

Acute Management of TBI

(Brief overview information only – do not
use to guide treatment for your patients)

Acute management of TBI

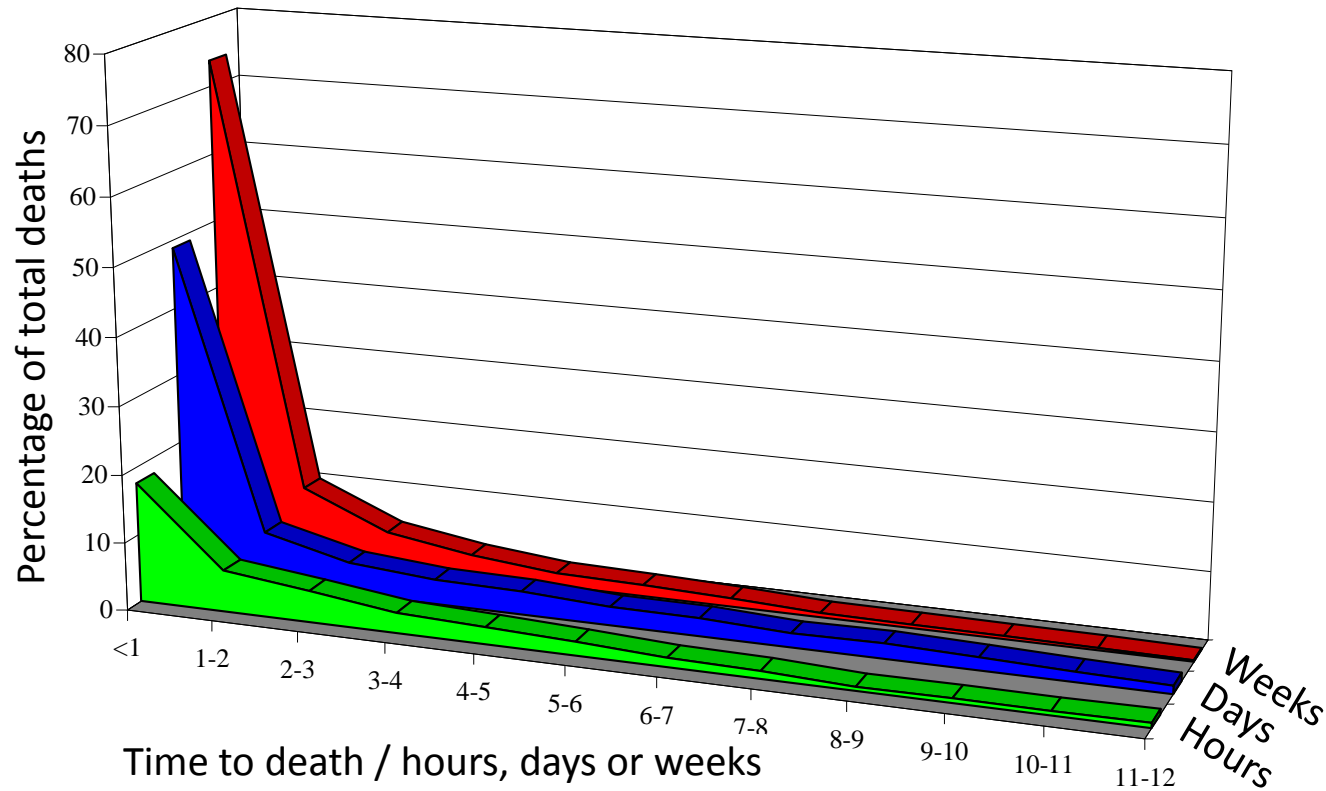
Principles:

1. Stabilise the patient
2. Prevent secondary neuronal injury



Risk of early death in TBI

Time between admission and death in trauma patients



Acute management of TBI

Assessment of TBI

- Glasgow Coma Scale
- Pupil reactivity

Glasgow Coma Scale

Best Eye Response (4)

1. No eye opening
2. Eye opening to pain
3. Eye opening to verbal command
4. Eyes open spontaneously

Best Verbal Response (5)

1. No verbal response
2. Incomprehensible sounds
3. Inappropriate words
4. Confused
5. Orientated

Best Motor Response (6)

1. No motor response
2. Extension to pain
3. Flexion to pain
4. Withdrawal from pain
5. Localising pain
6. Obeys Commands

Acute management of TBI

GLASGOW COMA SCALE

- Mild 13 to 15
- Moderate 9 to 12
- Severe 3 to 8

Acute management of TBI

1. Protect the airway and oxygenate
2. Ventilate
3. Avoid hypotension
4. CT scan when appropriate
5. Neurosurgery if needed
6. Intensive care

