

# Acute Management of TBI

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

# Acute management of TBI

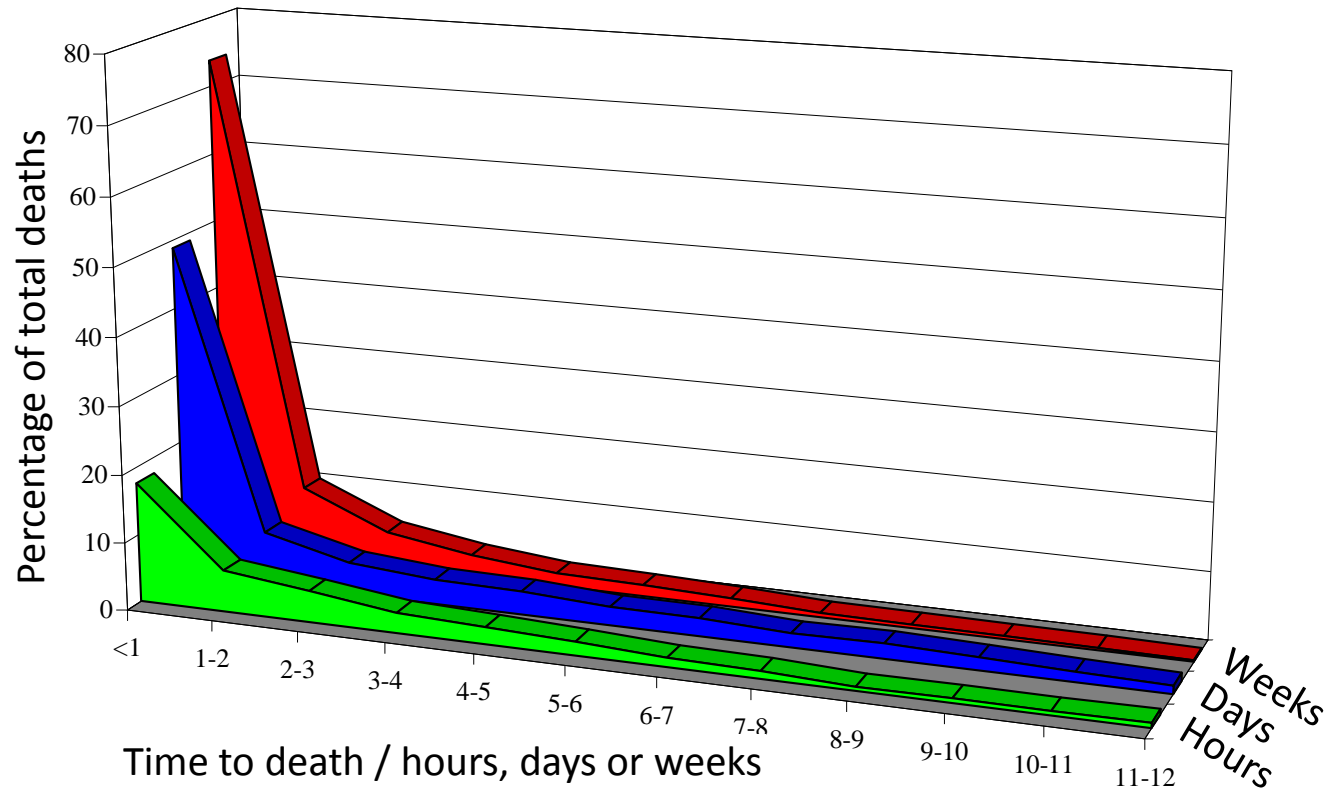
## Principles:

