by emergency physicians with TIA in 16 hospitals in the Kaiser-Permanente Medical Care Plan over a 1-year period ending February 1998 (before publication of prediction rules), an expert neurologist reviewed all records for those in which the diagnosis of TIA was considered questionable by a medical records analyst and determined whether the spell was likely to represent a true TIA. Subsequent strokes within 90 days were identified. ABCD$^2$ scores were calculated for all patients and 2-sided Cochrane-Armitage trend tests were used to assess subsequent risk of stroke.

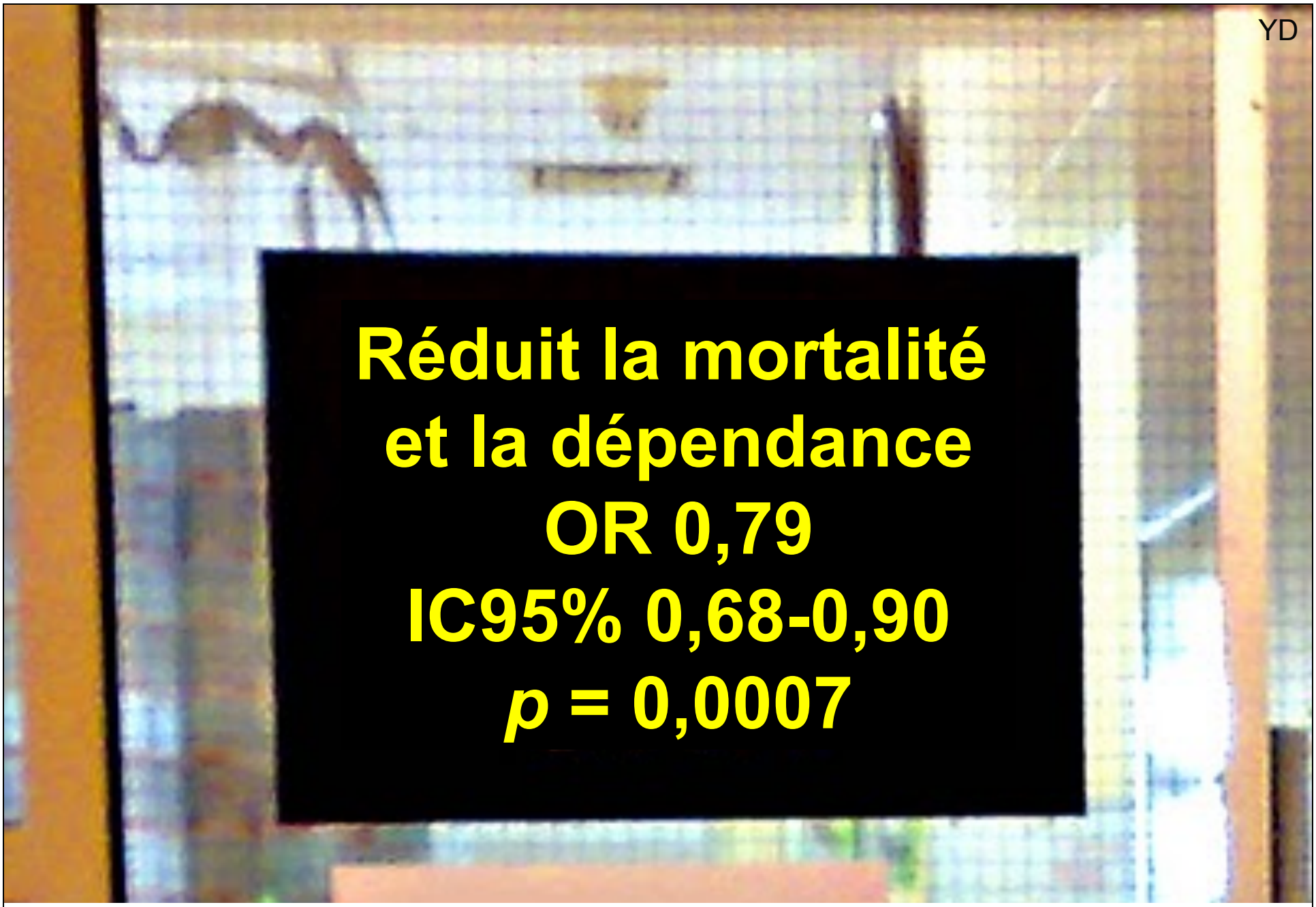
***Results*—**Of the 713 patients reviewed by the expert neurologist, 642 (90%) were judged to likely have experienced a true TIA. Ninety-day stroke risk was 24% (95% CI, 20% to 27%) in the group judged to have experienced a true TIA and 1.4% (0% to 7.6%) in the group judged to not have a true TIA ($P<0.0001$). ABCD$^2$ scores were higher in those judged to have a true TIA compared with others ($P=0.0001$). In the group judged to have a true TIA, 90-day stroke risk increased as ABCD$^2$ score increased ($P<0.0001$); there was no relationship between ABCD$^2$ score and stroke risk in those judged unlikely to have had a TIA ($P=0.73$).