➤ Protect the airway and oxygenate

➤ Ventilate

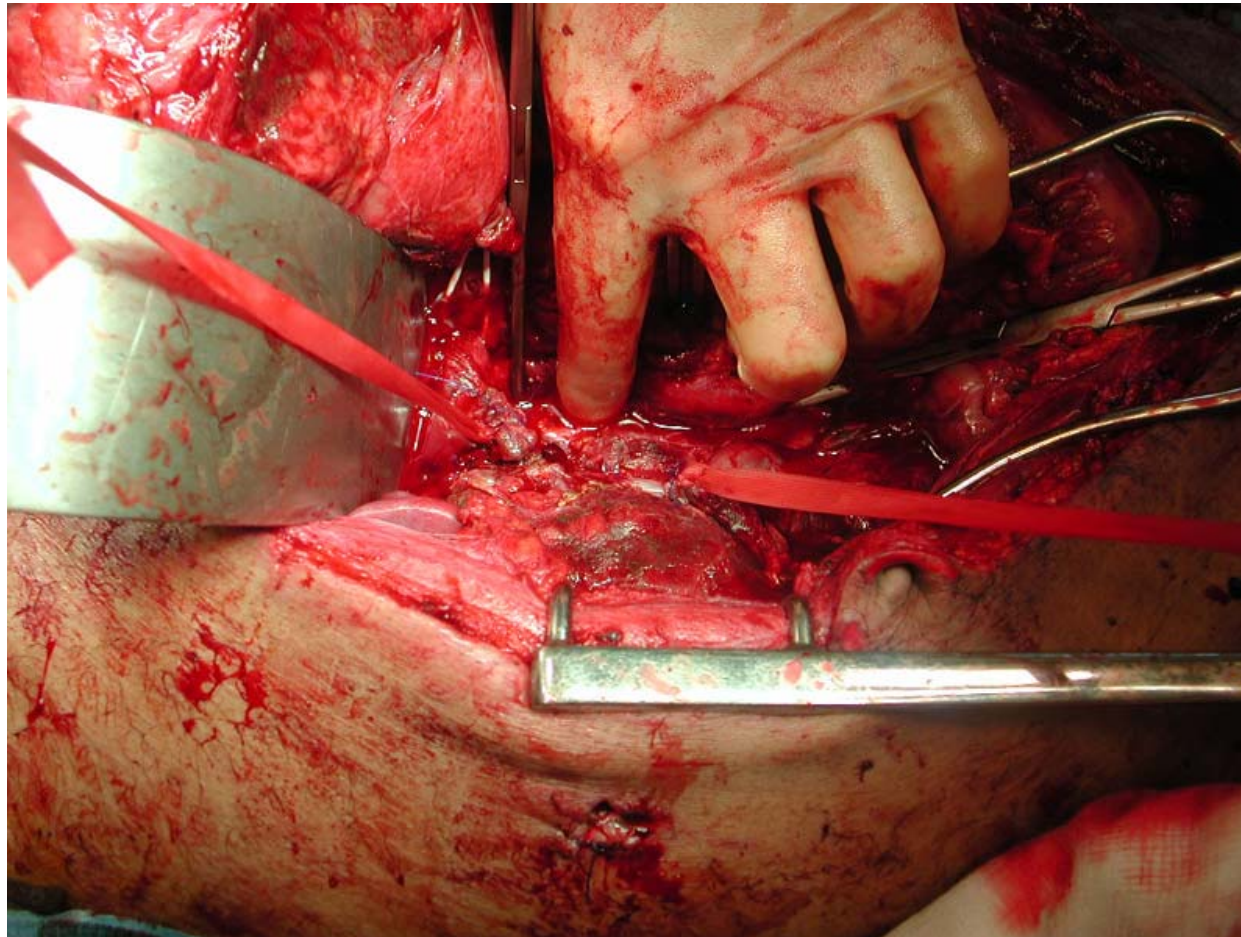


Acute management of TBI

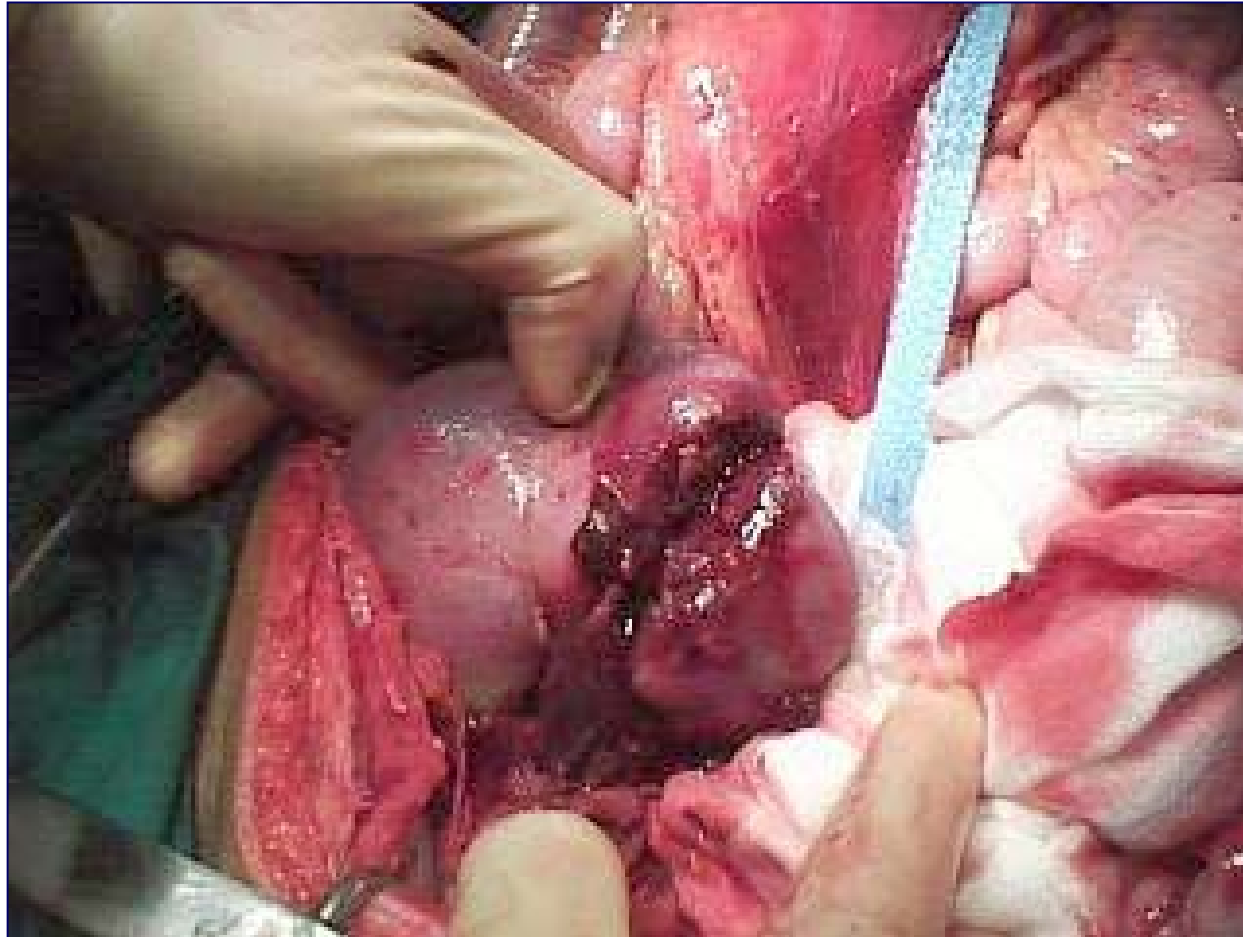
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Avoid hypotension