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



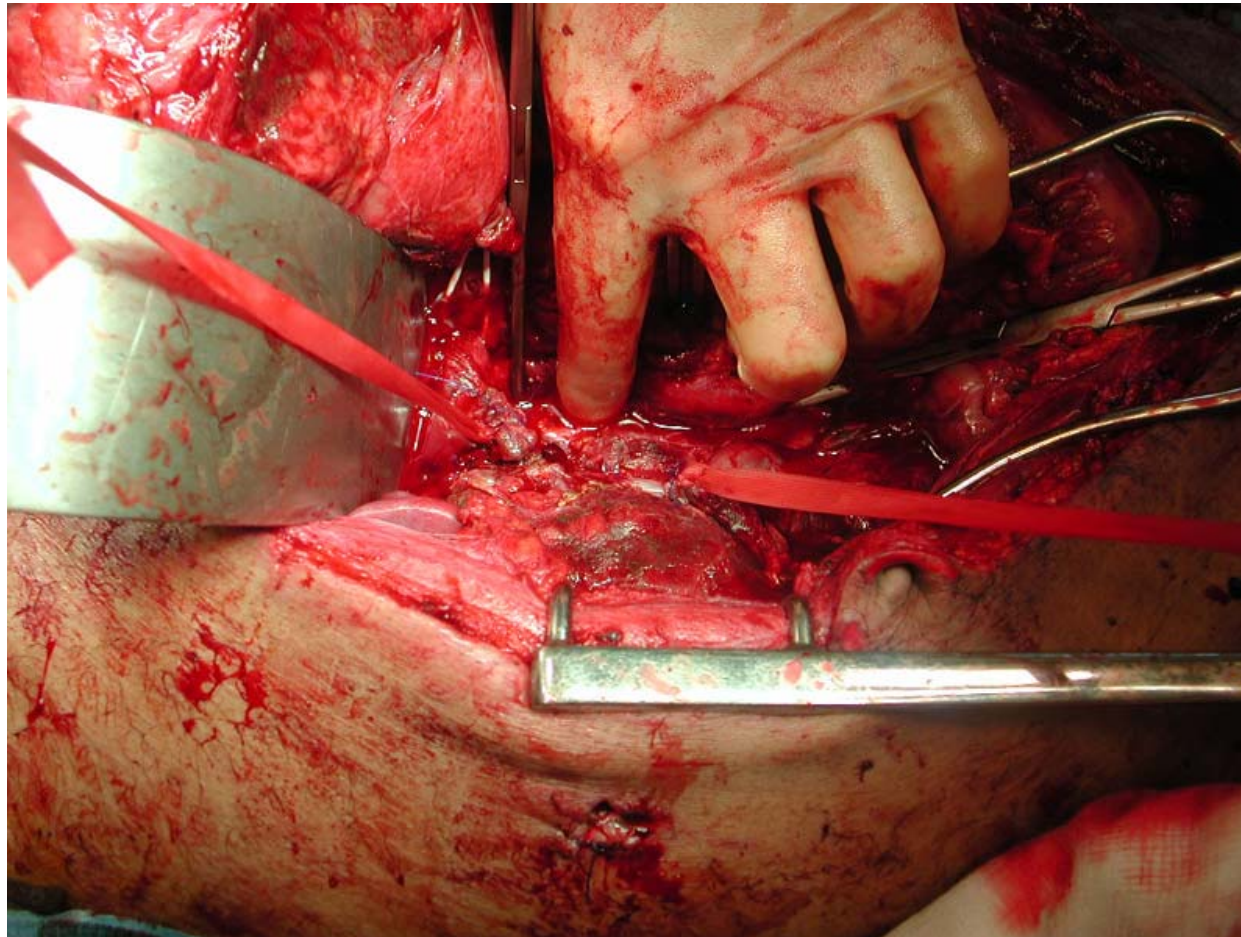


# Acute management of