High Risk TIA Management and Prognosis

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Disclosure

- I have no relevant financial interest, arrangements or affiliation with any of the products mentioned during this presentation.
- In relation to this presentation there are no conflicting interests to disclose.

- In 1869 wrote a letter to W.H. Willis MD, mentioning difficulties speaking and moving "foot"

- March 21st 1870 describes to his friend John Forester: " … not been able to read all the way, more than the right hand half of the names over the shops."

- The novelist Charles Dickens died of a stroke on June 9th 1870 at age of 58 years

TIA

- a) Definition

  b) Risk stratification

  c) Acute decision making-management

  d) Prognosis

Definition

- TIA is a brief episode of neurological dysfunction caused by focal brain or retinal ischemia, with complete resolution of symptoms **without evidence of infarction**

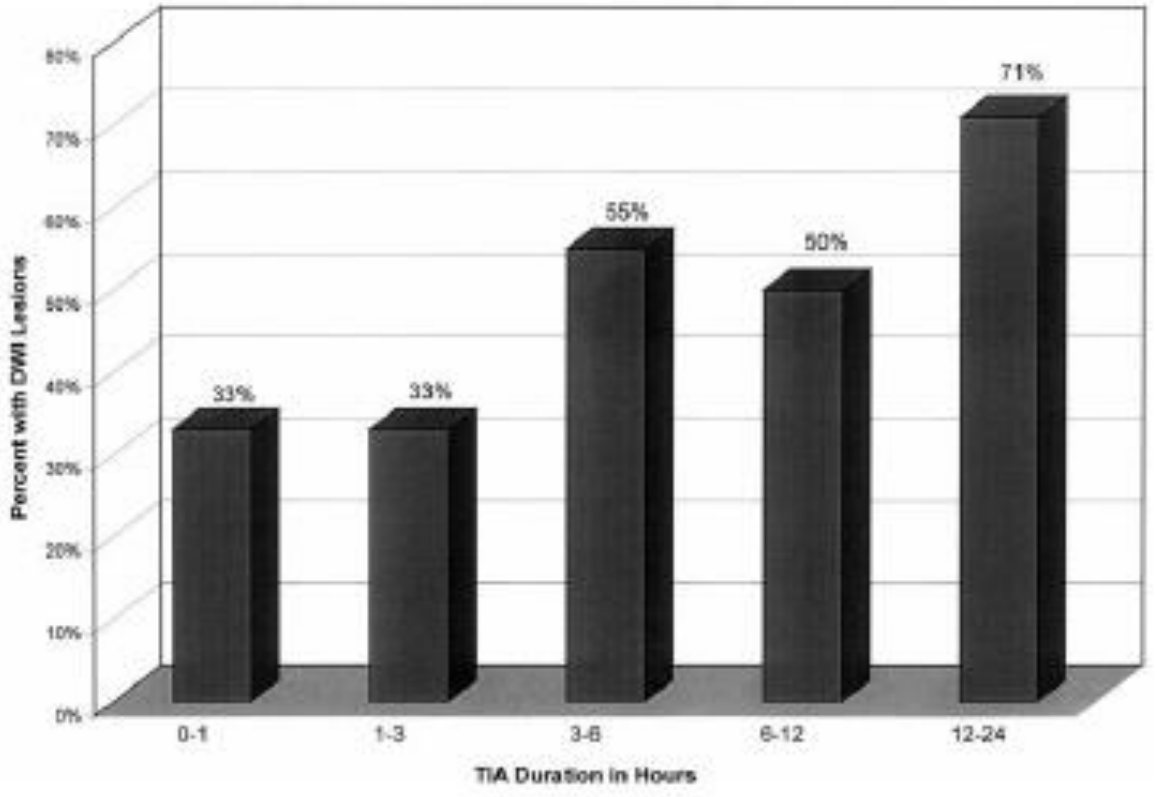
- **NEJM. 2002; 347:1013-1016**

Old versus New definition

- Time Based
- Deficit $\leq$ 24 hours.
- Suggests Benign
- Delays Intervention
- Inaccurately predicts ischemia.
- Diverges from CAD