Stabilise bleeding



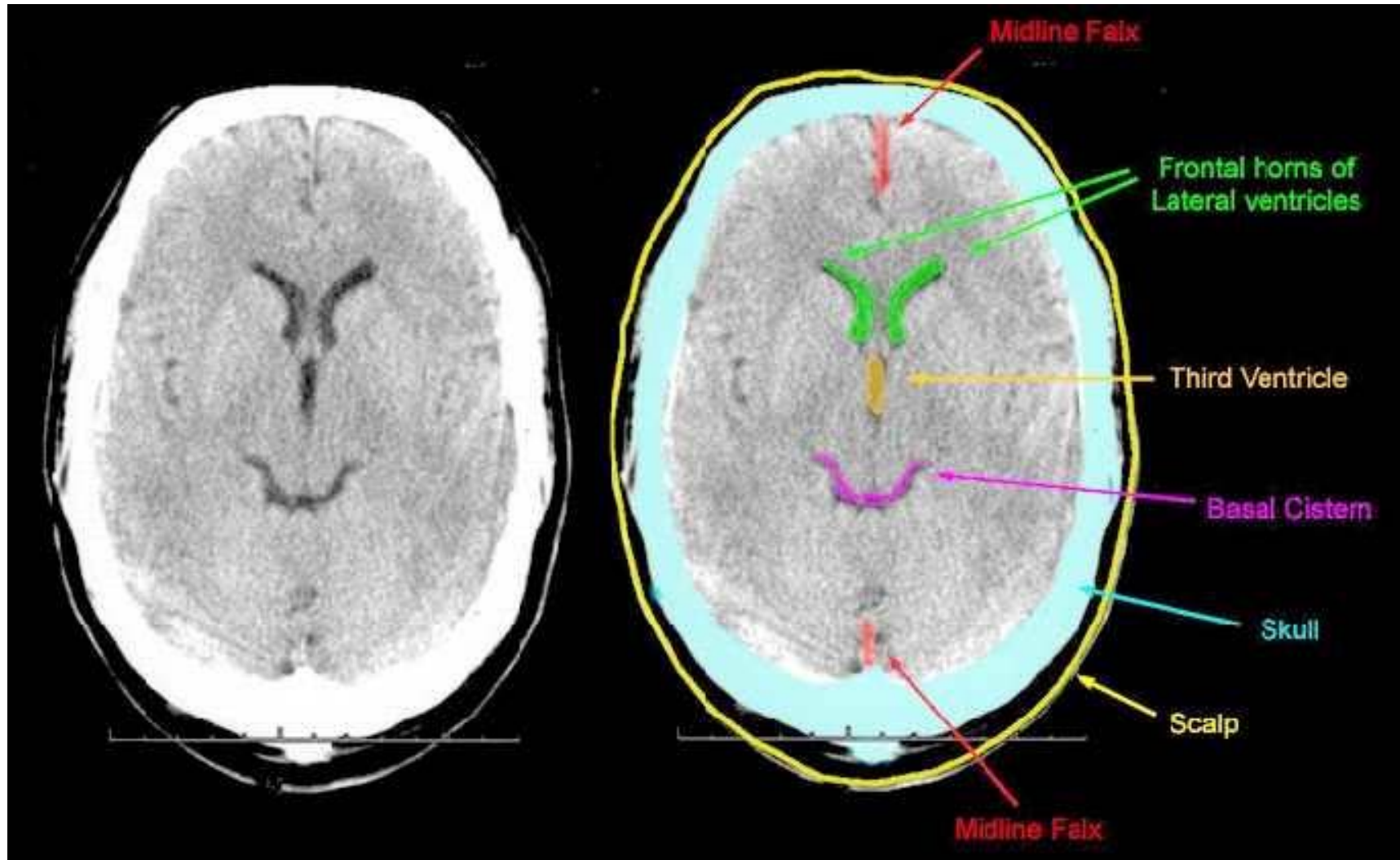
Avoid hypotension



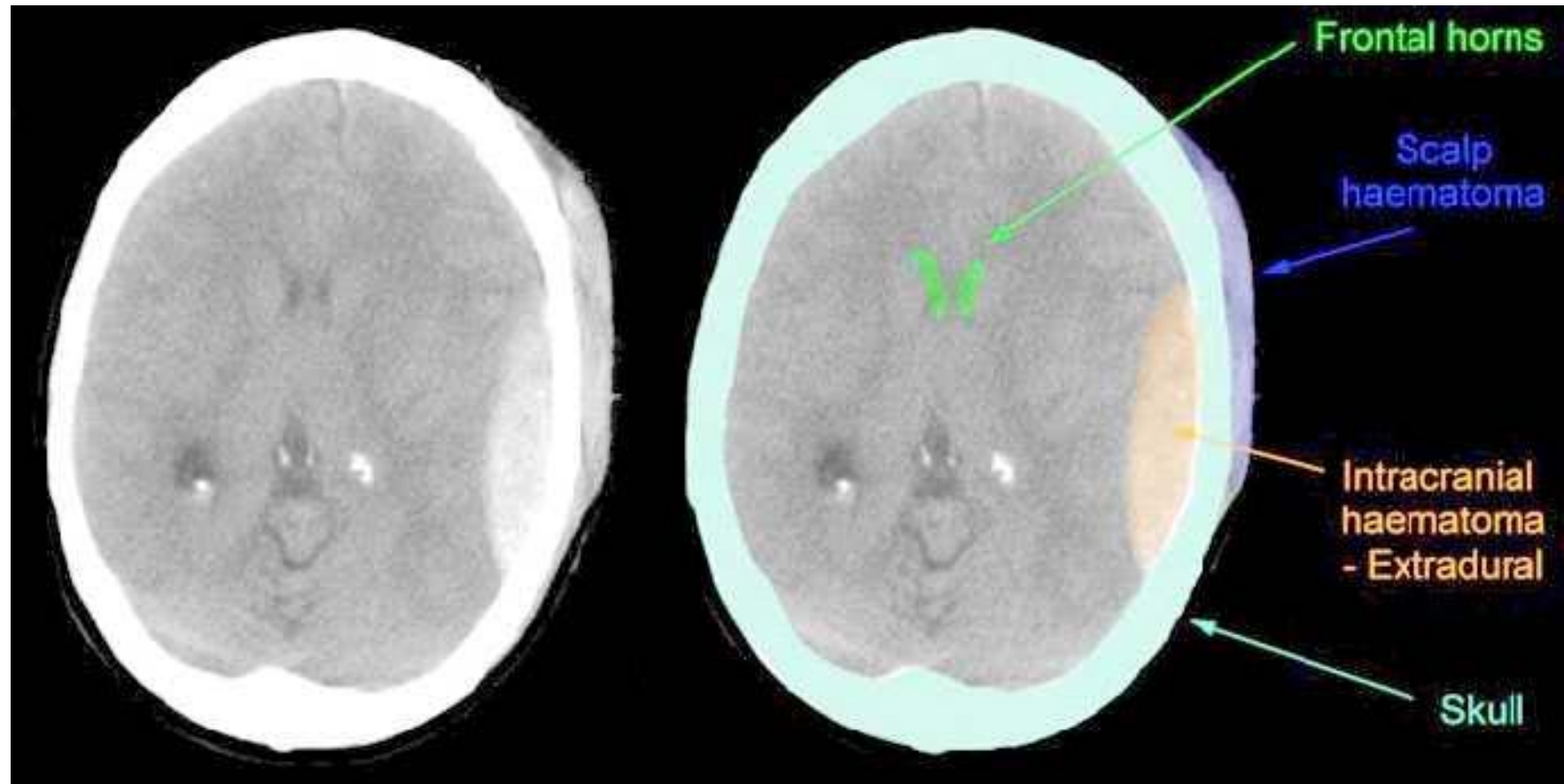
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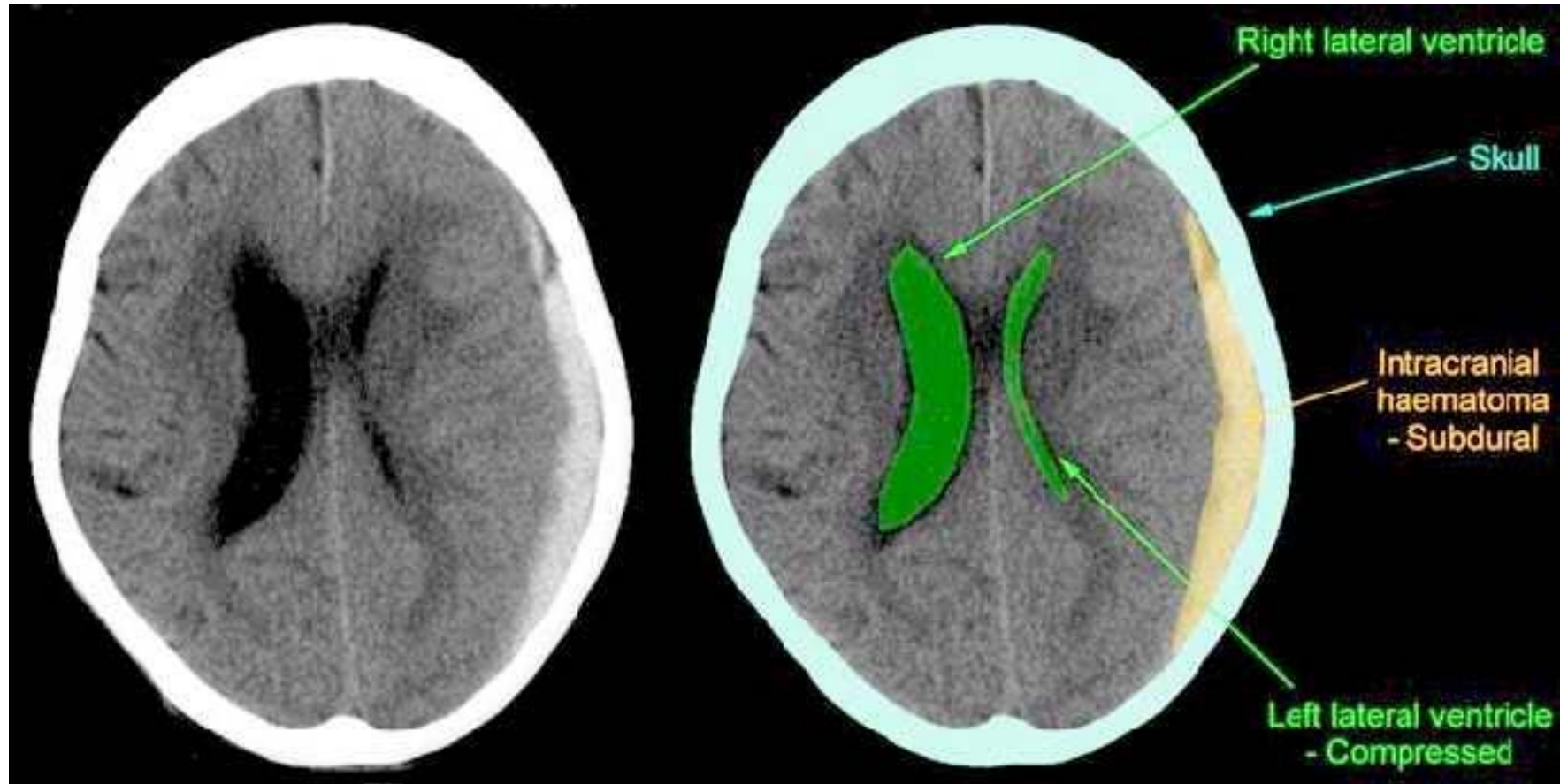
CT when appropriate



