Acute stroke therapy update

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CENTRE FOR BRAIN RESEARCH
THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau

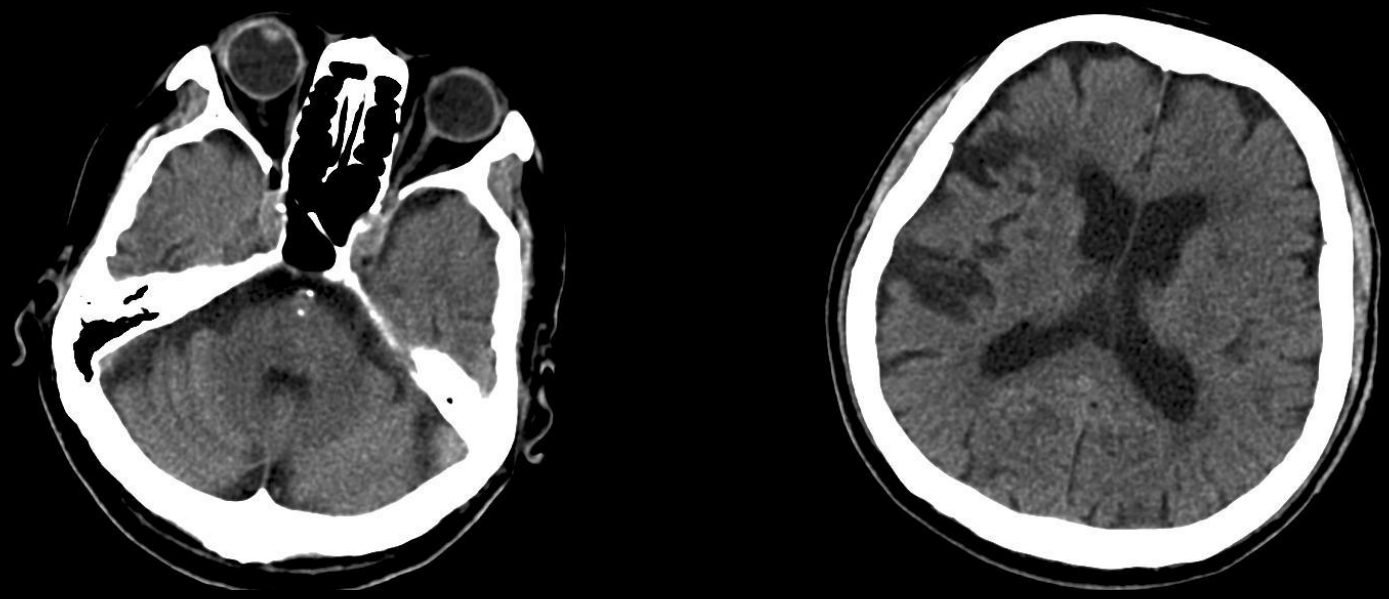
Mr G 82 years

- 13:00 sudden onset
  - severe left sided weakness
  - spinning vertigo & truncal ataxia
- Background
  - hypertension 20 years
  - elevated lipids
  - ex-smoker 30 years
- Independent & lives with wife

Mr G 82 years

- Examination
  - alert & oriented
  - unable to move eyes to right past midline
  - no movement left upper limb
  - flicker movement left lower limb
  - reduced light touch sensation right limbs
- Transferred to the stroke unit

Mr G 82 years

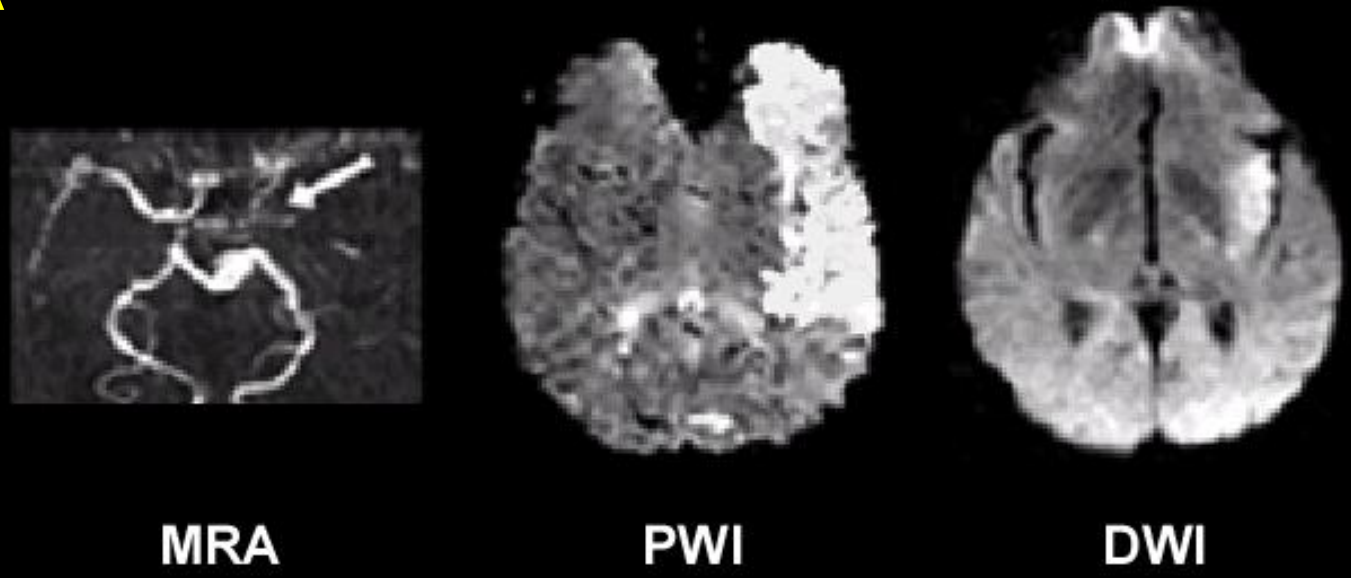


Mr G 82 years

- 15:26
  - treated with iv Alteplase (tPA)
- Three days later
  - Neurologically normal
  - Discharged home
    - Clopidogrel 75 mg OD
    - Atorvastatin 40 mg OD
    - Doxasosin, Felodipine, Metoprolol