TBI

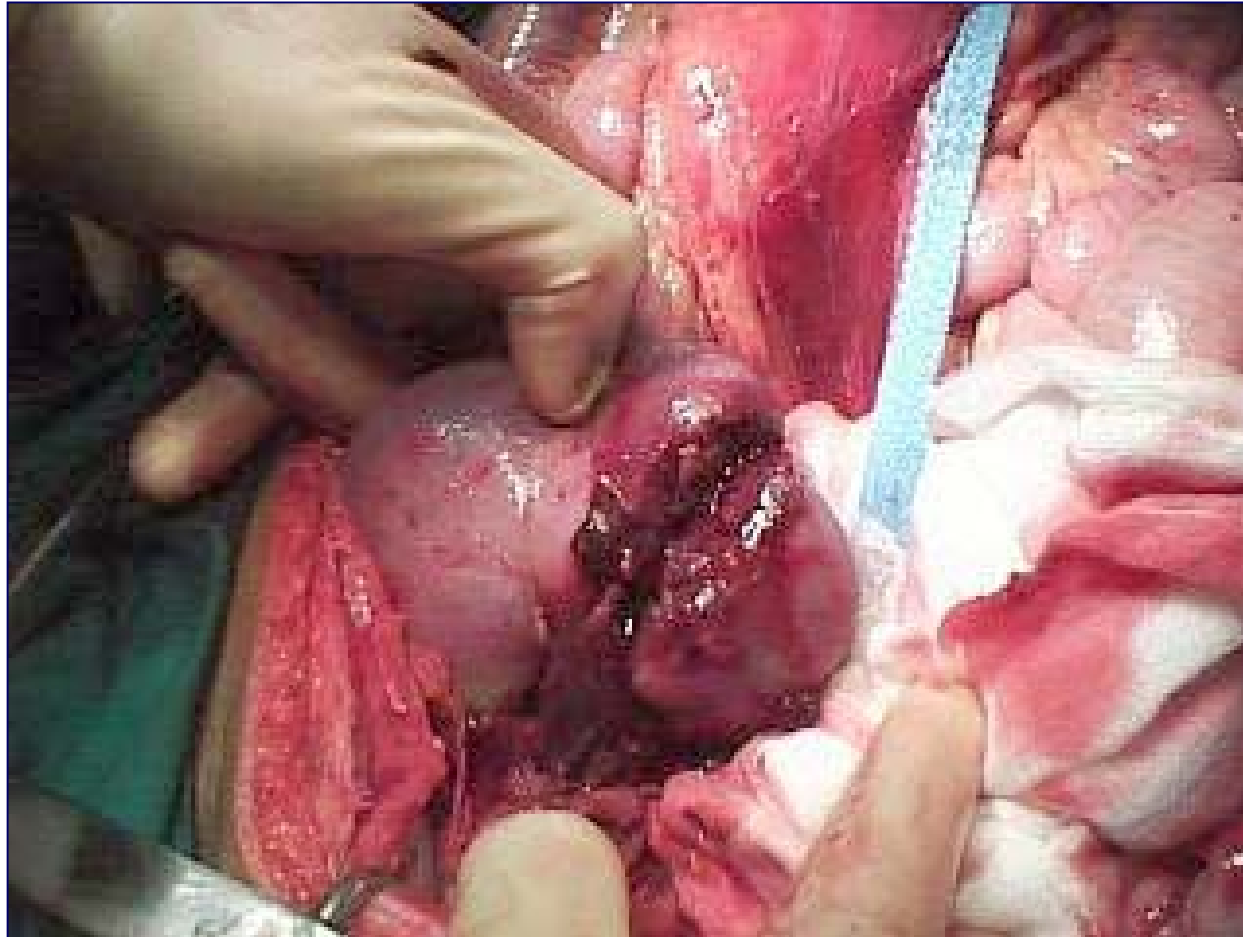
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# Avoid hypotension