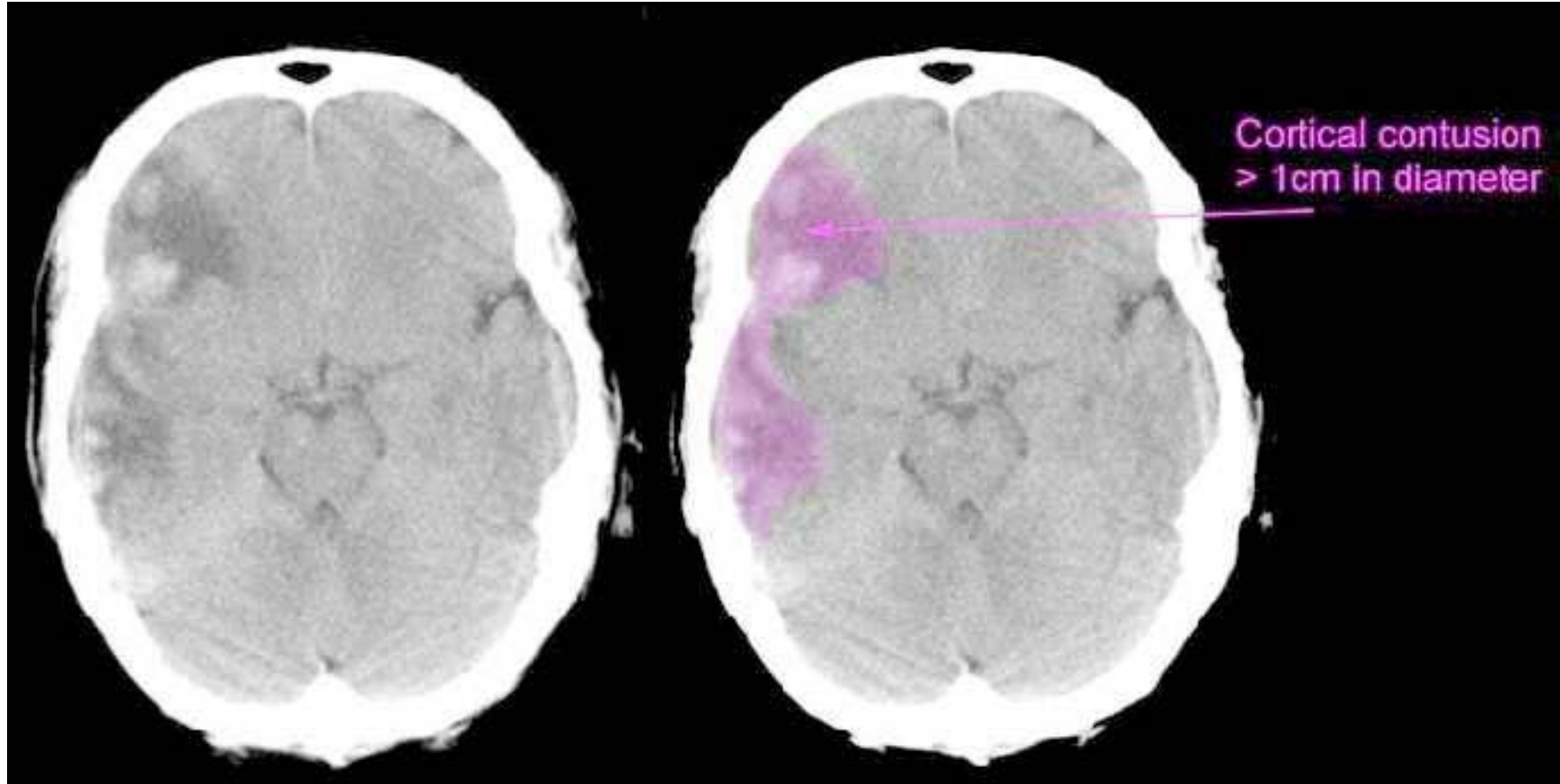
CT evaluation of TBI



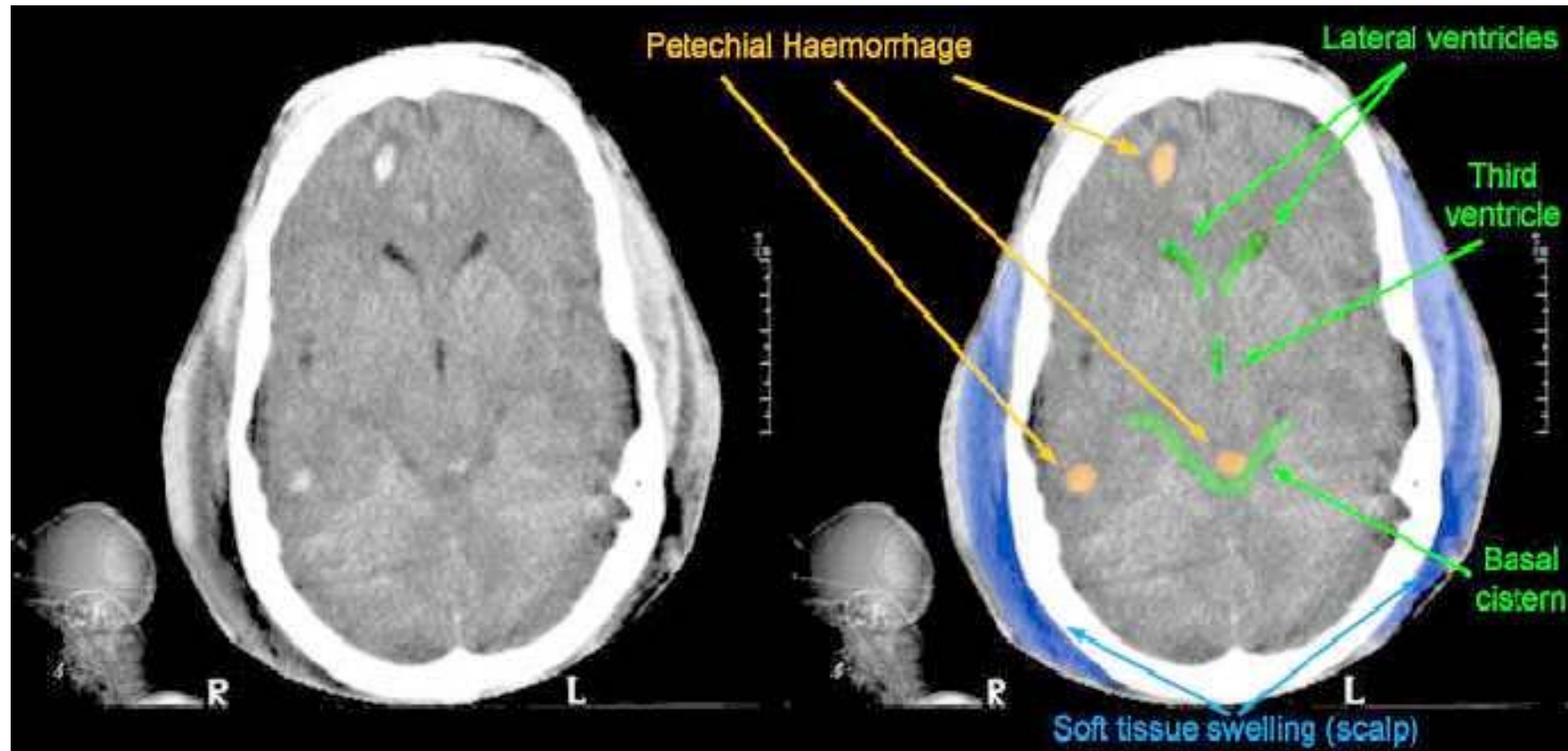
CT evaluation of TBI



CT evaluation of TBI



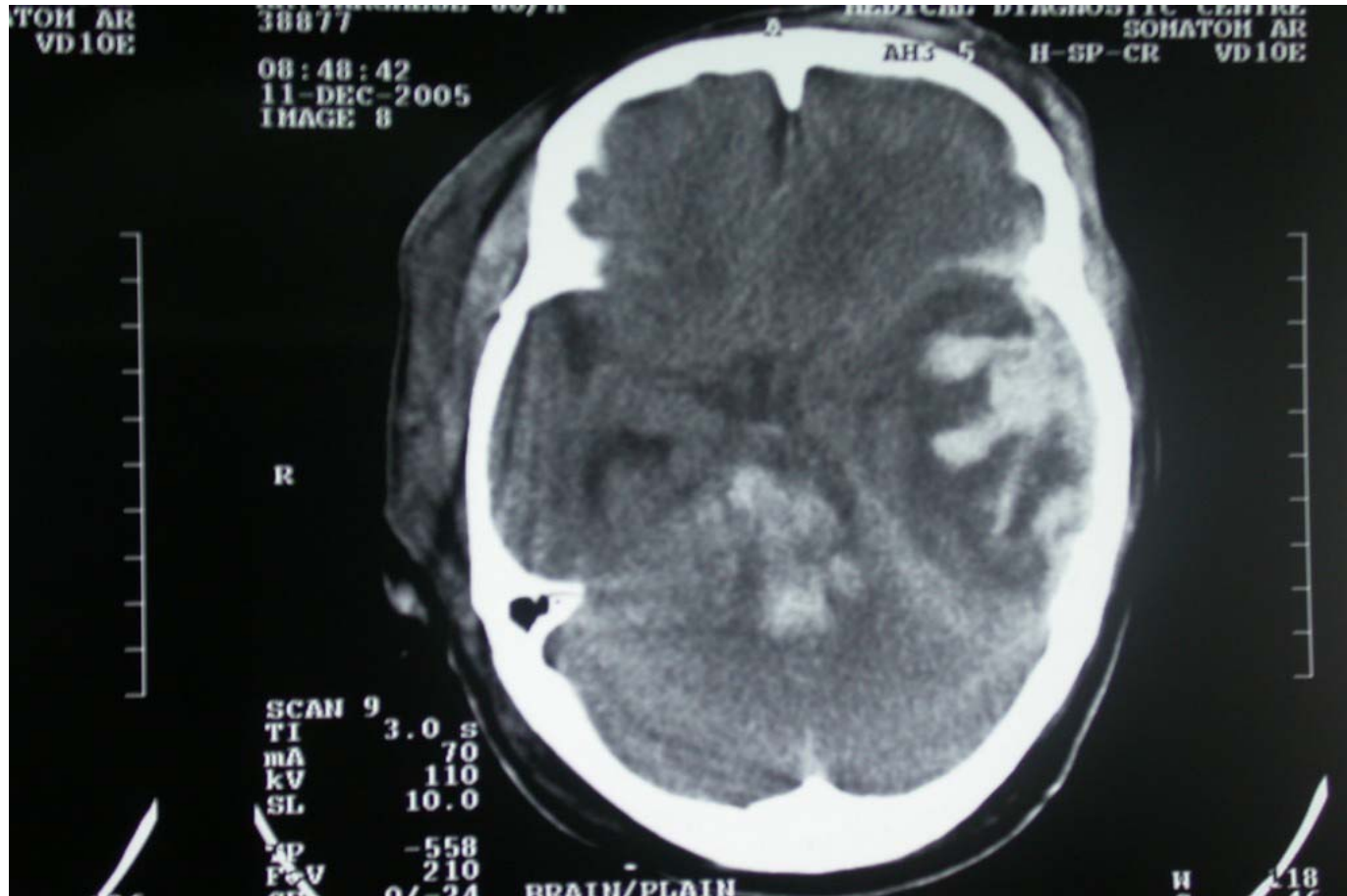