Before tPA

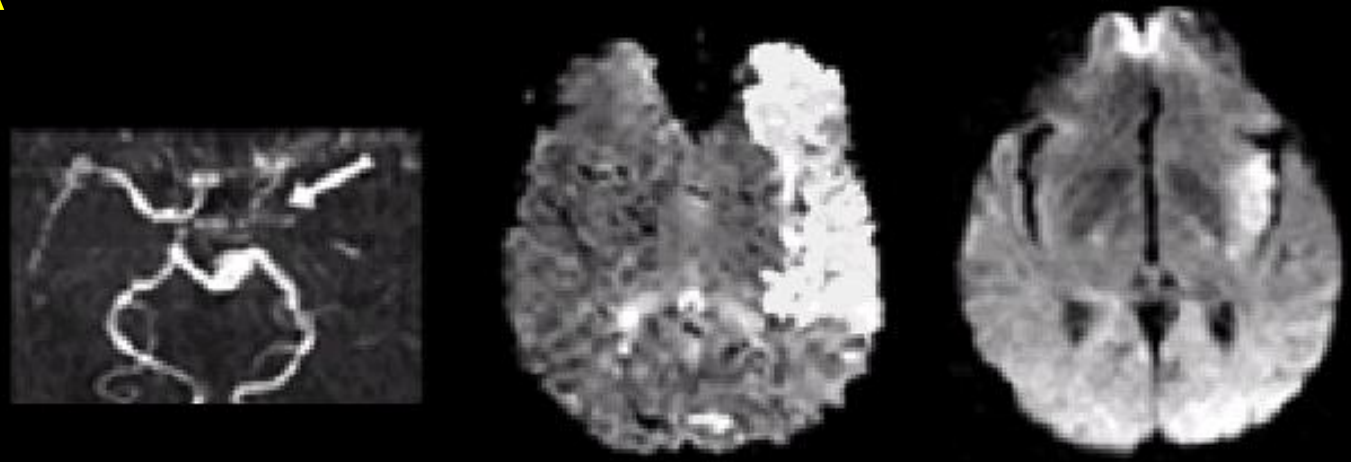
2 h



MRA PWI DWI

Before tPA

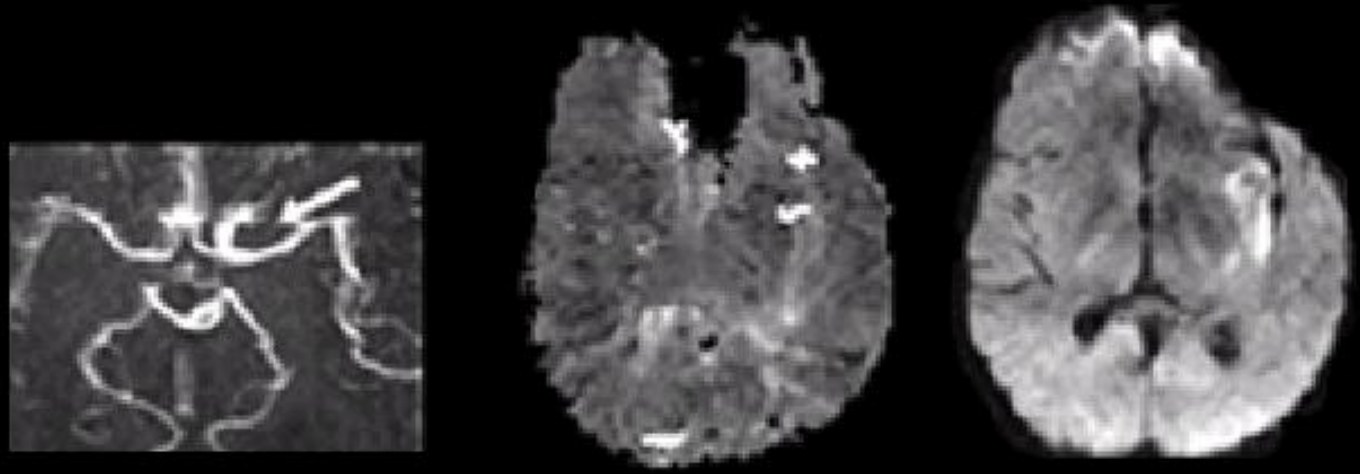
2 h



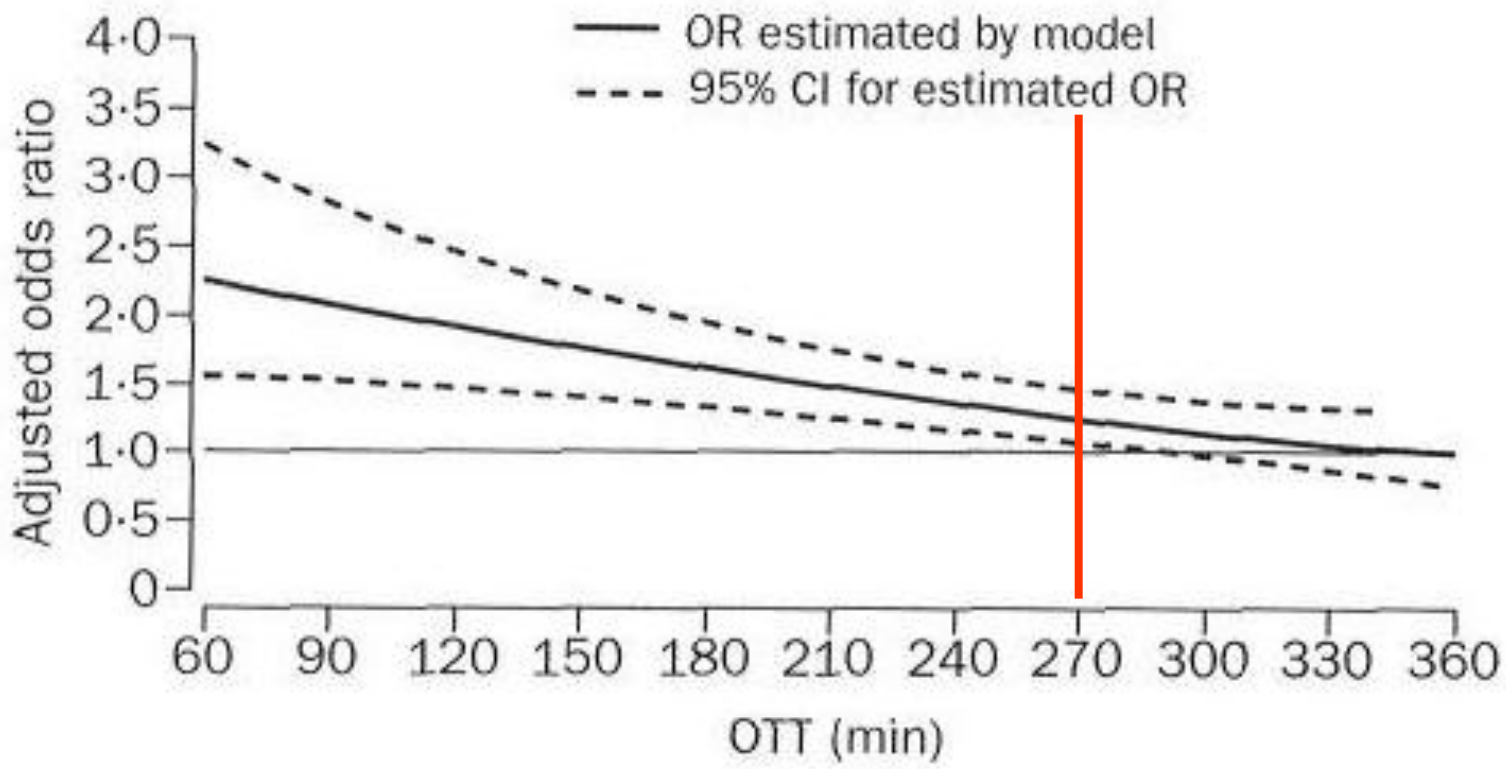
MRA PWI DWI

After tPA