***Conclusions*—**Among patients diagnosed by emergency department physicians with TIA, higher ABCD$^2$ score was associated with a greater likelihood that the diagnosis was confirmed on expert review. The predictive power of the ABCD$^2$ model is therefore partially explained by identification of those patients likely to have experienced a true TIA, an important aspect of the score when used by nonneurologists. However, higher ABCD$^2$ scores still remained predictive of 90-day stroke rate in the group of patients judged to have a true TIA by an expert neurologist. (***Stroke*.
2008;49:3096-3098.)**

YD

# Prise en charge à l'hôpital


Cochrane Review, CD000197
http://topnews.us/content/231467-stroke-unit-nobles-hospital-backs-service




Cochrane Review, CD000197
http://topnews.us/content/231467-stroke-unit-nobles-hospital-backs-service


http://calvin.med.uni-marburg.de/stpg/allgemein/klinaktuell/nr26/Sanierung_Neurologie.html

YD


Médecin
Pharmacien
Infirmière
Préposé

Ergothérapeute
Physiothérapeute
Orthophoniste
Nutritioniste
Psychologue
Travailleuse sociale

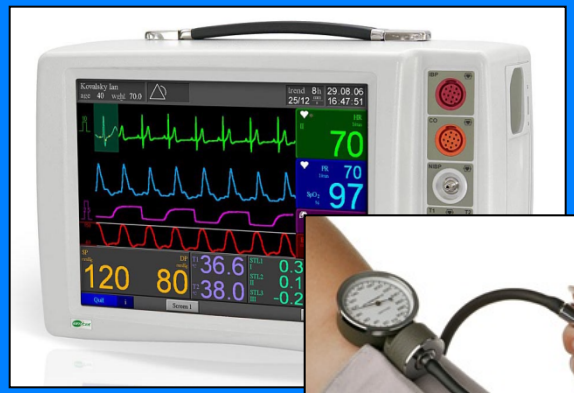
Organisation des soins
Protocoles

http://www.rwjuh.edu/news/stroke-center-award-05-26-2010.html

YD

# Contrôle des paramètres

Rythme cardiaque et oxymétrie




Température

Glycémie

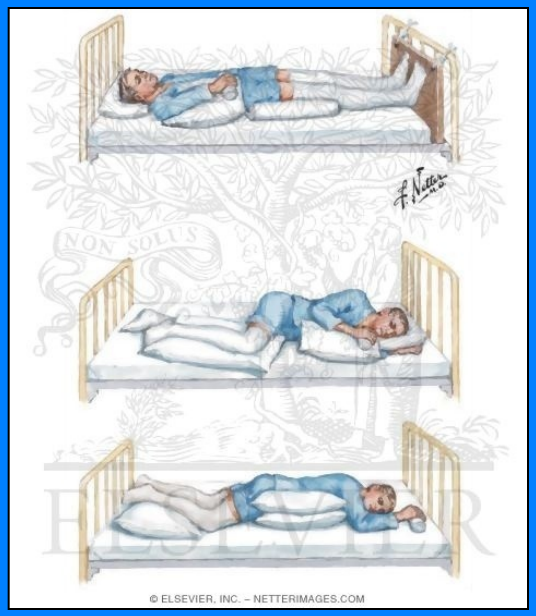
Tension artérielle


Hydratation

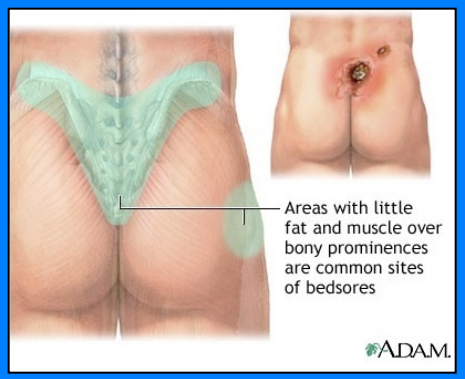
http://www.emtel.com.pl/tl_files/emtel/img/FX2000P/FX2000P%2003.JPG
http://highbloodpressuremed.blogspot.ca/
http://fr.123rf.com/photo_6960519_pres-de-jeune-homme-couchee-dans-son-lit-temperature-et-avoir-la-grippe.html
http://en.wikipedia.org/wiki/Intravenous_therapy https://www.drlowe.com/emailnewsletter/9.12.10/painless.blood.sugar.testing.print.htm

YD

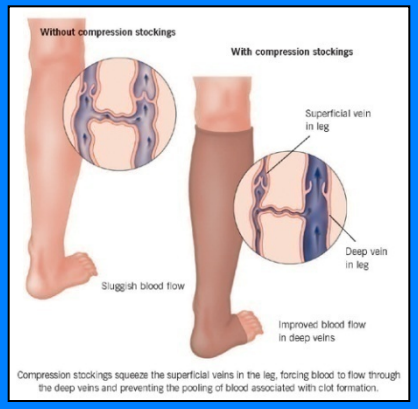
# Prévention des complications



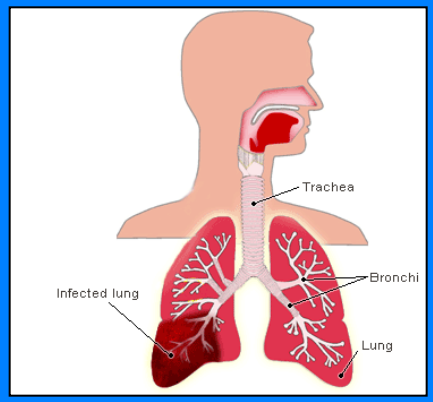

**Positionnement adapté**
**Plaies de lit**




**Mobilisation précoce**
**Thrombophlébite**




**Diète adaptée**
**Pneumonie d'aspiration**



# Réadaptation précoce


YD
« Il ne suffit pas de savoir, il faut aussi appliquer »
Goethe
1749-1832
http://100qualityquotes.wordpress.com/
Sponsored by Imarpress and B.I.D.