- Tissue Based
- Transient, without evidence of infarction
- Indicates potential ischemic danger.
- Encourage IMAGING and intervention
- Good ischemic predictor
- Consistent with CAD

Diffusion MRI in patients with TIA



Stroke 1999;30:1174

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The Northern California TIA Study

JAMA.2000:13;284(22):2901-6 Cohort study

- 16 Hospitals in California
- Time span: March 1997- Feb 1998
- Diagnosis of TIA in ER with follow up in 3 months time
  - 1707 Patients
  - Average age 72 years
  - Average event duration 70 min
- 3 months: risk of stroke…… 10.5%
  1 week: risk of stroke…… 6.0%
- Recurrent TIA…… 13.2%
- Death…… 2.6%
- **Total ……. 23.5%**

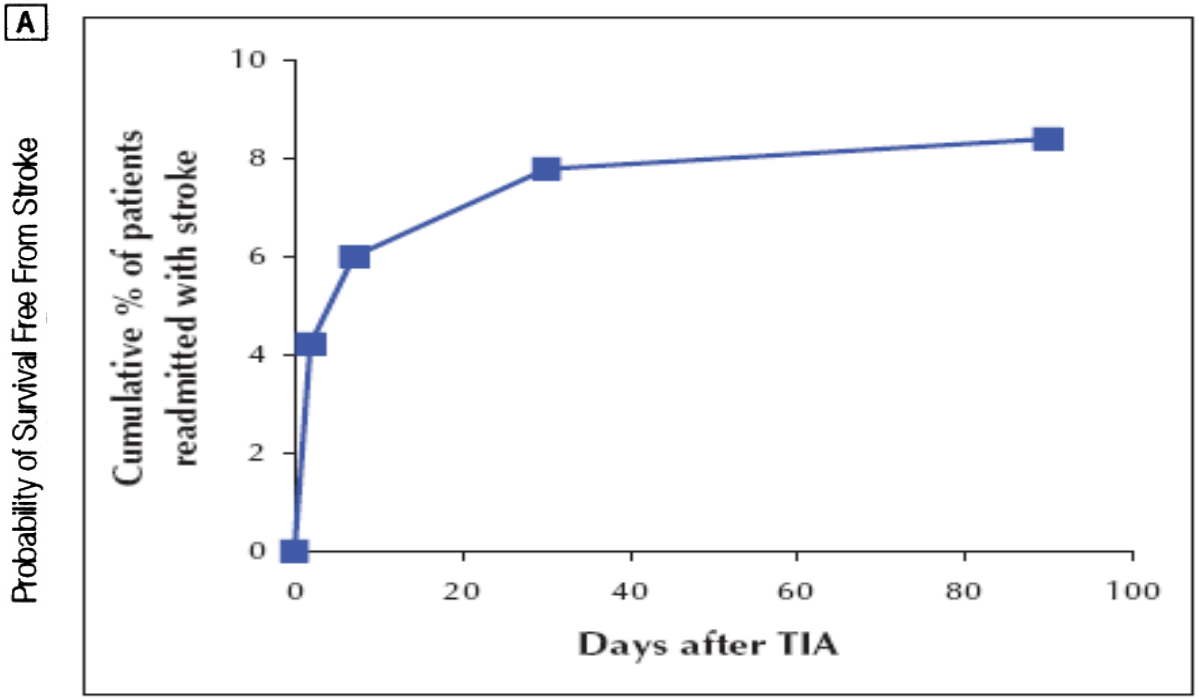


Fig. 2: Early risk of stroke after discharge from the emergency department among patients with a first-ever TIA (*n* = 167). Note that half of the cases of stroke occurring within 3 months happened in the first 2 days after TIA.