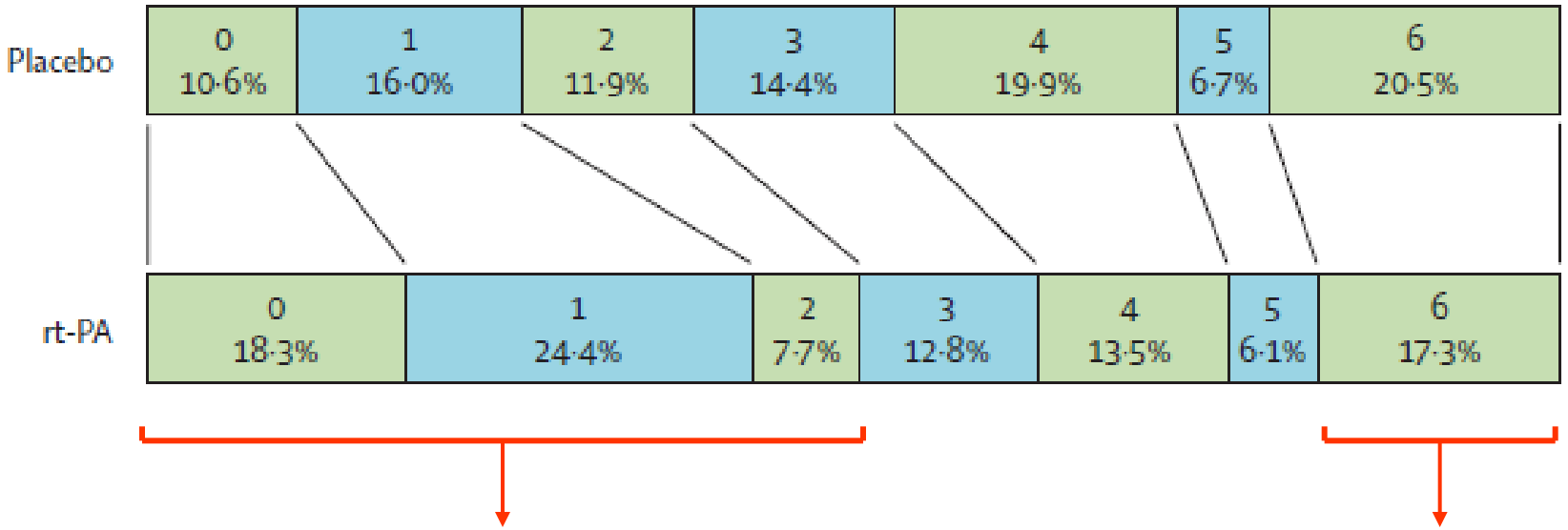
5 d



Extending the Window for tPA



Intravenous tPA



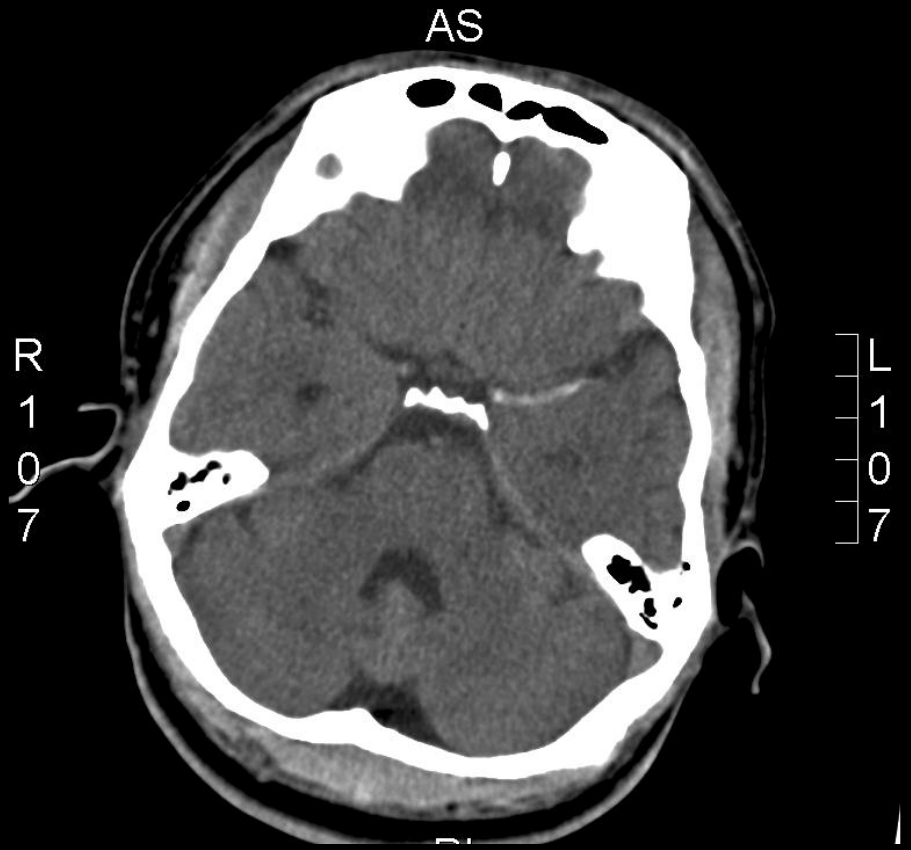
Mild or no disability

50.4 vs 38.5%

Death

17.3 vs 20.5%