YD

# Implementation of evidence-based treatment protocols to manage fever, hyperglycaemia, and swallowing dysfunction in acute stroke (QASC): a cluster randomised controlled trial

*Sandy Middleton, Patrick McElduff, Jeanette Ward, Jeremy M Grimshaw, Simeon Dale, Catherine D'Este, Peta Drury, Rhonda Griffiths, N Wah Cheung, Clare Quinn, Malcolm Evans, Dominique Cadilhac, Christopher Levi, on behalf of the QASC Trialists Group*

## Summary

**Background** We assessed patient outcomes 90 days after hospital admission for stroke following a multidisciplinary intervention targeting evidence-based management of fever, hyperglycaemia, and swallowing dysfunction in acute stroke units (ASUs).

**Methods** In the Quality in Acute Stroke Care (QASC) study, a single-blind cluster randomised controlled trial, we randomised ASUs (clusters) in New South Wales, Australia, with immediate access to CT and on-site high dependency units, to intervention or control group. Patients were eligible if they spoke English, were aged 18 years or older, had had an ischaemic stroke or intracerebral haemorrhage, and presented within 48 h of onset of symptoms. Intervention ASUs received treatment protocols to manage fever, hyperglycaemia, and swallowing dysfunction with multidisciplinary team building workshops to address implementation barriers. Control ASUs received only an abridged version of existing guidelines. We recruited pre-intervention and post-intervention patient cohorts to compare 90-day death or dependency (modified Rankin scale [mRS] ≥2), functional dependency (Barthel index), and SF-36 physical and mental component summary scores. Research assistants, the statistician, and patients were masked to trial groups. All analyses were done by intention to treat. This trial is registered at the Australia New Zealand Clinical Trial Registry (ANZCTR), number ACTRN12608000563369.

**Findings** 19 ASUs were randomly assigned to intervention (n=10) or control (n=9). Of 6564 assessed for eligibility, 1696 patients' data were obtained (687 pre-intervention; 1009 post-intervention). Results showed that, irrespective of stroke severity, intervention ASU patients were significantly less likely to be dead or dependent (mRS ≥2) at 90 days than control ASU patients (236 [42%] of 558 patients in the intervention group *vs* 259 [58%] of 449 in the control group, p=0·002; number needed to treat 6·4; adjusted absolute difference 15·7% [95% CI 5·8–25·4]). They also had a better SF-36 mean physical component summary score (45·6 [SD 10·2] in the intervention group *vs* 42·5 [10·5] in the control group, p=0·002; adjusted absolute difference 3·4 [95% CI 1·2–5·5]) but no improvement was recorded in mortality (21 [4%] of 558 in intervention group and 24 [5%] of 451 in the control group, p=0·36), SF-36 mean mental component summary score (49·5 [10·9] in the intervention group *vs* 49·4 [10·6] in the control group, p=0·69) or functional dependency (Barthel Index ≥60: 487 [92%] of 532 patients *vs* 380 [90%] of 423 patients; p=0·44).

**Interpretation** Implementation of multidisciplinary supported evidence-based protocols initiated by nurses for the management of fever, hyperglycaemia, and swallowing dysfunction delivers better patient outcomes after discharge from stroke units. Our findings show the possibility to augment stroke unit care.

*Lancet* 2011; 378: 1699–706

YD

***Panel 2:*** Fever, sugar, swallowing (FeSS) intervention elements

**Clinical treatment protocols for FeSS management by nurses for first 72 h of acute stroke unit (ASU) care: key elements**

*Fever*

- Temperature monitored and charted every 4 h after admission to ASU for first 72 h.
- Temperature ≥37·5°C treated with paracetamol (intravenous, per rectum, or oral), unless clinically contraindicated.

*Sugar (hyperglycaemia)*

- Formal glucose measured (venous blood not finger prick) on admission to hospital or admission to the ASU.
- Finger-prick blood glucose on admission to ASU.
- Finger-prick glucose every 1–6 h for first 72 h following ASU admission depending on previous blood glucose value.
- On admission, if blood glucose between 8 mmol/L and 11 mmol/L and patient is diabetic, or between 8 mmol/L and 16 mmol/L and patient is not diabetic, start saline infusion for 6 h.
- If, at any time in first 48 h after admission, blood glucose ≥11 mmol/L and patient is diabetic, or blood glucose ≥16 mmol/L and patient is not diabetic, start insulin infusion.

*Swallowing*

- Nurses underwent an education programme about dysphagia screening, which consisted of all nurses attending an in-service given by the speech pathologist using a DVD prepared specifically for this study.
- Nurses underwent a competency assessment before being able to screen patients, consisting of a pre-education and post-education written knowledge test, and a clinical competency test, completed on three patients and assessed by a speech pathologist.
- Patients were screened with the ASSIST tool by either a nurse who passed the competency test or a speech pathologist within 24 h of admission to ASU; the result of the screening was clearly documented in the patient's medical record by use of a sticker.
- Patients who failed the swallowing screening were referred to a speech pathologist for a swallowing assessment.