CT evaluation of TBI



CT evaluation of TBI



CT evaluation of TBI



Intensive care



What works in TBI?

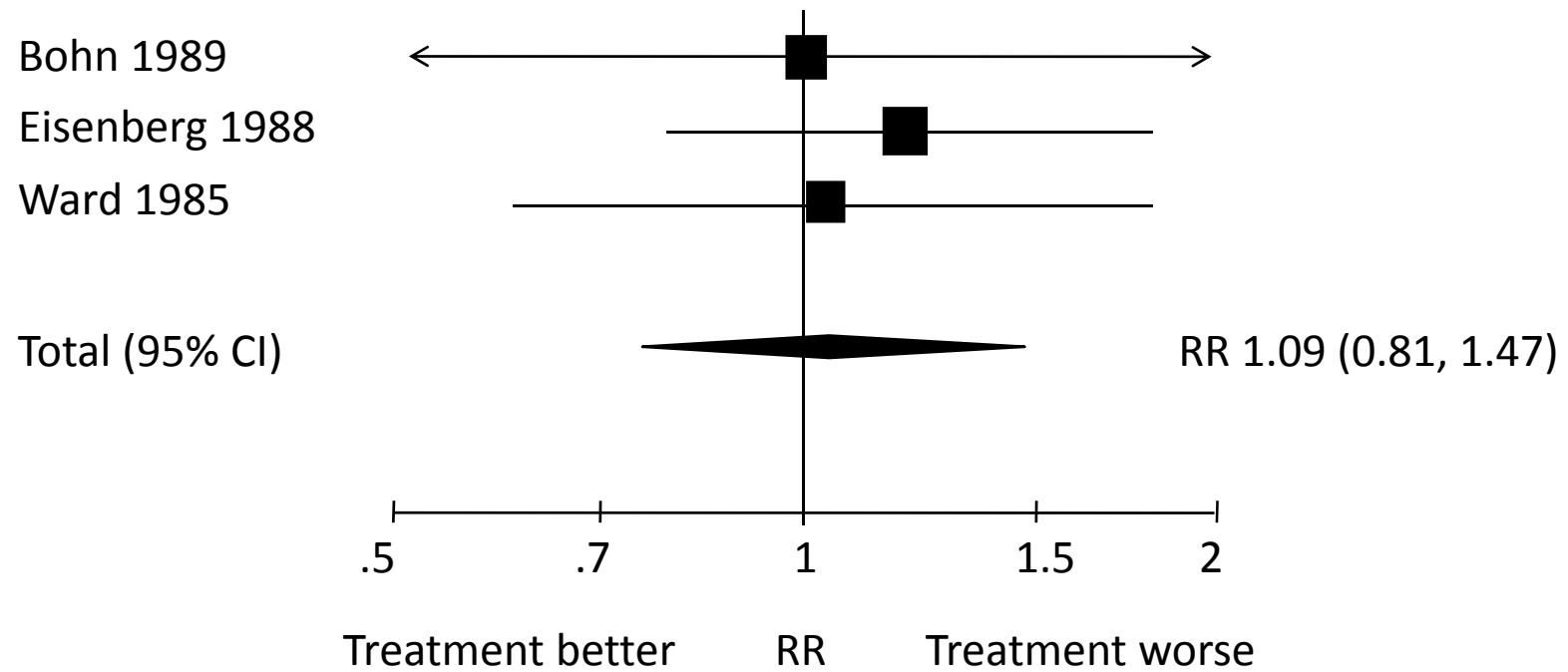
Intensive care management of severe head injury