Stabilise bleeding



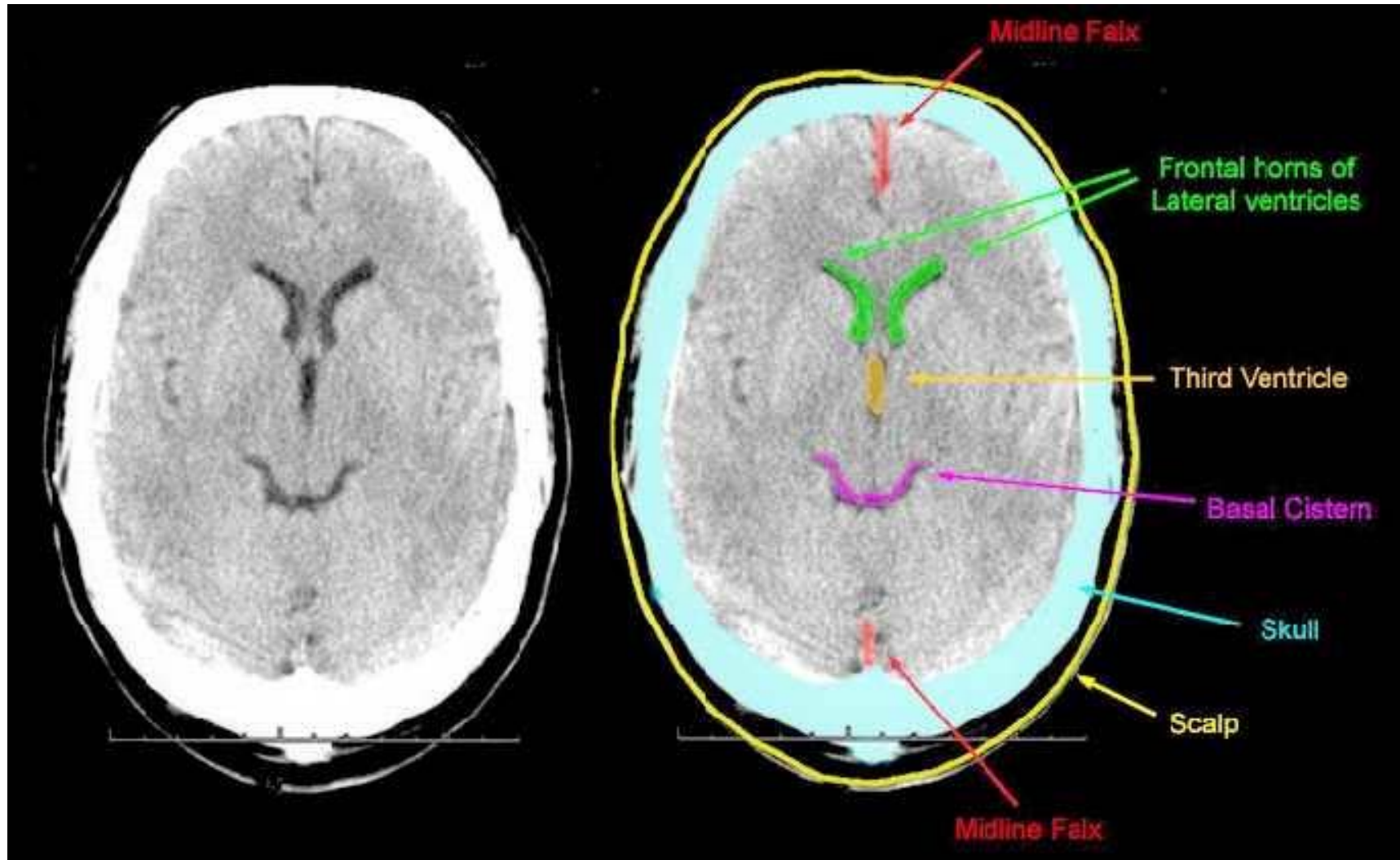
# Avoid hypotension