JAMA 2000;284:2901-2906

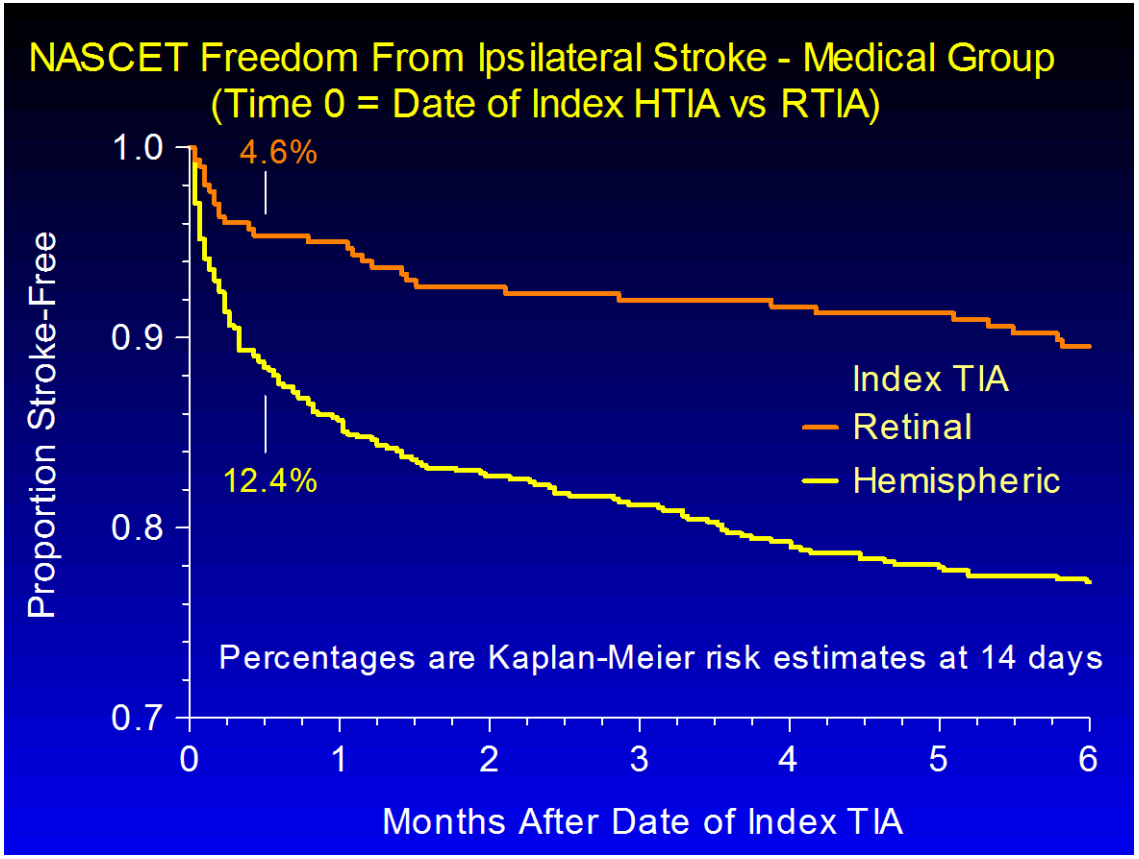
50 % of all strokes happen in the first 2 days after TIA

Quoted Risk of stroke after TIA

Whisnant, et al	10.0%/90d
Johnston, et al	10.5%/90d
Johnston, et al (Kaiser C)	8.4%/90d
Eliazsew (NASCET)	20.1%/90d
Panagos, et al	13.3%/90d
FASTER (CANADA)	8.9%/90d
Lovett, (Oxfordshire)	12.0%/30d