Wide variation in use of treatments

Percent using therapy for intracranial hypertension

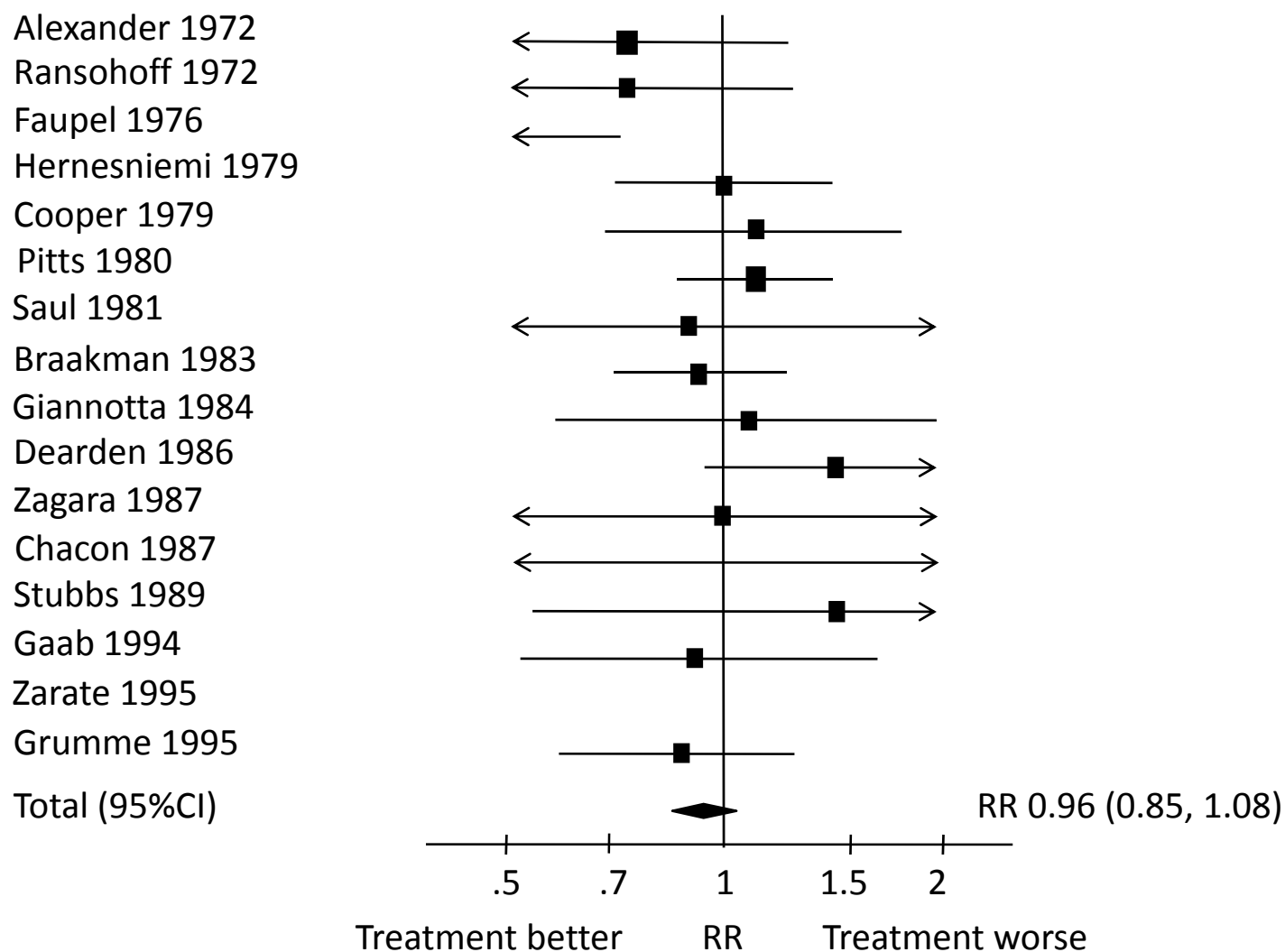
	<u>1995 USA</u>	<u>1996 UK</u>	<u>1996 UK</u>	<u>1998 UK</u>
Barbiturates	33%	56%	69%	17%
Corticosteroids	64%	49%	14%	12%
CSF drainage	44%	-	69%	5%
Hyperventilation	83%	100%	89%	78%
Mannitol	83%	100%	100%	76%
Hypothermia	-	-	20%	-

Barbiturate vs control



Corticosteroid vs control

Death (n=2119)