Khaja A et al. *Lancet* 2007



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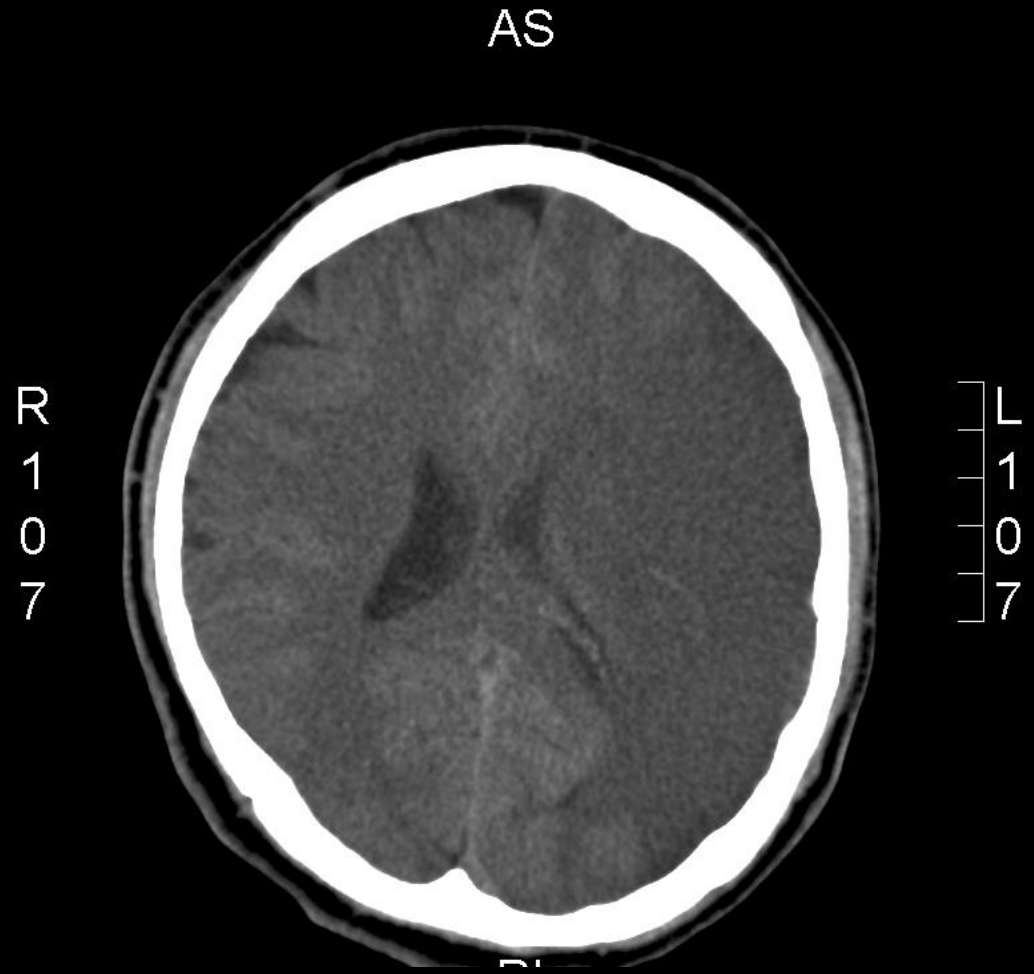
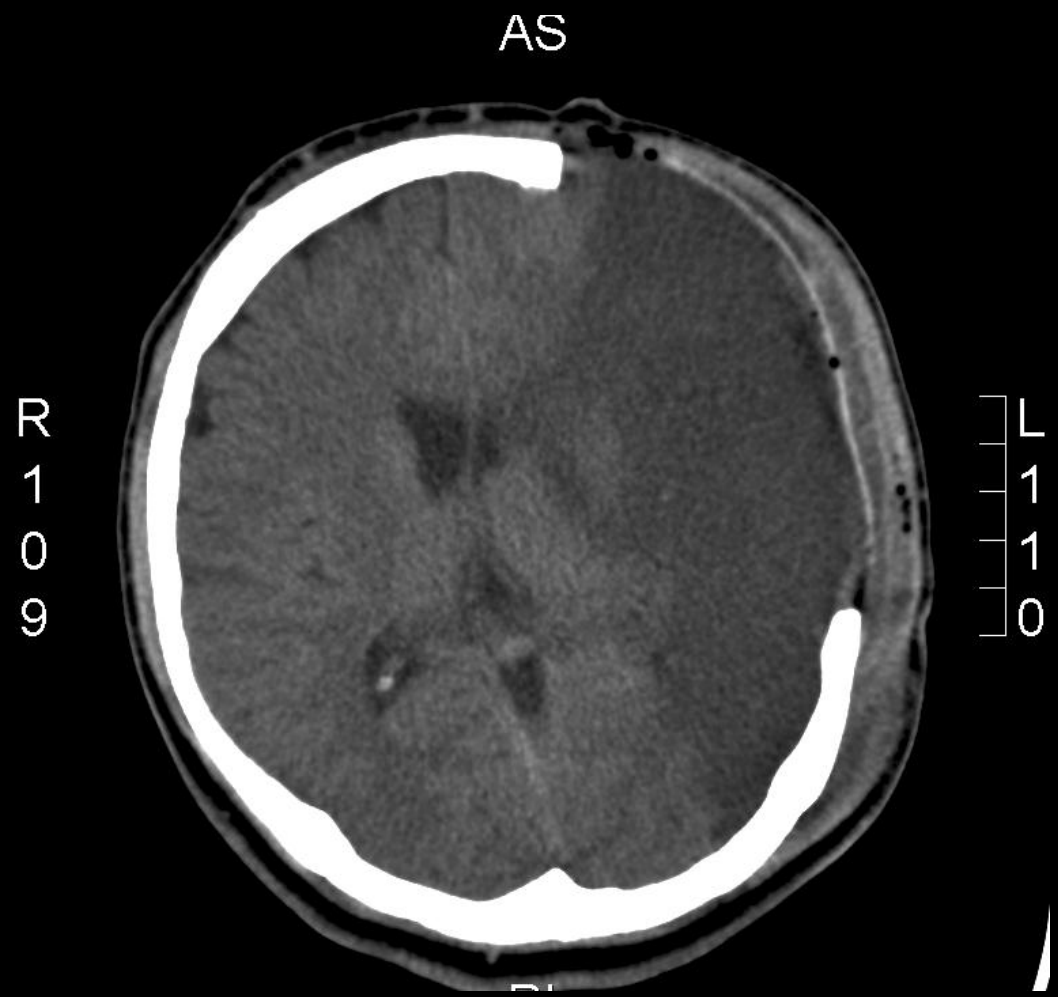
Recanalisation with iv tPA