Étude QASC (Quality in Acutre Stroke Care), Lancet 2011; 378: 1699-706

## Site-based education and support

- Two multidisciplinary team-building workshops to identify local barriers and enablers to implement the FeSS nurse-initiated treatment protocols.
- Two site-based educational outreach meetings consisting of a standardised education programme about the FeSS treatment protocols delivered by the project officer (SD); Microsoft Powerpoint slides were left with the ASU nurse educator to be delivered to those who did not attend the meetings.
- Engagement of local stroke unit coordinators through support and feedback. The Project Officer (SD) visited each intervention ASU every 6 weeks, sent three monthly proactive emails to each site, and also instigated scheduled telephone follow-up every 3 months; all acted as reminders. She also responded to any site-based request for support if needed. Newsletters were sent out yearly.

QASC, Lancet 2011; 378: 1699-706

# Résultats

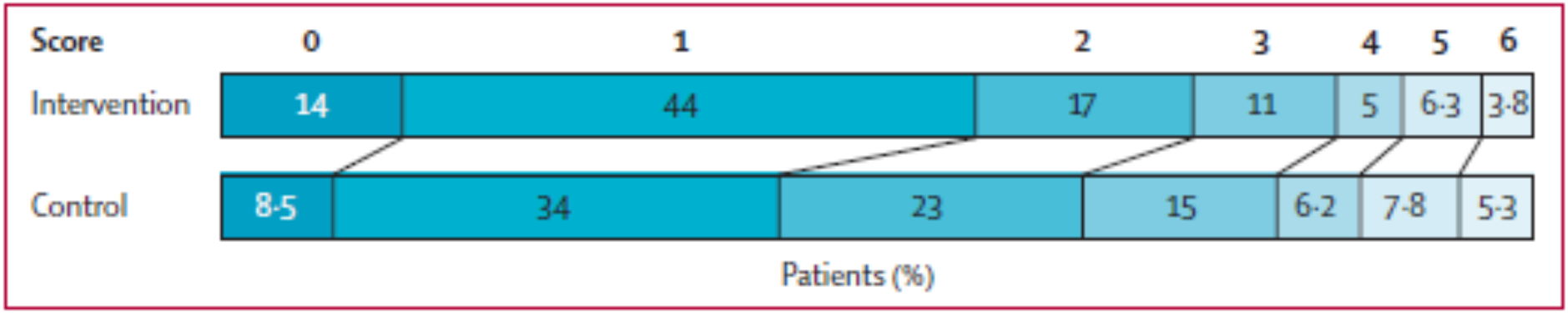



*Figure* 3: Distribution of 90-day modified Rankin scale*
*Percentages may not total to 100% due to rounding.

**mRS 0-1 58% *vs* 42% ; +16%, NNT 6,4**

QASC, Lancet 2011; 378: 1699-706

# Récapitulation

| | mRS 0-1 | % absolu | NNT |
|---|---|---|---|
| À la base | 26% | - | - |

# Récapitulation

| | mRS 0-1 | % absolu | NNT |
|---|---|---|---|
| À la base | 26% | - | - |
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| rtPA IV plus rapide | 4% par 15 min | - | 1 par 20 min |

YD

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| Unité AVC | | 18% | 6 |

YD

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| Unité AVC | | 18% | 6 |
| Protocole standardisé | 58% | 16% | 6,4 |

# Objectifs

- Définir, identifier et prendre en charge l'ICT/ AVC
- Employer les pratiques optimales d'évaluation et de prise en charge du patient avec AVC en phase aiguë
- **Reconnaître les thérapies et autres options destinées à réduire les risques d'AVC**

# Effet de la prévention 2$^{aire}$

| Traitement | RRR | NNT/an |
|---|---|---|
| Diète / habitudes de vie | 20-60% | ? |

Davis et Donnan. NEJM 2012; 366: 1914-22, Rothwell et al. Lancet 2007; 370(9596): 1432-42

# Effet de la prévention 2aire

| Traitement | RRR | NNT/an |
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| Anti-hypertenseurs | 28% | 97 |
| Statines | 16% | 220 |

Davis et Donnan. NEJM 2012; 366: 1914-22, Rothwell et al. Lancet 2007; 370(9596): 1432-42

YD

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Davis et Donnan. NEJM 2012; 366: 1914-22, Rothwell et al. Lancet 2007; 370(9596): 1432-42

YD

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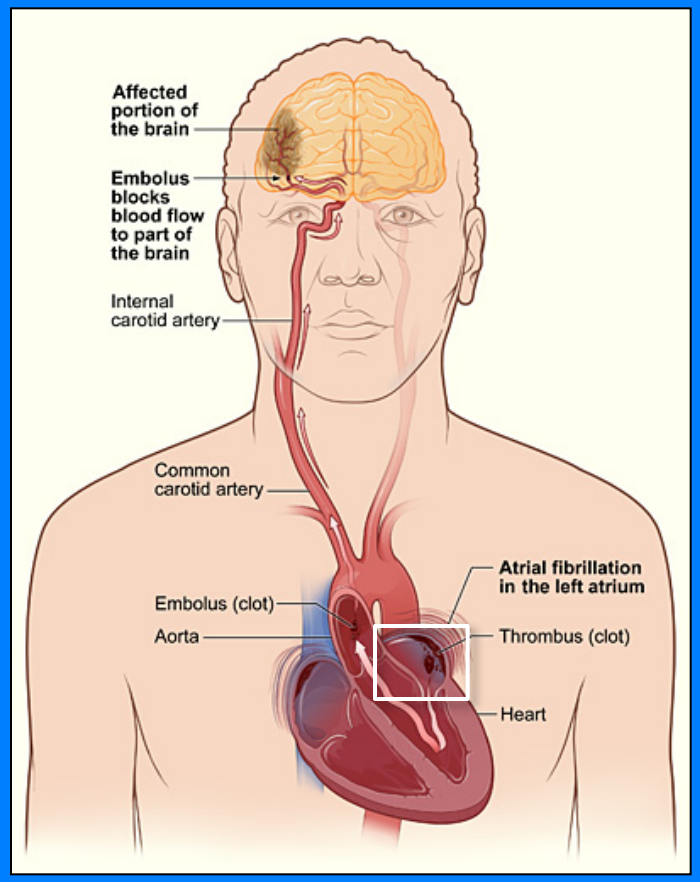
| Endartériectomie* | 65% | 9 |