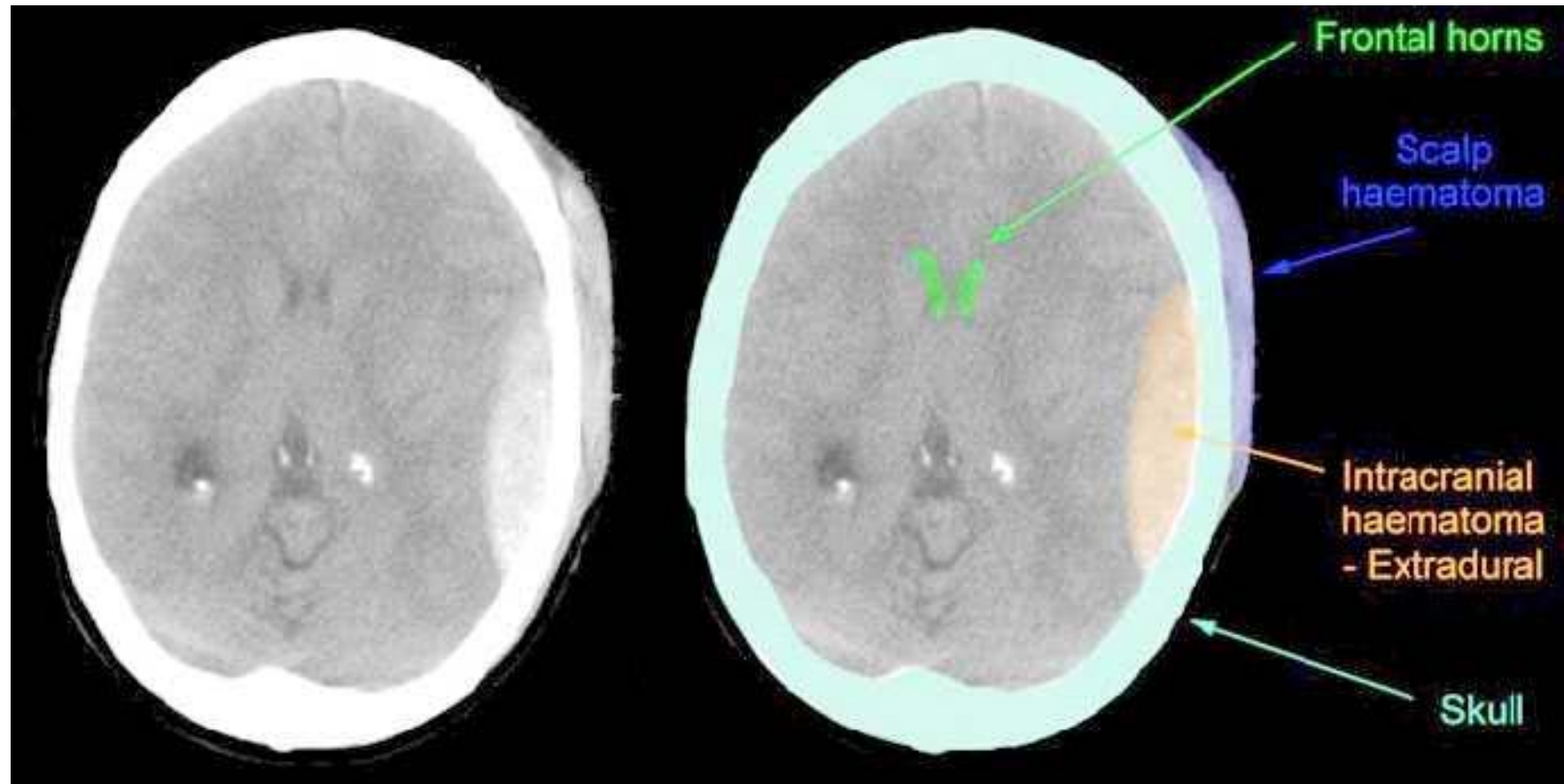
# Acute management of TBI