- Average : 12 %

Facts from NASCET trial



ABCD2

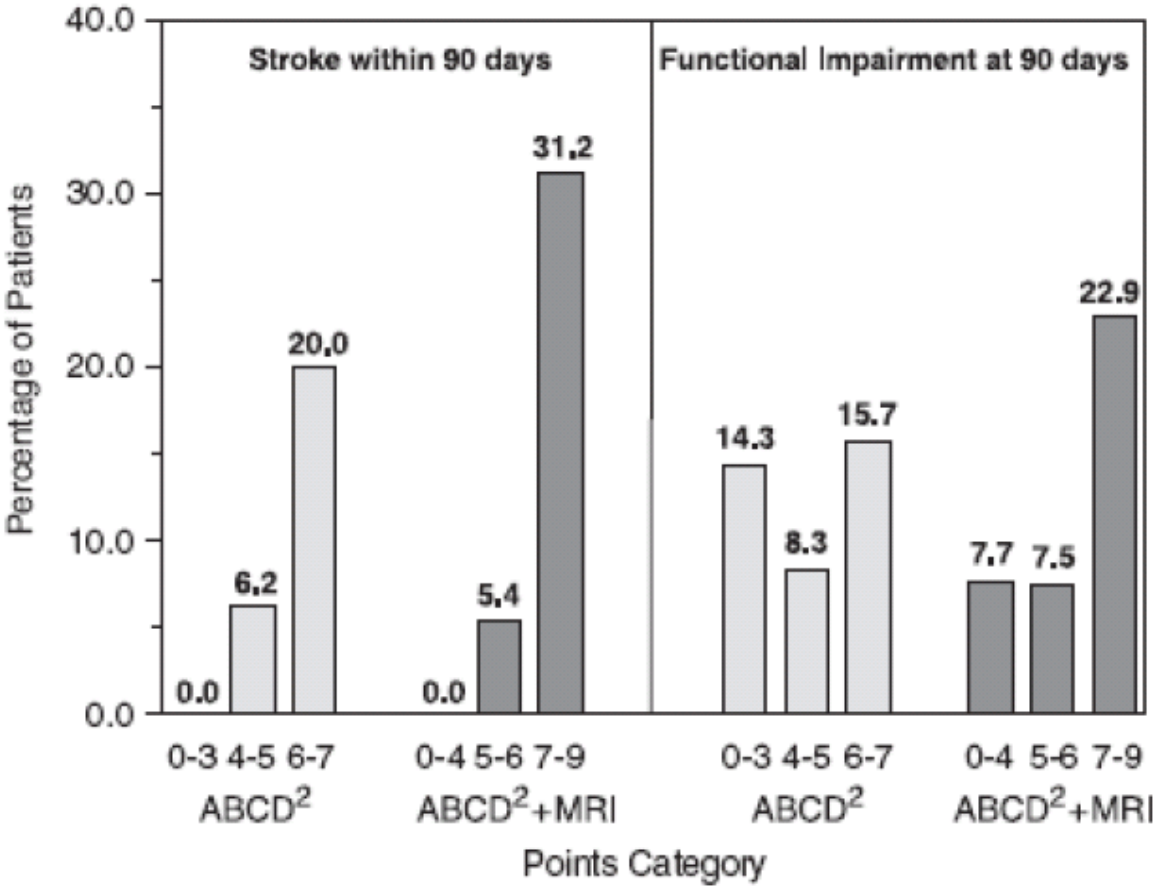
AGE	> 60 years	1 point
BLOOD PRESSURE	sBP>140 or dBP >90	1 point
CLINICAL FEATURE	unilateral weakness aphasia no weakness	2 points 1 point
DURATION	>60 min >10-59min	2 point 1 points

2-day stroke risk: 1%(0-3 points), 4% (4-5 points), 8% (6-7 points)

90 day stroke risk up to 25%

Lancet 2007; 369:283-92

ABCD2 + MRI (DWI)



Coutts et al. Int J. Stroke 2008; Ann Neurol 2005

Summary risks

- TIA patients have high risk of stroke within 3 months (12 %)
- Most patients with TIA have a stroke within first week after event
- The risk of re-occurrence is different if they have hemispheric or retinal symptoms