Davis et Donnan. NEJM 2012; 366: 1914-22, Rothwell et al. Lancet 2007; 370(9596): 1432-42

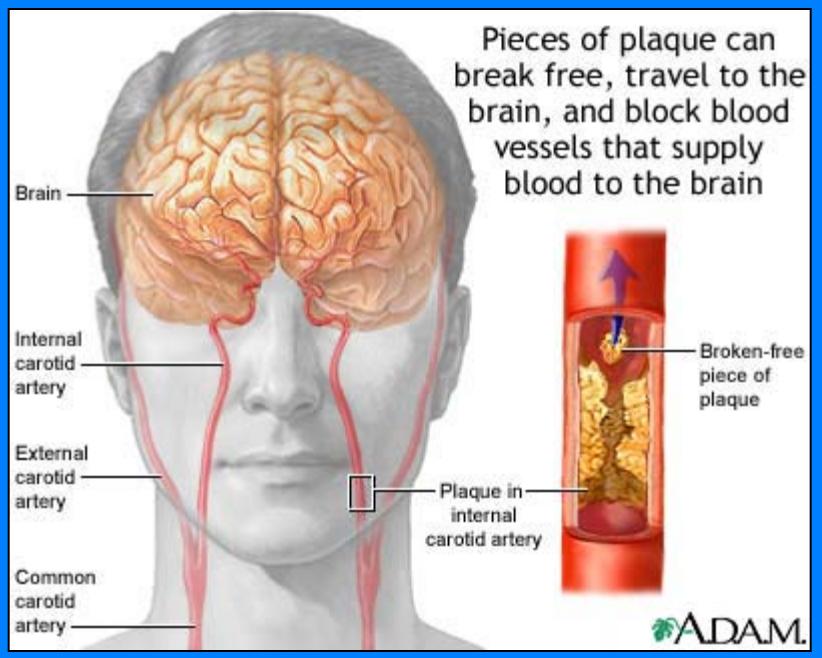
YD

# Deux cas particuliers

## Cardioembolie



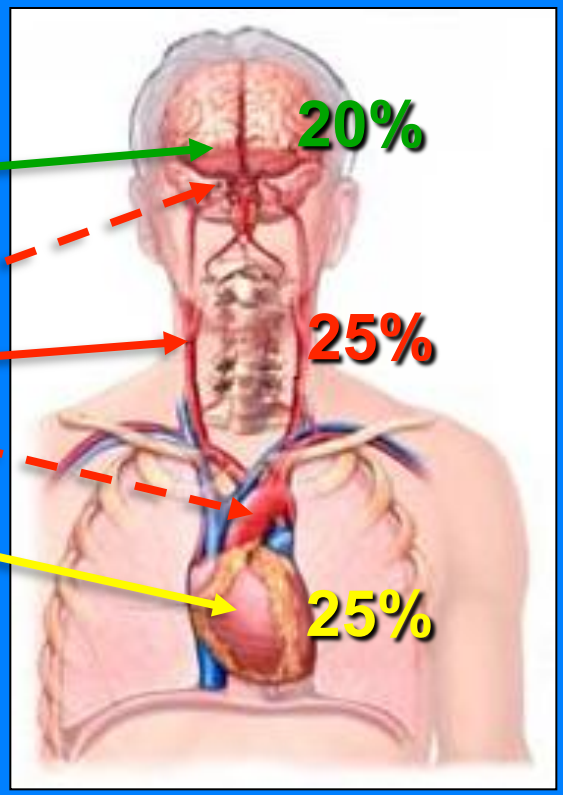

## Sténose carotidienne




http://www.nhlbi.nih.gov/health/dci/images/atrial_fib_stroke.jpg

# Identifier la cause

- Classification TOAST
  1. Artériolosclérose (lacunes)
  2. Athérosclérose
  3. Cardioembolie
  4. Autre étiologie déterminée 5%
  5. Étiologie indéterminée 25%