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# CT when appropriate

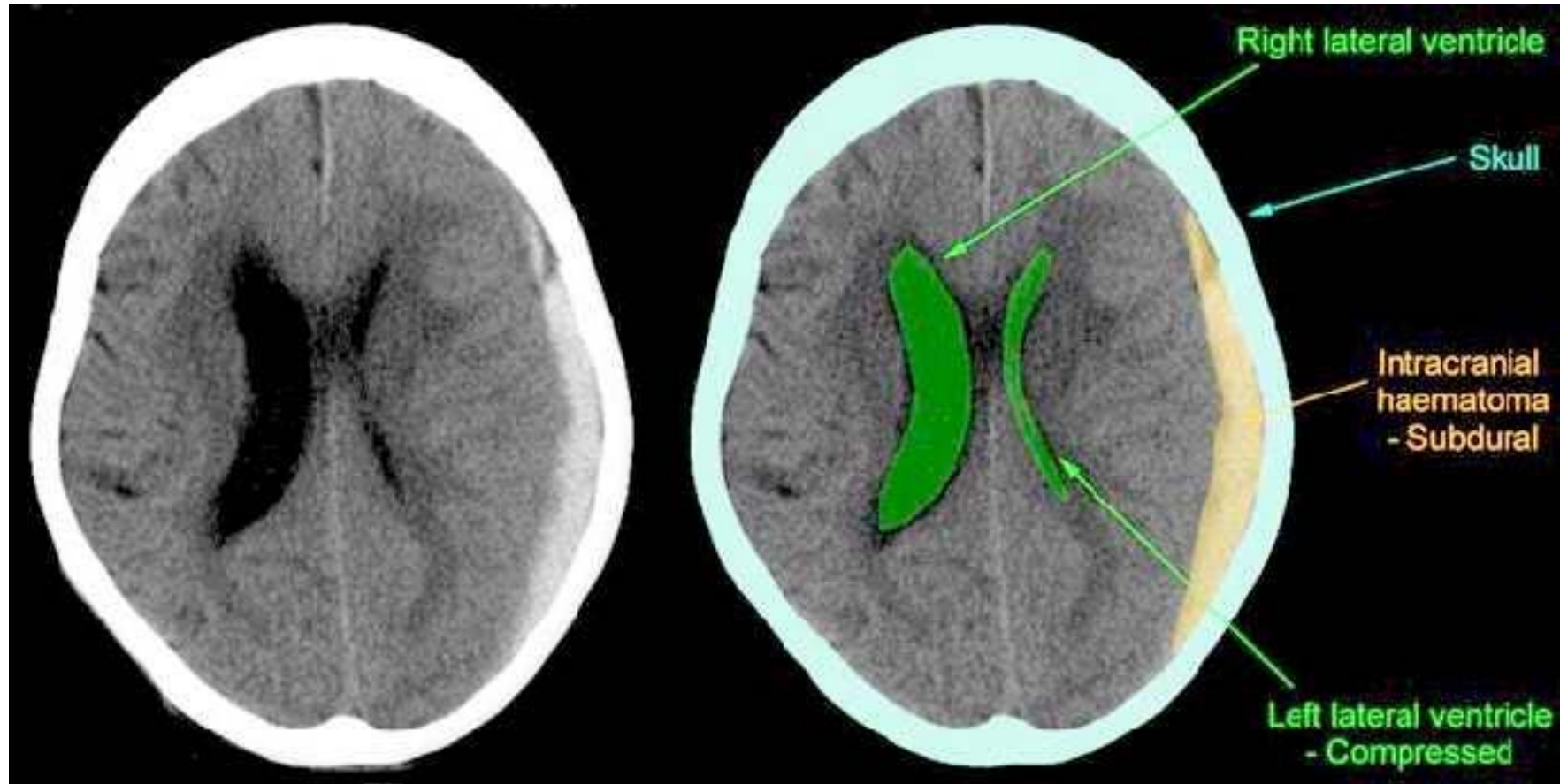