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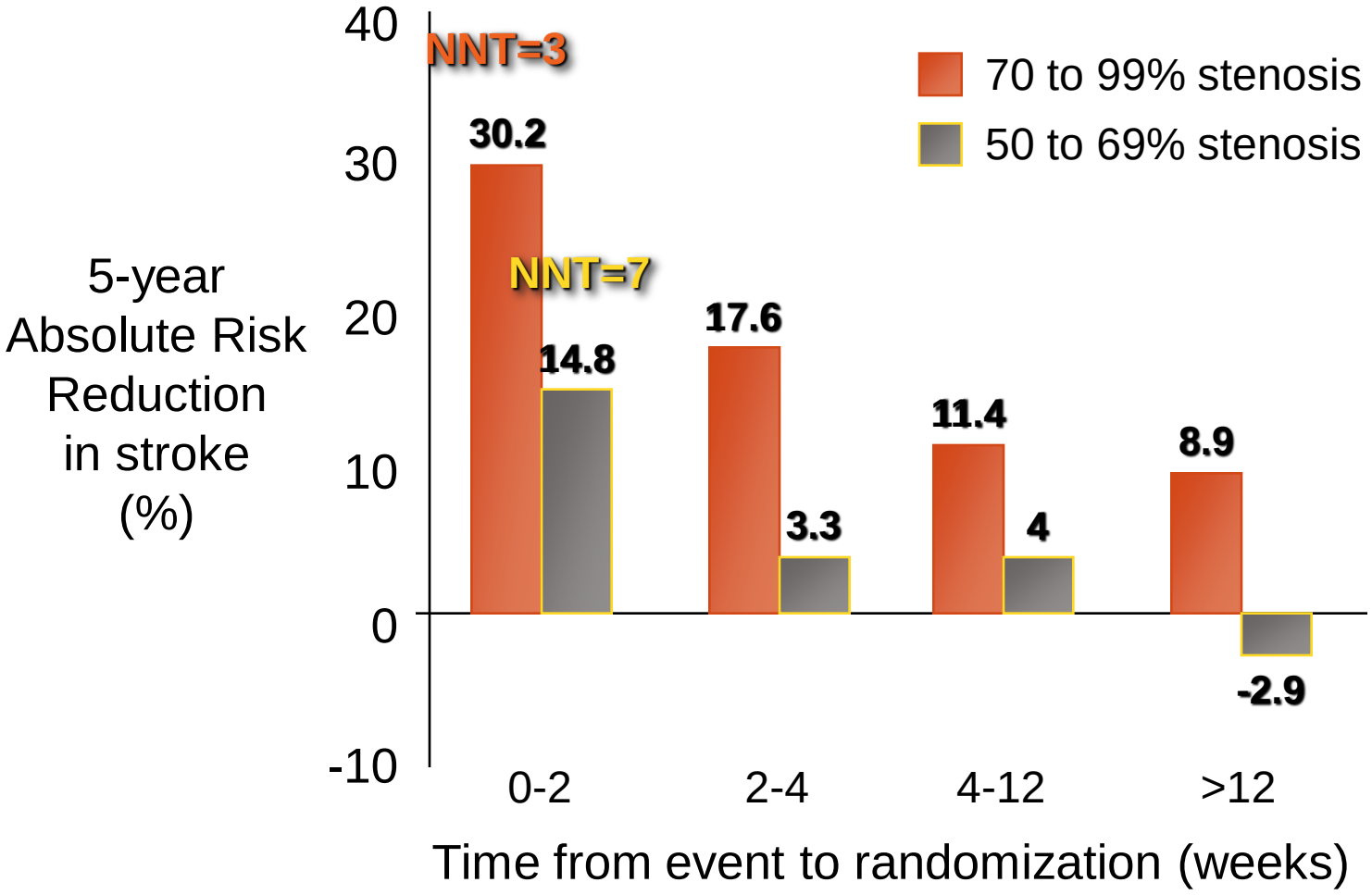
- 23% of patients with ischemic stroke had a TIA before their stroke

  a) 17% occur the same day
  b) 9% occurred the previous day
  c) 43% had a TIA within 1 week