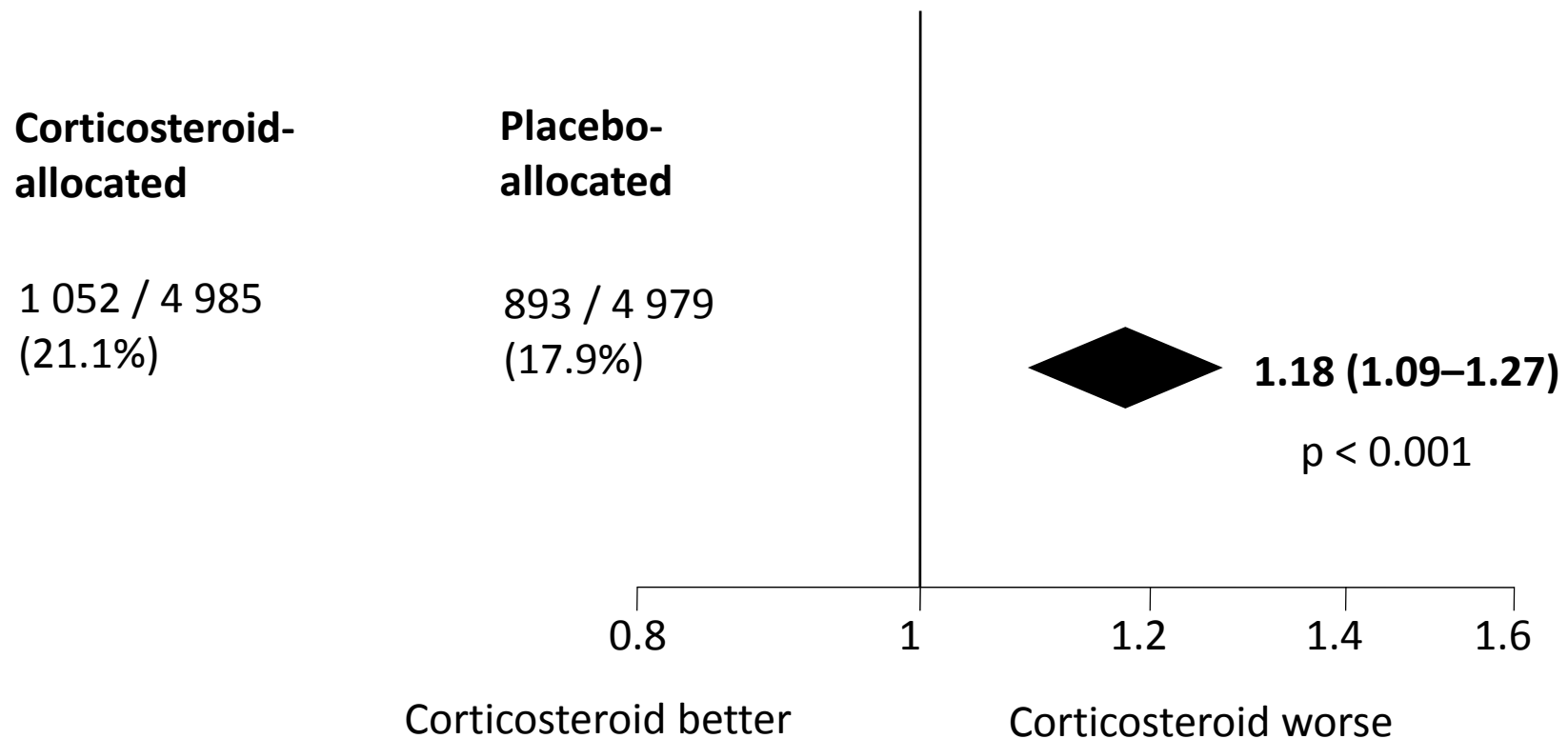


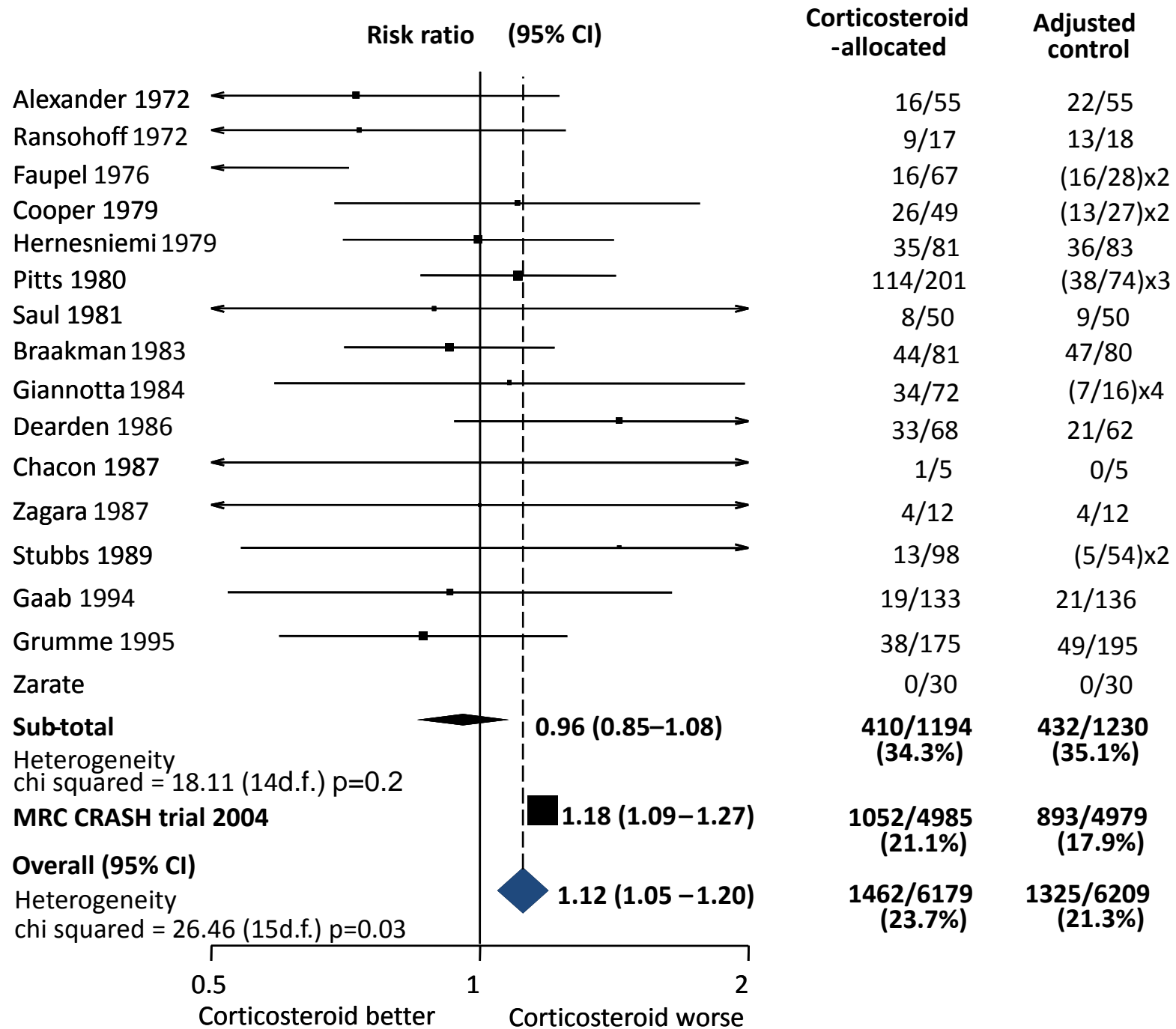
MRC
Medical Research Council



A large simple placebo controlled trial, among adults with head injury and impaired consciousness, of the effects of a 48-hour infusion of corticosteroids on death and neurological disability