Occlusion	Recanalisation
ICA	5%
MCA M_1	30%
M_2	42%
Basilar	11%
Overall	30%

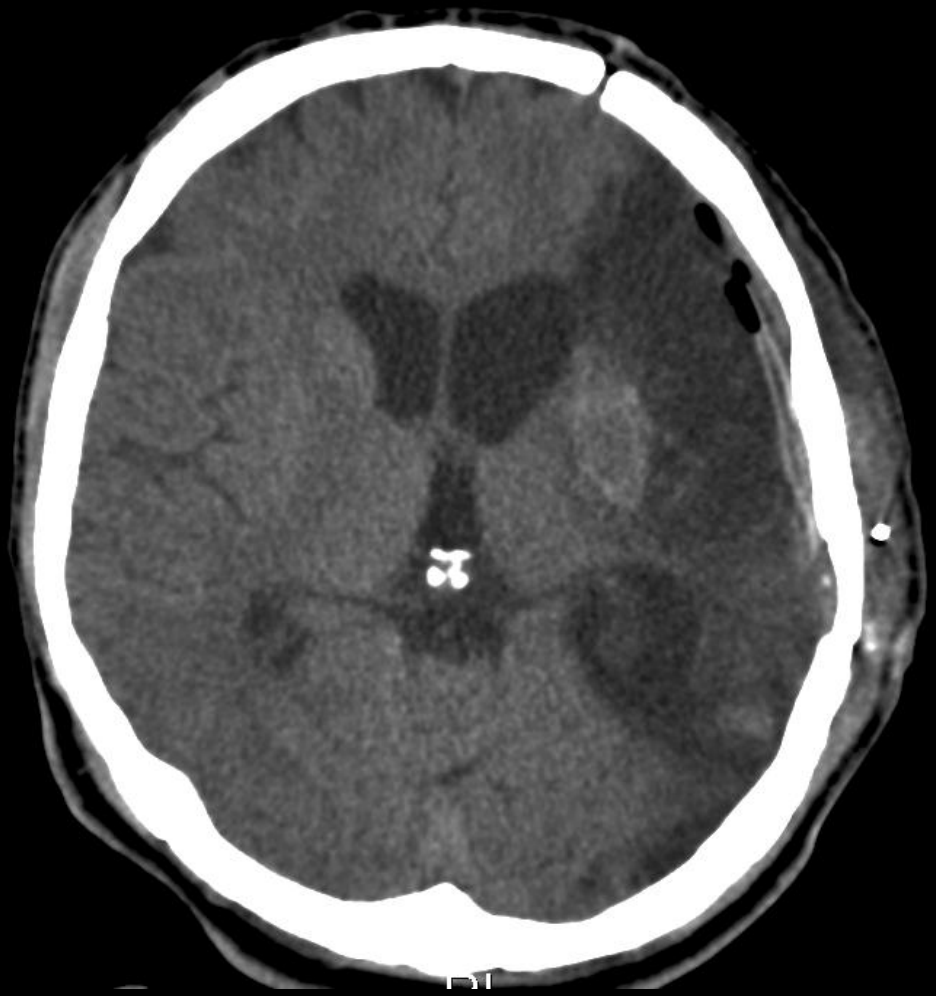
15 hours after onset



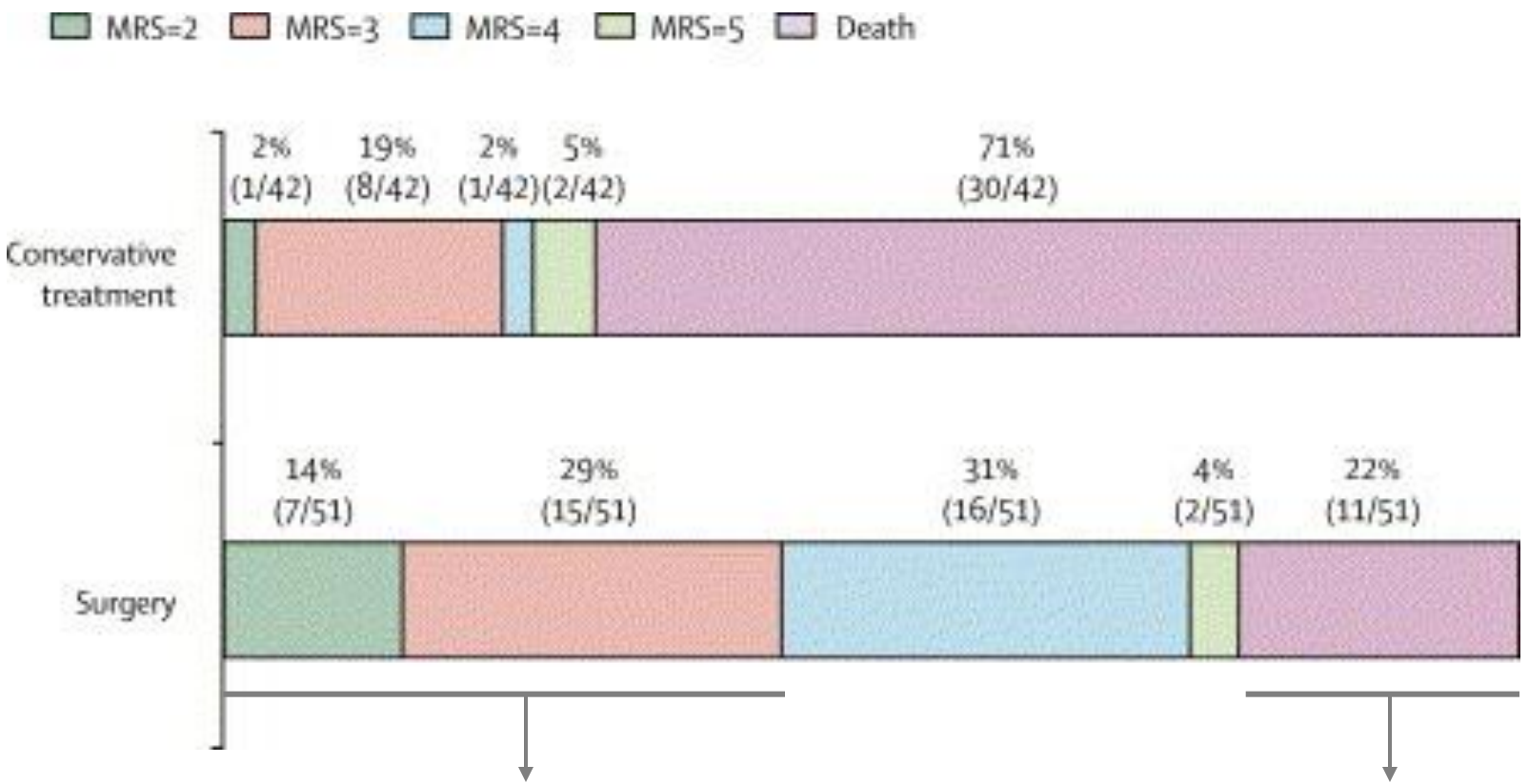
Post op



6 weeks after craniectomy



Modified Rankin score 12 months



Mild/mod disability

43% vs 21%

Death

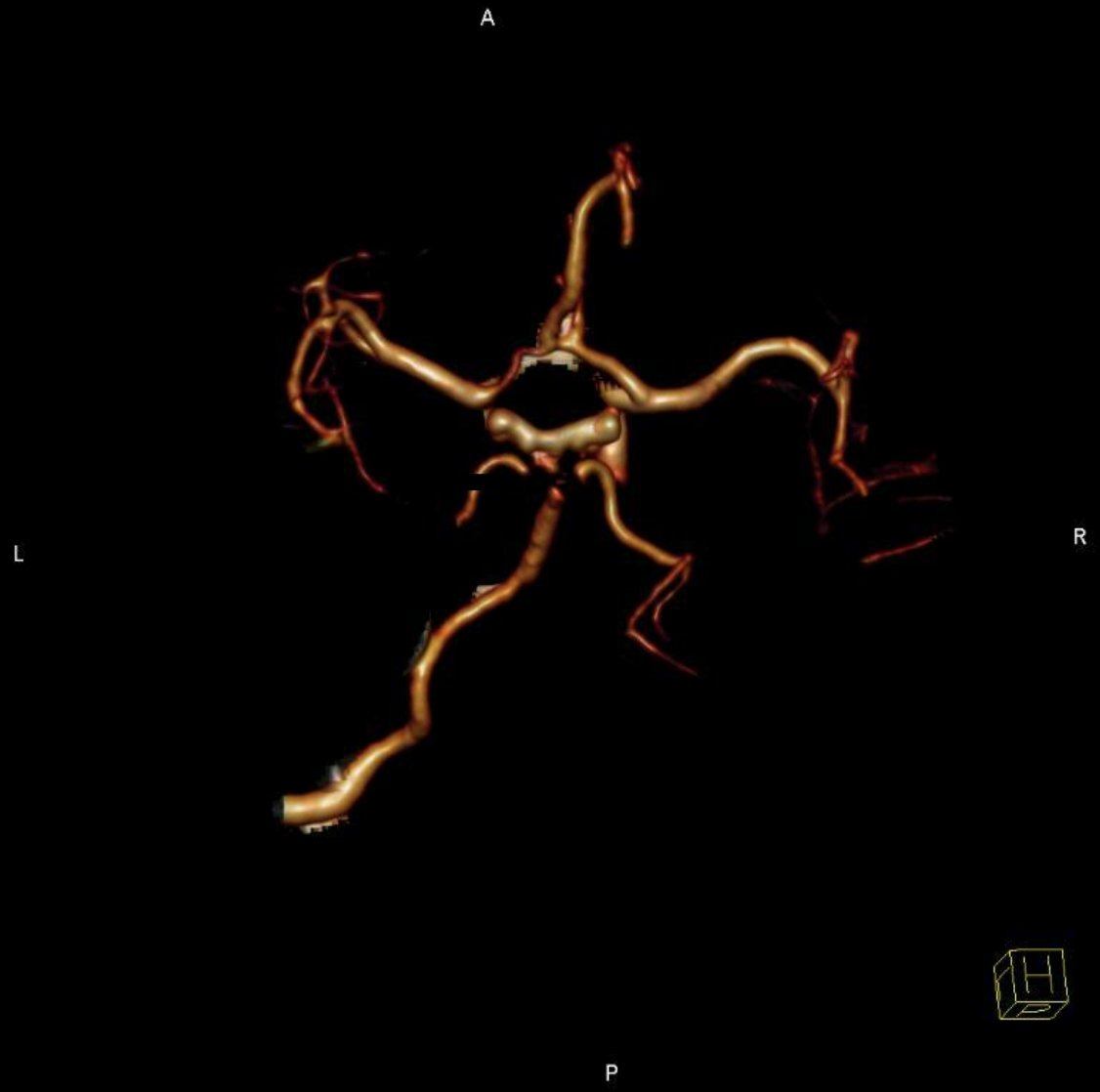
22 vs 71%

Lancet Neurol. 2007;6:200

Mrs X 54 years

- 01:00 husband woken
  - laboured breathing
  - Unresponsive
- Examination
  - unconcious
  - GCS = 3