Endarterectomy Timing
The NASCET and ECST Study results,

Lancet 2004;363:915-24



Atrial fibrillation

- One of the strongest known independent risk factor for ischemic stroke.
- valvular and non-valvular disease
- permanent vs. paroxysmal
- high risk patient

annual risk up to 12%

- Anticoagulation is standard of care

Hypertension

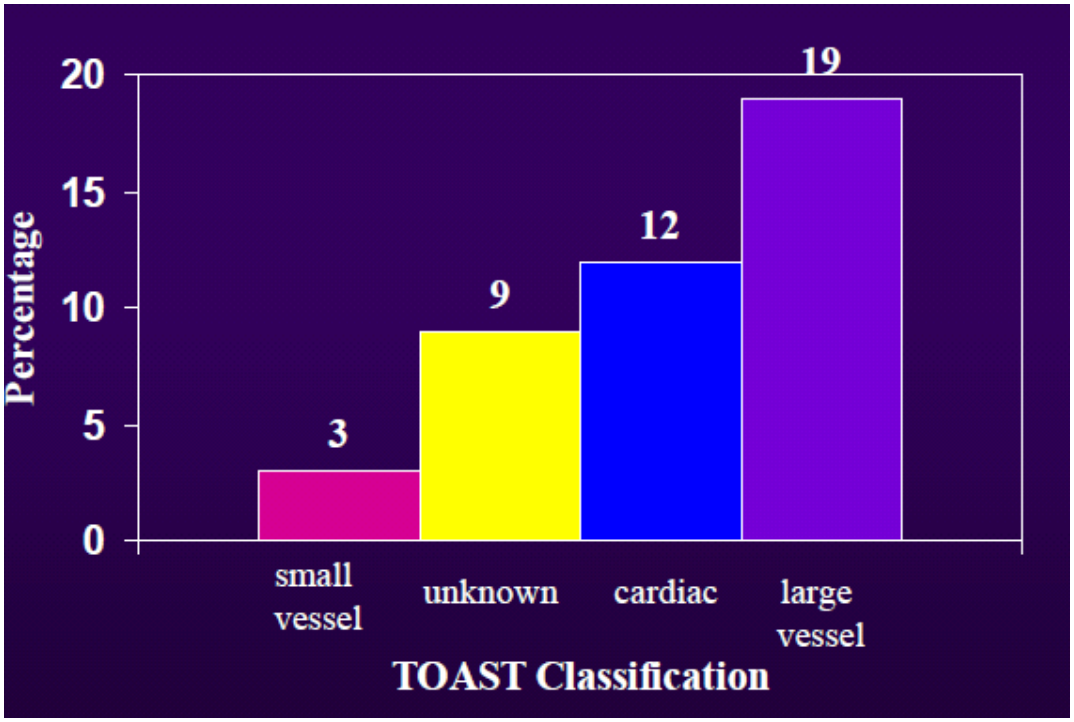
- The most important modifiable risk factor
  Ischemic bleeding,
  Silent strokes

- Contributes to
  Large vessel disease
  Small vessel (lacunar)
  LV dysfunction

- Treatment **Risk reduction 40%**

- CHEP recommendations:
- <140/90 (in DM <130/80)

3-Month Stroke Risk



Lovett et al. Neurology 2004: Meta analysis, n=1709

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90 days stroke risk from 10% to 2%