Death within 14 days



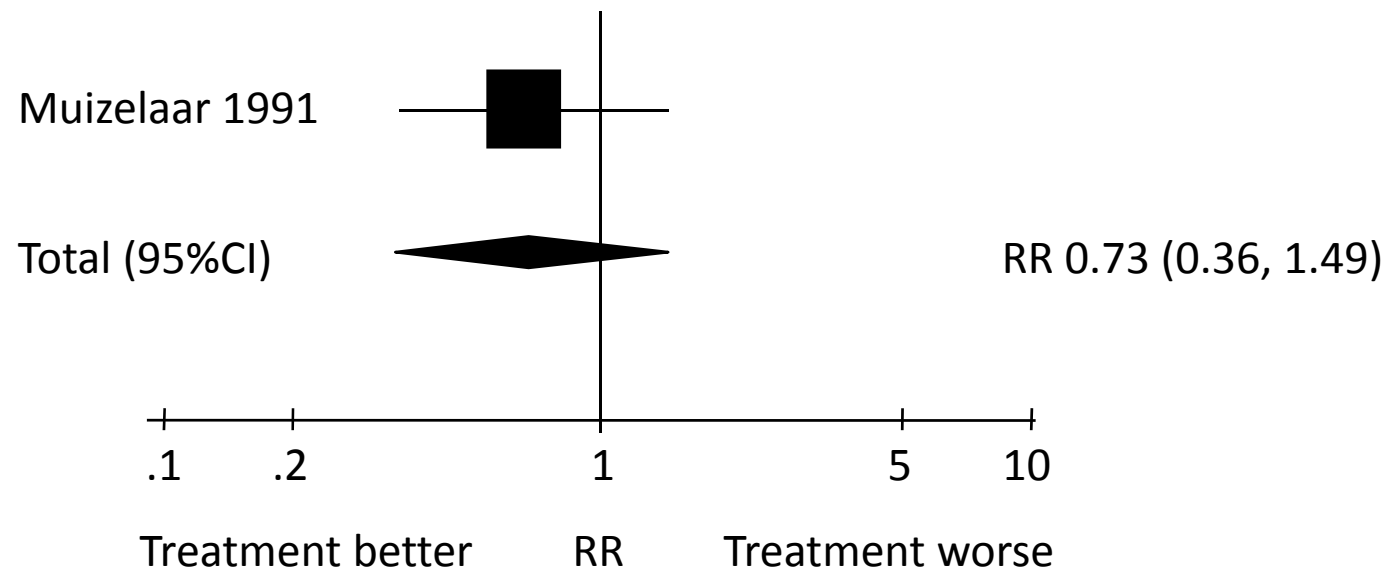


CSF drainage vs control

No randomised controlled trials

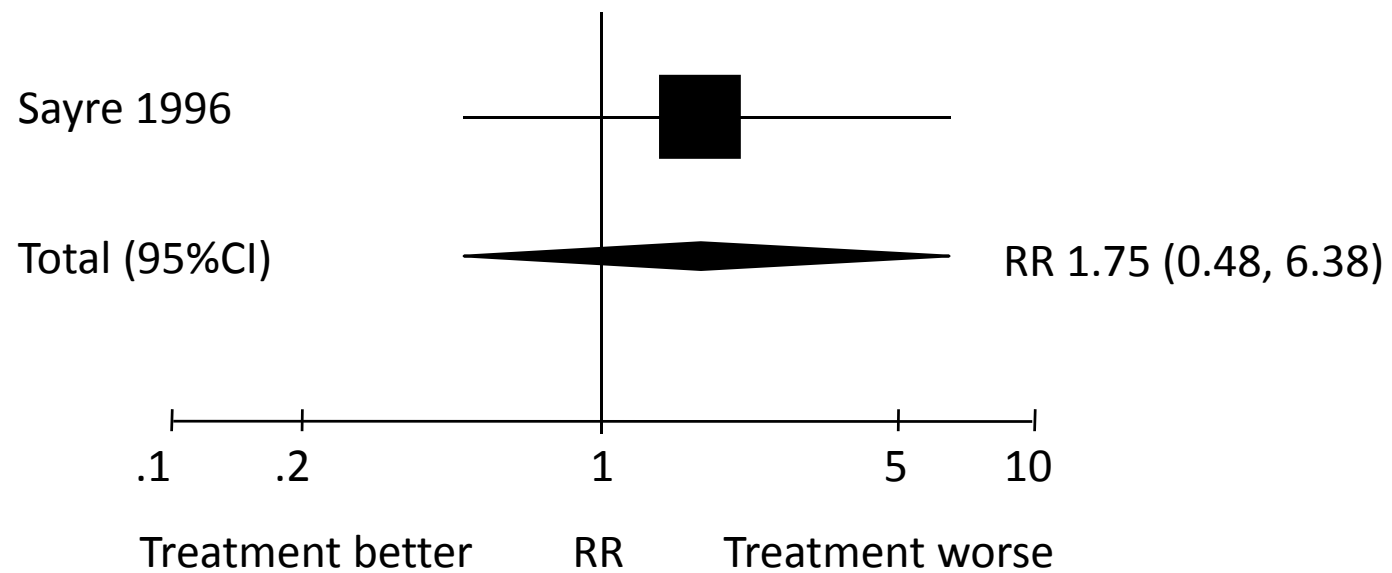
Hyperventilation vs control

Death (n=77)



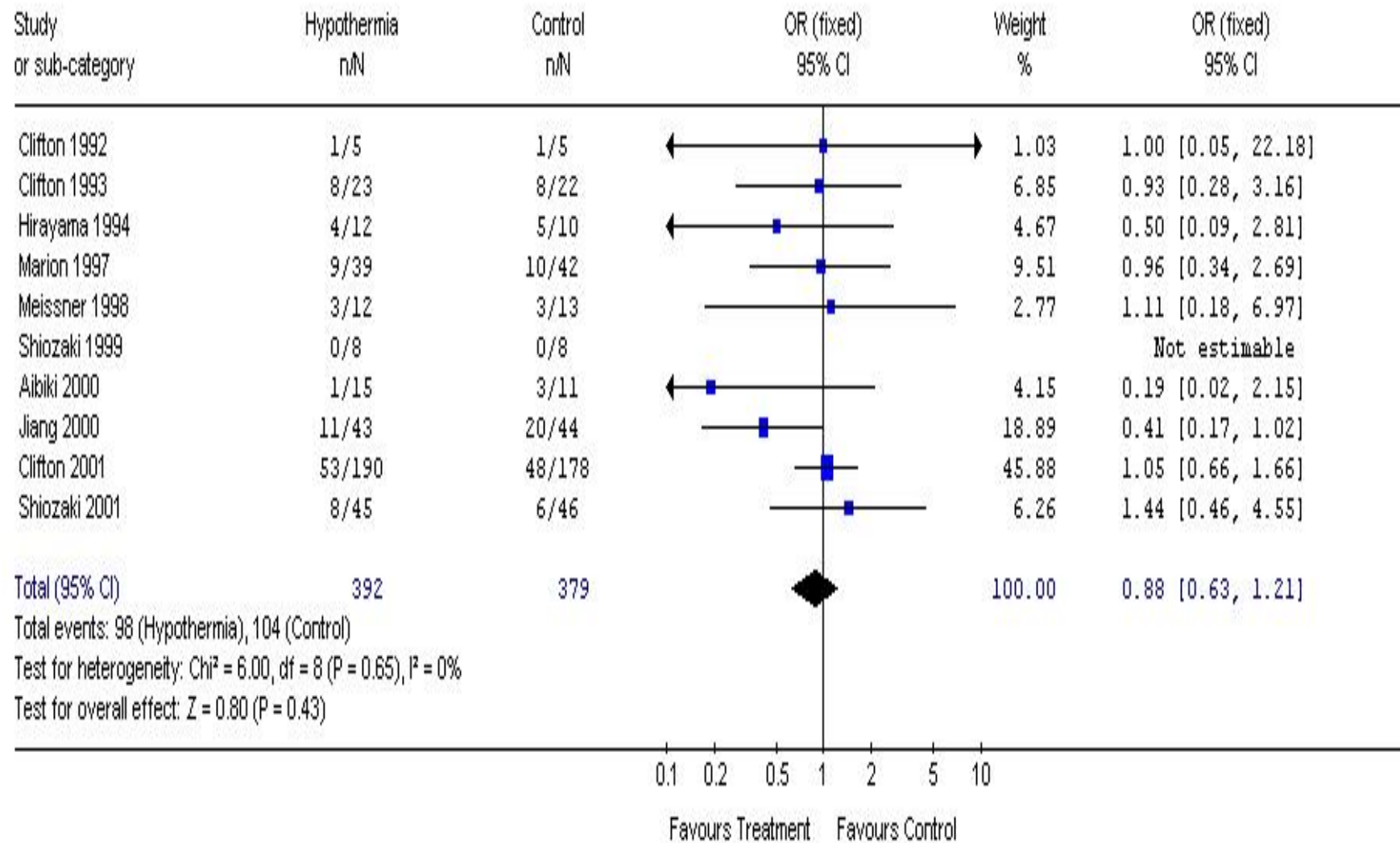
Mannitol vs control

Death (n=41)



Hyperthermia vs control

Death (n=771)



What works in head injury?

- Stabilise the patient
- Prevent secondary neuronal damage
- Neuroprotection – we don't know
- Reduce bleeding – we don't know
- Large treatment effects unlikely
- But even moderate effects worthwhile