Stroke 1993; 24: 35-41
Stroke 2007; 38: 3225-29

# Risque d'AVC selon l'étiologie

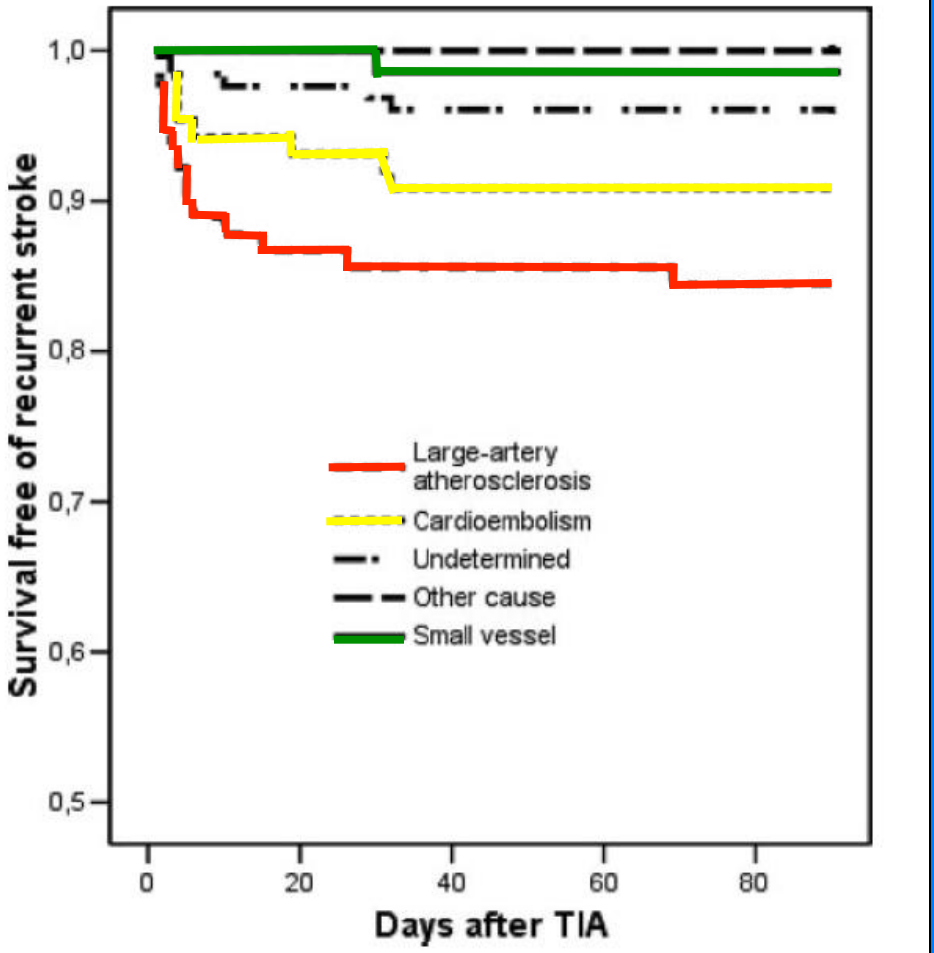



**Figure.** Observed percentage surviving free of recurrent stroke after index TIA among patients with different etiologies (Kaplan-Meier estimates). Patients with LAA had the highest risk of cerebral ischemic events (log-rank <0.001).

Stroke 2007; 38: 3225-29

# Bilan étiologique

- **Imagerie des vaisseaux du cou en ≤ 24h (doppler et/ou angioCT)**
- **Investigation cardiaque (Holter, ETT)**
- **Recherche des facteurs de risque**
  - **Hypertension, dyslipidémie, diabète**
  - **Apnée du sommeil**
- **Recherche de cause rare (bilan vasculitique et thrombophilique)**

YD

# Dépistage

http://blog.lpinnovations.com/Portals/31499/images/background%20screening-resized-600.jpg

# Dépression

- Dépistage pour tous
  - Un tiers des patients post-AVC sont déprimés en aigu (et 2/3 à la longue)
  - Diminue la récupération en réadaptation et augmente la mortalité
- « Attente attentive » si léger (2-4 sem.)
- Traitement si majeure / persistante / ou si s'aggrave
  - Sous diagnotiquée et sous traitée

http://tribune.com.pk/story/528483/symptoms-do-not-ignore-depression-in-hepatitis-c-patients/
http://www.strokebestpractices.ca/index.php/cognition-mood/post-stroke-depression/?lang=en

YD

# Fluoxetine for motor recovery after acute ischaemic stroke (FLAME): a randomised placebo-controlled trial

François Chollet, Jean Tardy, Jean-François Albucher, Claire Thalamas, Emilie Berard, Catherine Lamy, Yannick Bejot, Sandrine Deltour, Assia Jaillard, Philippe Niclot, Benoit Guillon, Thierry Moulin, Philippe Marque, Jérémie Pariente, Catherine Arnaud, Isabelle Loubinoux

## Summary

**Background** Hemiplegia and hemiparesis are the most common deficits caused by stroke. A few small clinical trials suggest that fluoxetine enhances motor recovery but its clinical efficacy is unknown. We therefore aimed to investigate whether fluoxetine would enhance motor recovery if given soon after an ischaemic stroke to patients who have motor deficits.

**Methods** In this double-blind, placebo-controlled trial, patients from nine stroke centres in France who had ischaemic stroke and hemiplegia or hemiparesis, had Fugl-Meyer motor scale (FMMS) scores of 55 or less, and were aged between 18 years and 85 years were eligible for inclusion. Patients were randomly assigned, using a computer random-number generator, in a 1:1 ratio to fluoxetine (20 mg once per day, orally) or placebo for 3 months starting 5–10 days after the onset of stroke. All patients had physiotherapy. The primary outcome measure was the change on the FMMS between day 0 and day 90 after the start of the study drug. Participants, carers, and physicians assessing the outcome were masked to group assignment. Analysis was of all patients for whom data were available (full analysis set). This trial is registered with ClinicalTrials.gov, number NCT00657163.