54 year old woman with initial GCS 3



Recanalisation with iv tPA

Occlusion	Recanalisation
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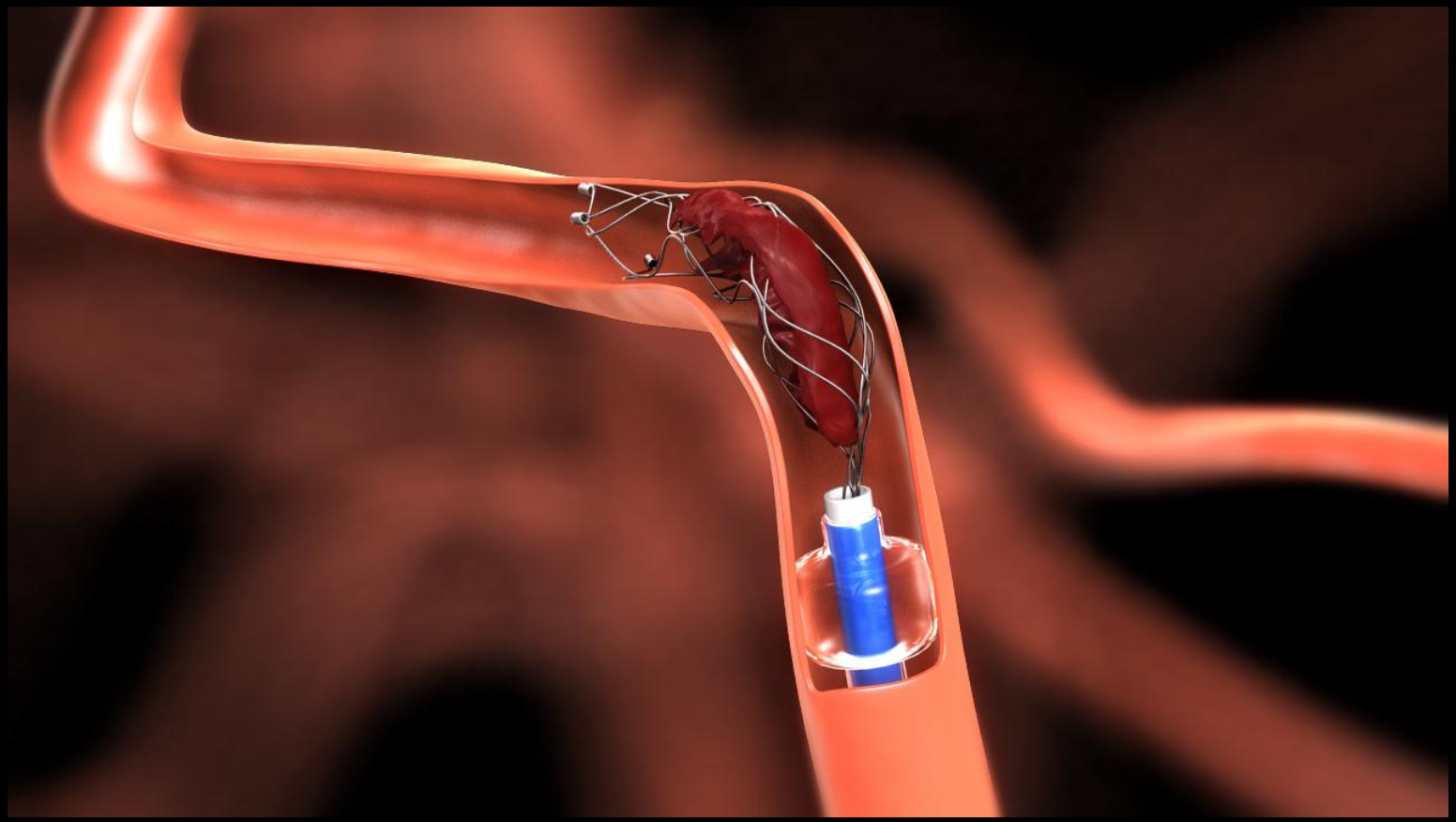
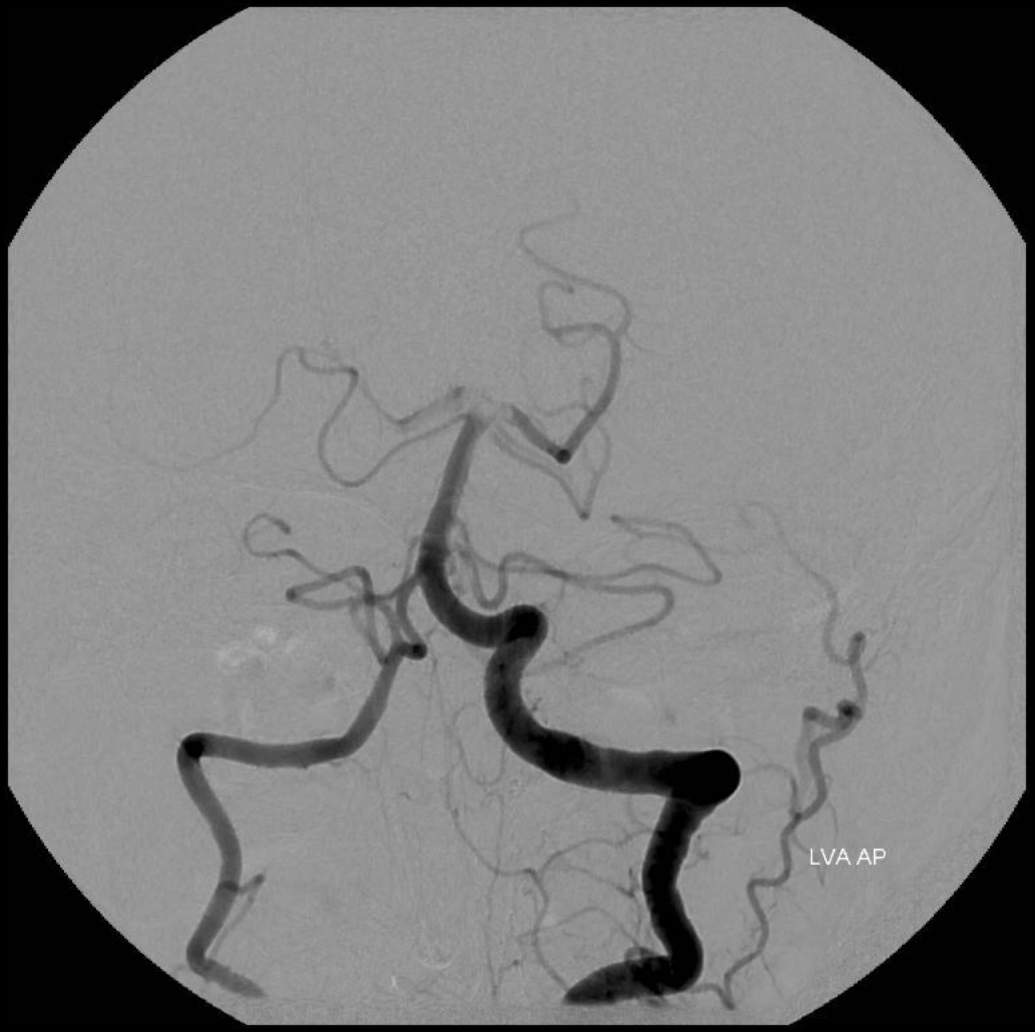
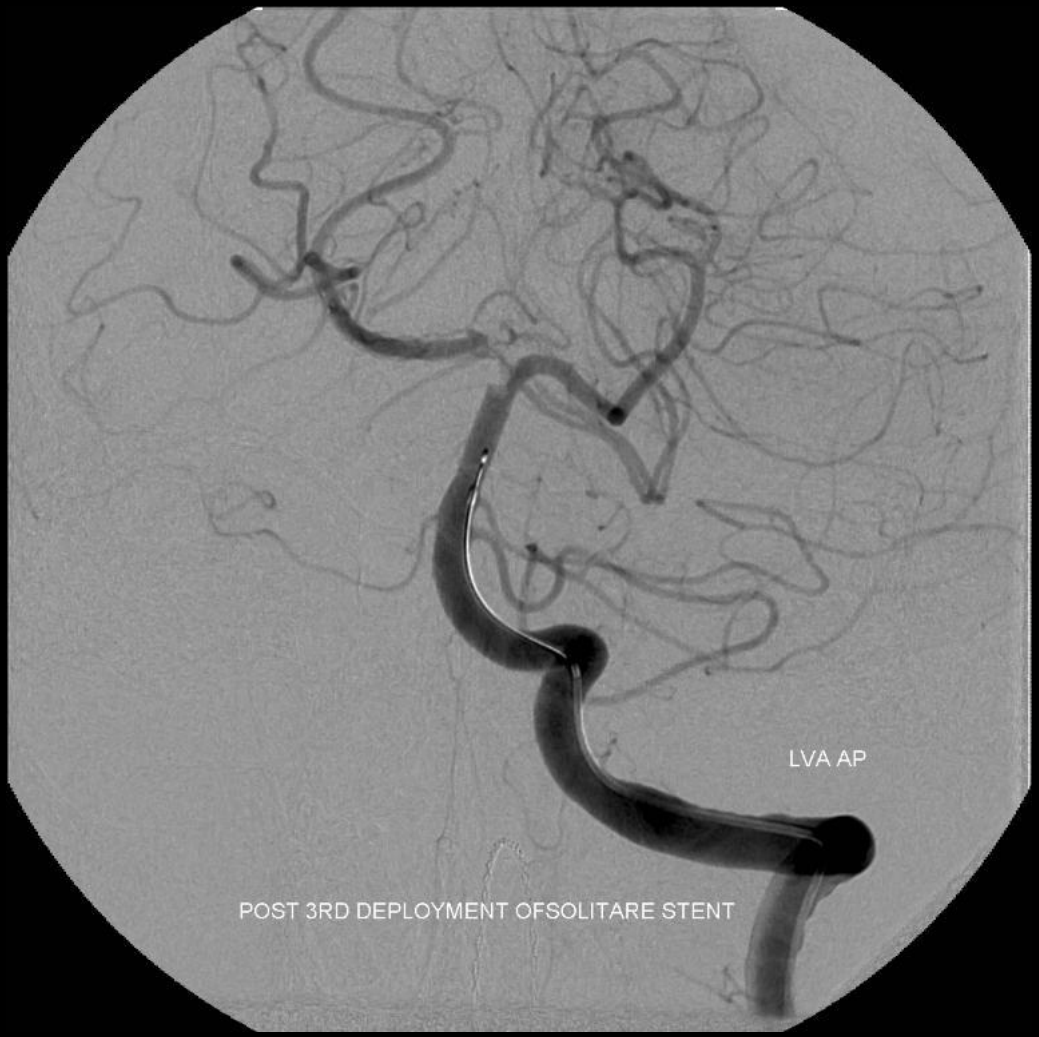
Solitaire device