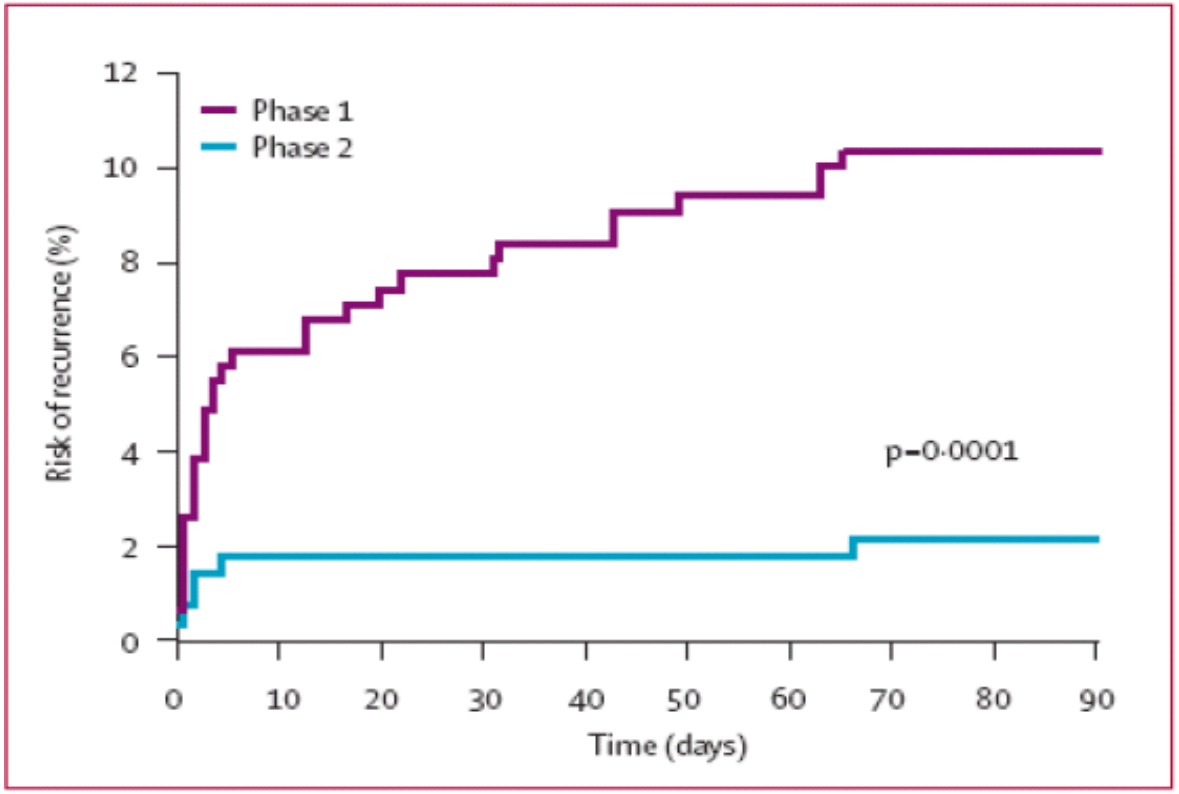

Figure 2: **Risk of recurrent stroke after first seeking medical attention in all patients with TIA or stroke who were referred to the study clinic**

EXPRESS Study
Rothwell et al. Lancet 2007

RECOMMENDATIONS
The 'Don' t and Ifs' rules

- Don't discharge If not sure; consult IM/Neurologist!
- Don't discharge a patient unless major risk factors addressed and images have been done.
  (managing hypertension, hyperglycemia, electrolytes imbalance) and CT of brain and carotid images

If moderate to severe stenosis urgent referral to vascular surgery

- Don't discharge a patient with crescendo TIAs
- Don't discharge a patient with mild deficits (it is a stroke)
- Don't discharge a patient with atrial fibrillation with out treatment.

RECOMMENDATIONS
The 'Don' t and Ifs' rules

- If ABCD2 score is 0-3 points and patient is stable;
  - REFERRAL TO **STROKE CLINIC**
    (all patients should be seen within 3 days)

- If large vessel disease is suspected: load patient with Clopidogrel (75mg x 3).

- If Patient is in Atrial Fibrillation: Patient should be admitted on IV heparin and a (transesophageal) echo should be requested to rule out: Atrial appendage thrombus (by best evidence practice)

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