# CT evaluation of TBI

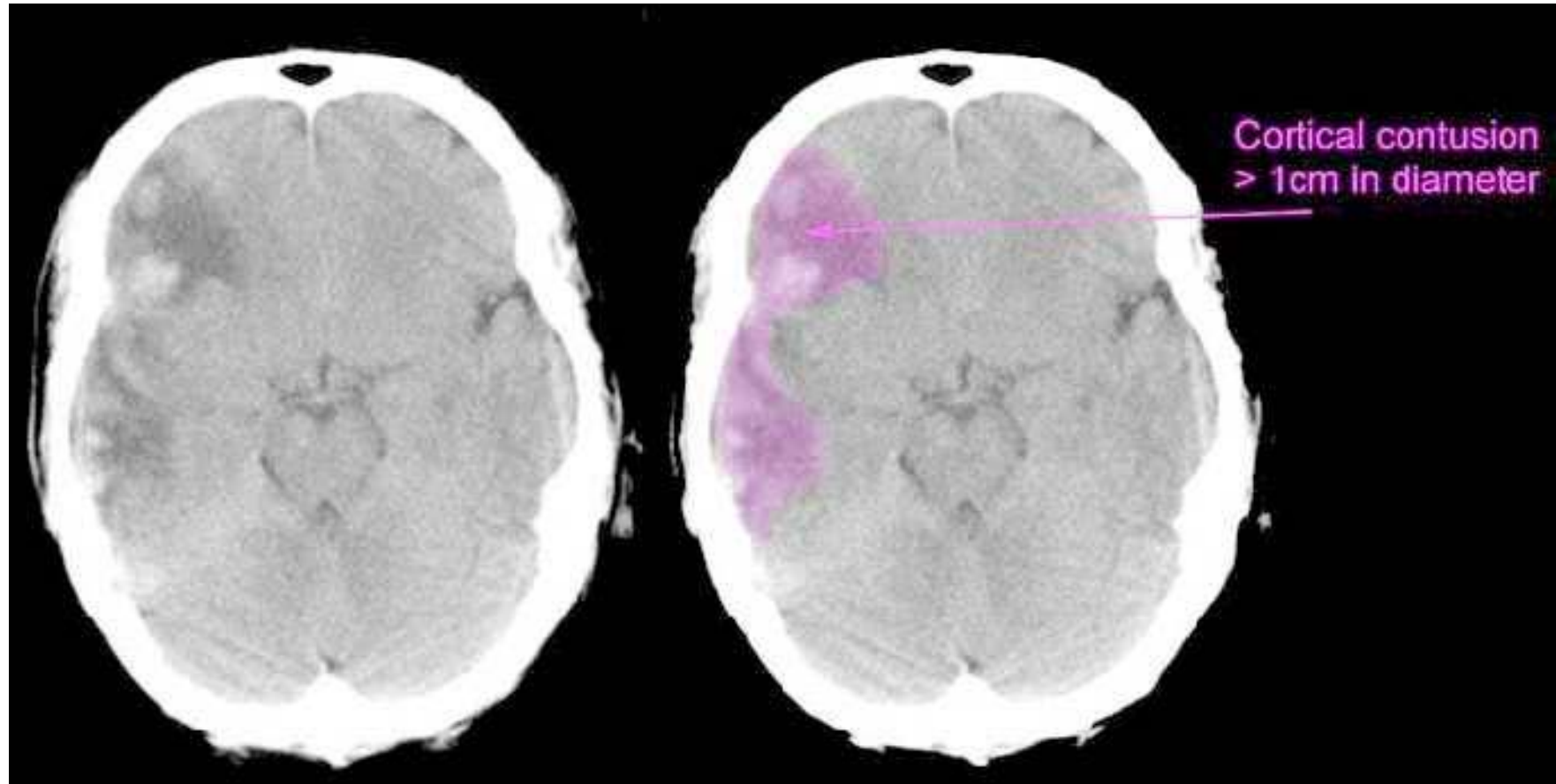