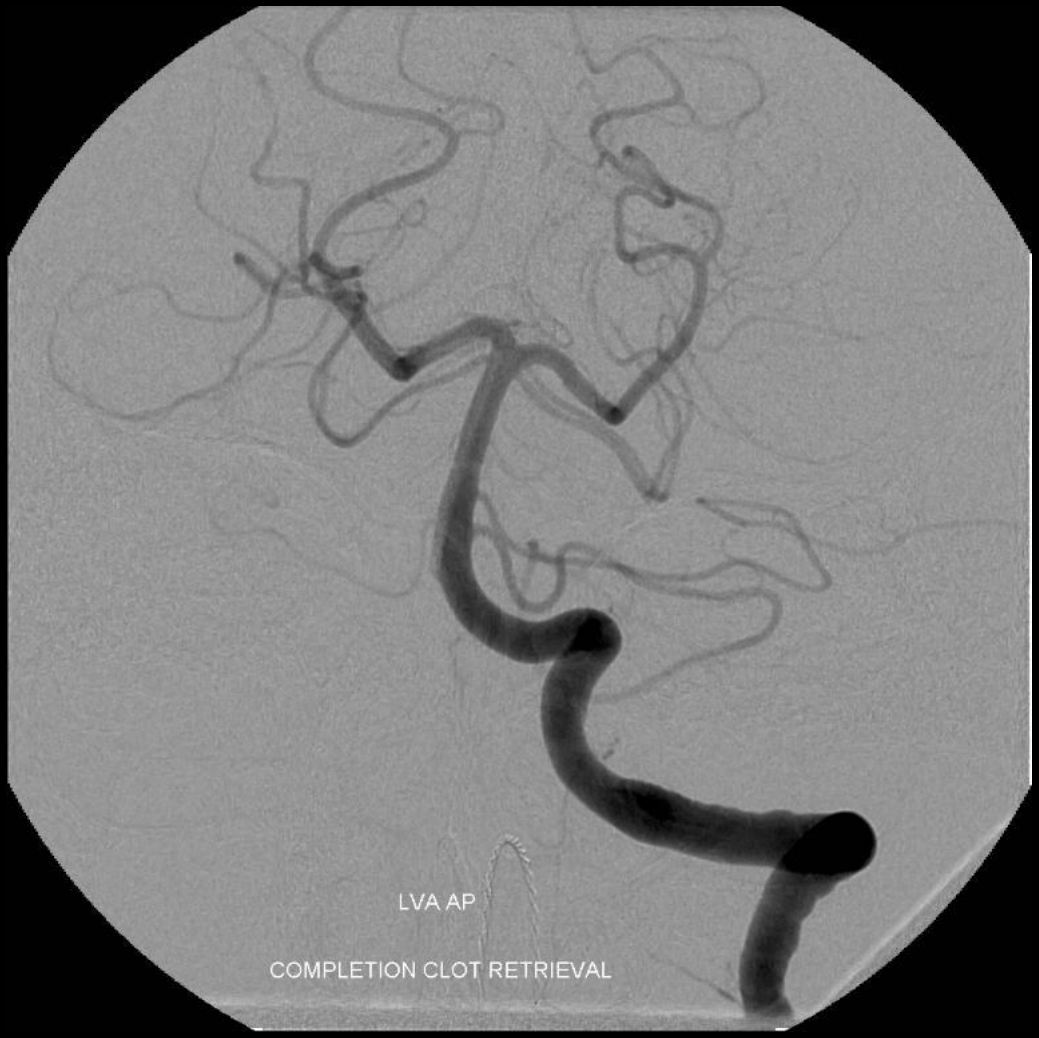
54 year old woman
Presented with GCS 3

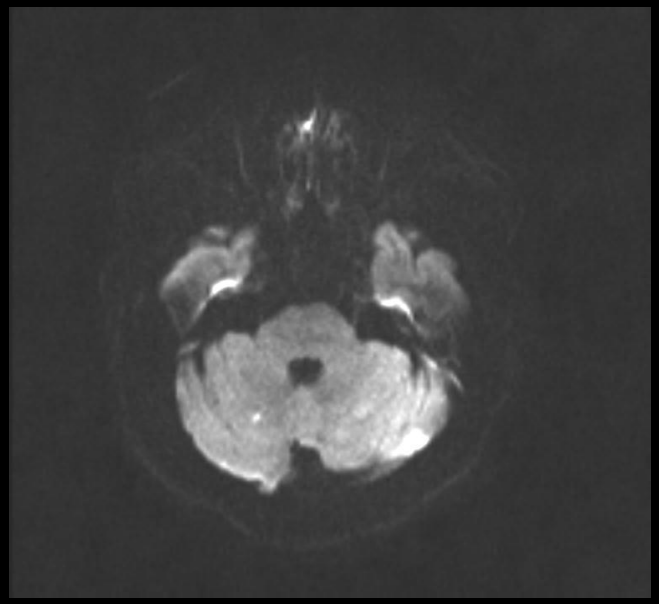


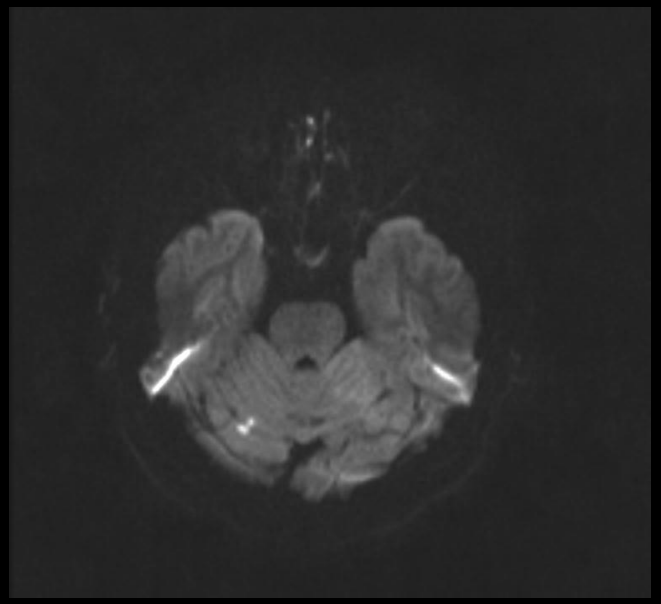
54 year old woman

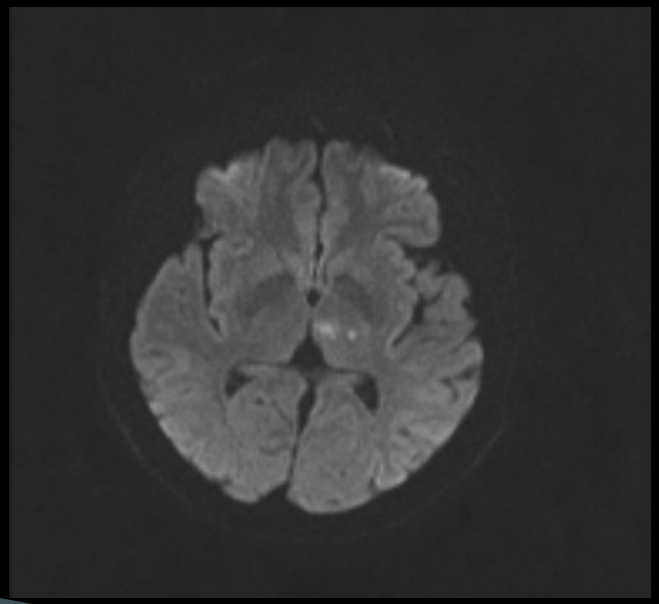


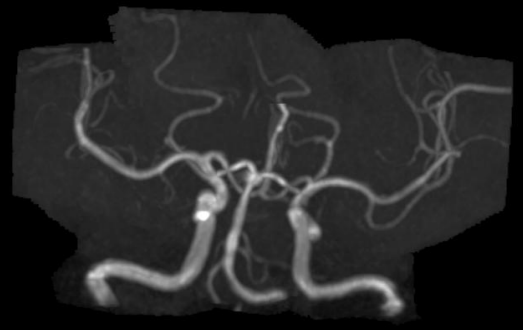
54 year old woman











home with mild diplopia mRS = 2

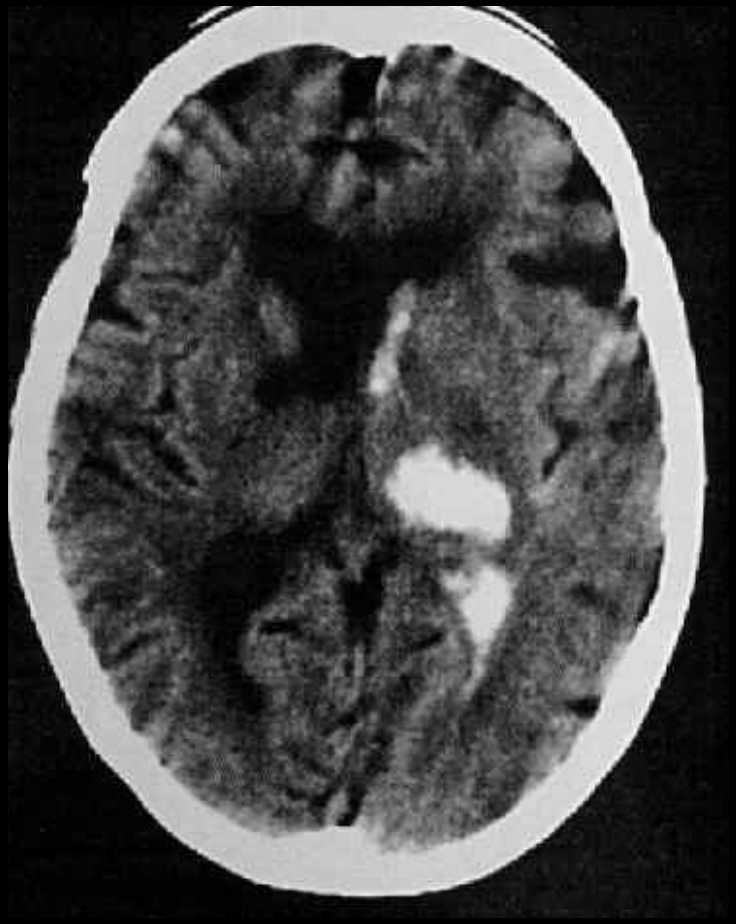
Mr S 53 years

- Presented with sudden onset
  - Dysphasia & right sided weakness
  - Headache
- Background
  - Hypertension & smoker
- Examination
  - Dysphasic
  - R hemiplegia
- Screened for iv Alteplase

Mr S 53 years

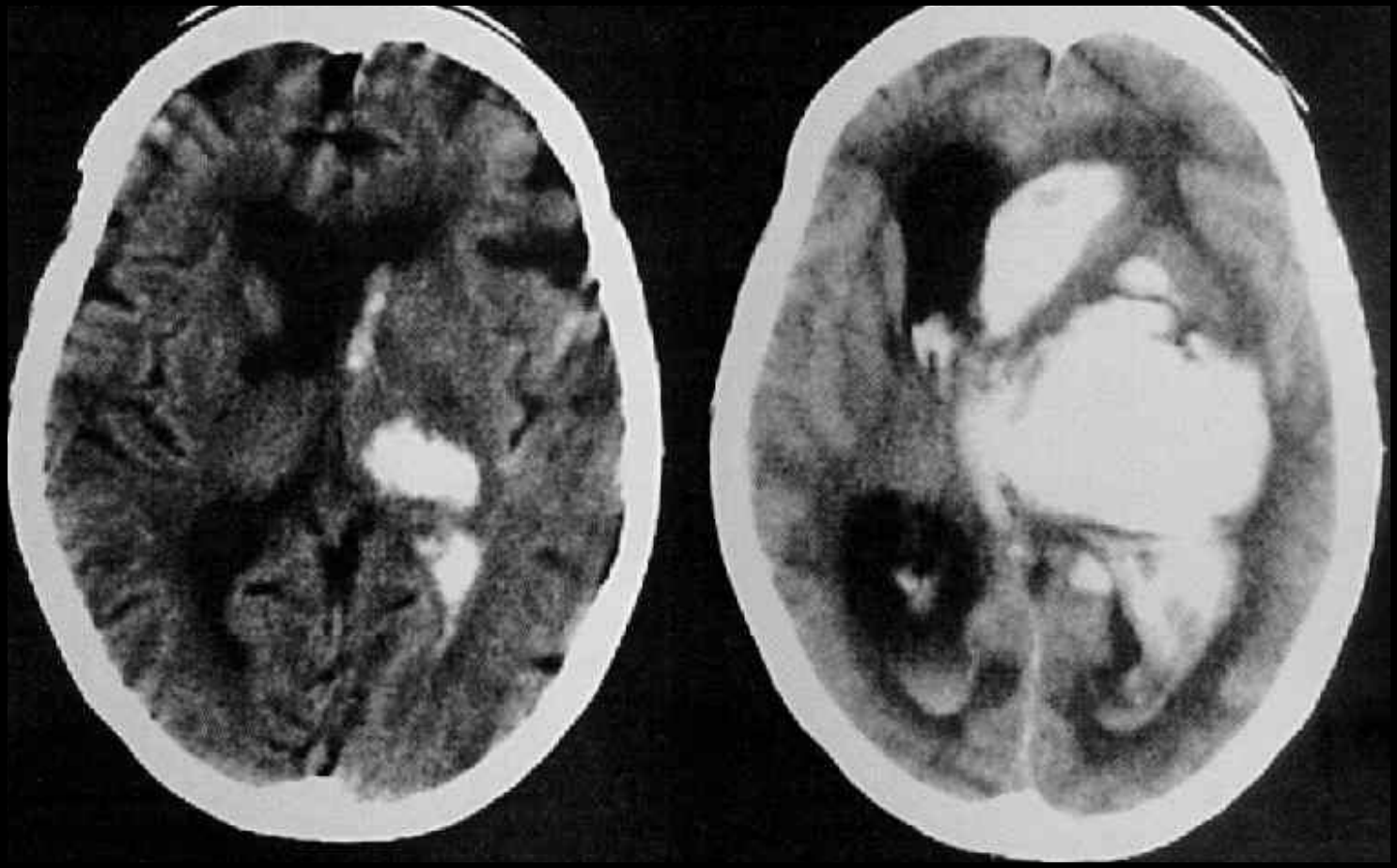
- Presented with sudden onset
  - dysphasia
  - right sided weakness
- Background
  - hypertension
  - smoker

1 hour



1 hour

6 hours



Aggressive acute BP lowering

INTERACT II study

- 2839 patients <6 hrs
  - <140 mmHg
  - <180 mmHg
- Aggressive BP lowering improved outcome
  - OR 0.87 (95% CI 0.75–1.01)
  - NNT to prevent 1 death or disability = 27

Acute stroke therapy

RCT evidence of benefit with:

- Stroke unit care
- Ischemic stroke
  - aspirin
  - stroke thrombolysis
  - hemicraniectomy for malignant infarction
- Intracerebral hemorrhage
  - acute systolic BP lowering to 140 mmHg

Acute therapy summary

- iv tPA is very effective
  - therapeutic window only up to 4.5 hours
  - only minority of patients actually treated
- ia therapy is promising
  - opens vessels but no RCT evidence of benefit
  - EXTEND ia study
- hemicraniectomy
  - clearly reduces mortality
  - patients left with disability