**Findings** 118 patients were randomly assigned to fluoxetine (n=59) or placebo (n=59), and 113 were included in the analysis (57 in the fluoxetine group and 56 in the placebo group). Two patients died before day 90 and three withdrew from the study. FMMS improvement at day 90 was significantly greater in the fluoxetine group (adjusted mean 34·0 points [95% CI 29·7–38·4]) than in the placebo group (24·3 points [19·9–28·7]; p=0·003). The main adverse events in the fluoxetine and placebo groups were hyponatraemia (two [4%] *vs* two [4%]), transient digestive disorders including nausea, diarrhoea, and abdominal pain (14 [25%] *vs* six [11%]), hepatic enzyme disorders (five [9%] *vs* ten [18%]), psychiatric disorders (three [5%] *vs* four [7%]), insomnia (19 [33%] *vs* 20 [36%]), and partial seizure (one [<1%] *vs* 0).

**Interpretation** In patients with ischaemic stroke and moderate to severe motor deficit, the early prescription of fluoxetine with physiotherapy enhanced motor recovery after 3 months. Modulation of spontaneous brain plasticity by drugs is a promising pathway for treatment of patients with ischaemic stroke and moderate to severe motor deficit.

Lancet Neurol 2011; 10(2): 123-30

YD

Clinical Review & Education

JAMA Clinical Evidence Synopsis

# Selective Serotonin Reuptake Inhibitors for Stroke Recovery

Gillian Elizabeth Mead, FRCP; Cheng-Fang Hsieh, MD; Maree Hackett, PhD

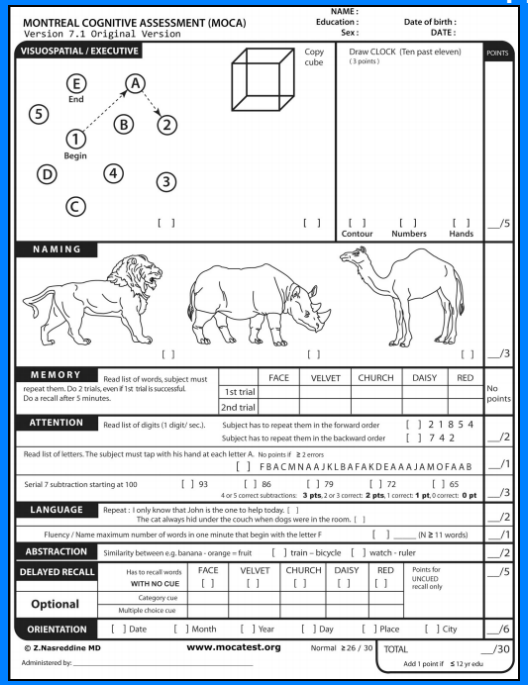
**CLINICAL QUESTION** Are selective serotonin reuptake inhibitors (SSRIs) associated with better recovery after stroke?

**BOTTOM LINE** SSRIs may be associated with improved recovery after stroke, even in persons without depression. However, much of the evidence is of poor quality. Large, high-quality trials are needed to evaluate the validity of the current evidence and improve precision of estimates of any treatment benefits.

JAMA 2013; 310(10): 1066-67

YD

# Troubles cognitifs


MONTREAL COGNITIVE ASSESSMENT (MOCA)
Version 7.1 Original Version

NAME :
Education :
Sex :
Date of birth :
DATE :

VISUOSPATIAL / EXECUTIVE — Copy cube — Draw CLOCK (Ten past eleven) (3 points) — POINTS — /5

NAMING — /3

MEMORY — Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes. — FACE VELVET CHURCH DAISY RED — 1st trial — 2nd trial — No points

ATTENTION — Read list of digits (1 digit/ sec.). — Subject has to repeat them in the forward order [ ] 2 1 8 5 4 — Subject has to repeat them in the backward order [ ] 7 4 2 — /2

Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors [ ] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B — /1

Serial 7 subtraction starting at 100 [ ] 93 [ ] 86 [ ] 79 [ ] 72 [ ] 65 — 4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt — /3

LANGUAGE — Repeat : I only know that John is the one to help today. [ ] The cat always hid under the couch when dogs were in the room. [ ] — /2

Fluency / Name maximum number of words in one minute that begin with the letter F [ ] ____ (N ≥ 11 words) — /1

ABSTRACTION — Similarity between e.g. banana - orange = fruit [ ] train - bicycle [ ] watch - ruler — /2

DELAYED RECALL — Has to recall words WITH NO CUE — FACE [ ] VELVET [ ] CHURCH [ ] DAISY [ ] RED [ ] — Points for UNCUED recall only — /5

Optional — Category cue — Multiple choice cue

ORIENTATION — [ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City — /6

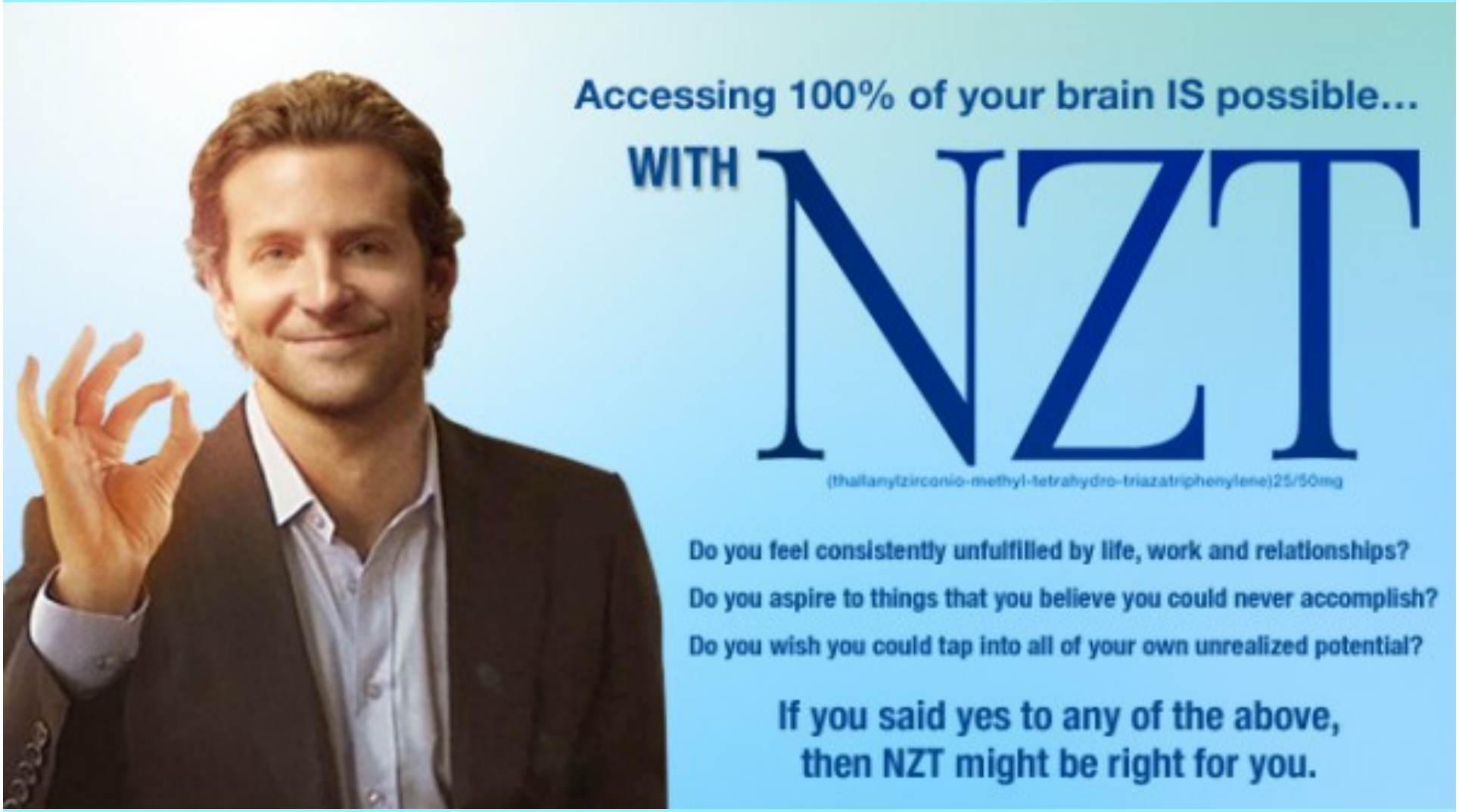
© Z.Nasreddine MD — www.mocatest.org — Normal ≥ 26 / 30 — TOTAL — /30

Administered by: _____ — Add 1 point if ≤ 12 yr edu

- Considérer le dépistage après tout AVC
  - Démence chez 30%
    - Fort prédicteur d'institutionnalisation (plus fort que l'âge ou la sévérité de l'AVC)
    - Inhibiteurs de l'acétylcholinestérase ou mémantine
  - Trouble cognitif chez 55-70%
    - Options de traitement?

http://www.mocatest.org/
http://www.strokebestpractices.ca/index.php/cognition-mood/vascular-cognitive-impairment-and-dementia/

# Meilleurs traitements nécessaires




http://collider.com/wp-content/uploads/limitless_image_bradley_cooper-600x333.jpg

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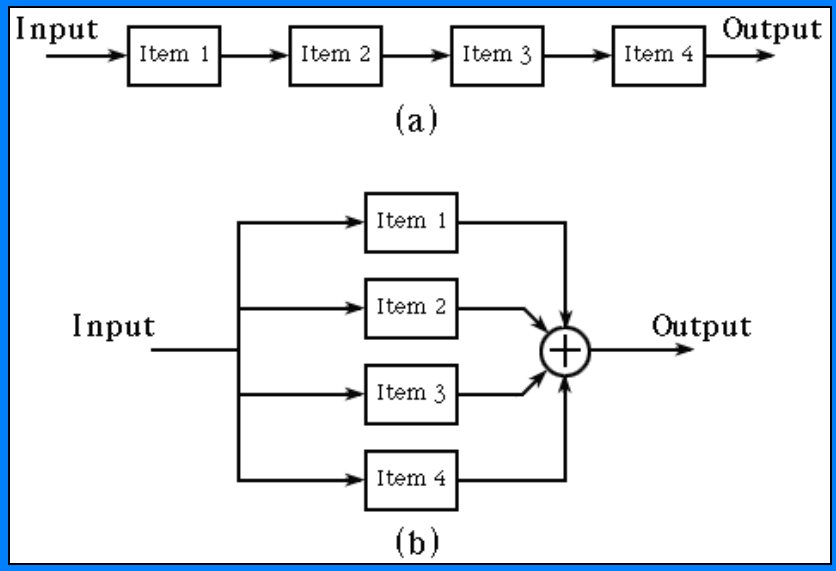
YD

# Prise en charge urgente

- Considérer rtPA
- Obtenir imagerie

- A-B-C
- Anamnèse
- Examen neurologique (NIHSS)
- Labos de base




**En série *vs* en parallèle**

http://www.funrcboats.com/seriesvparallel.htm

YD

# Récapitulation

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