# CT evaluation of TBI

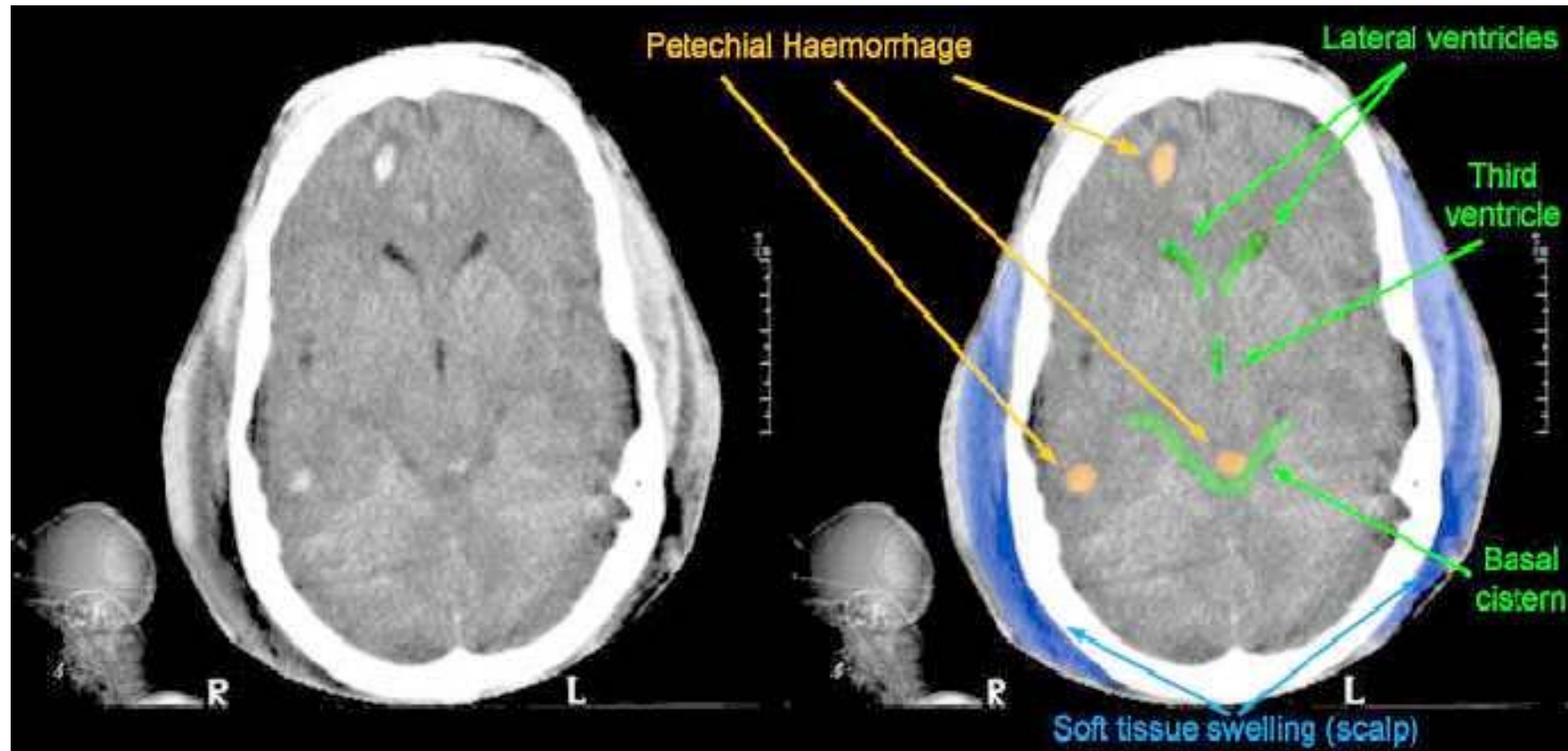


# CT evaluation of TBI



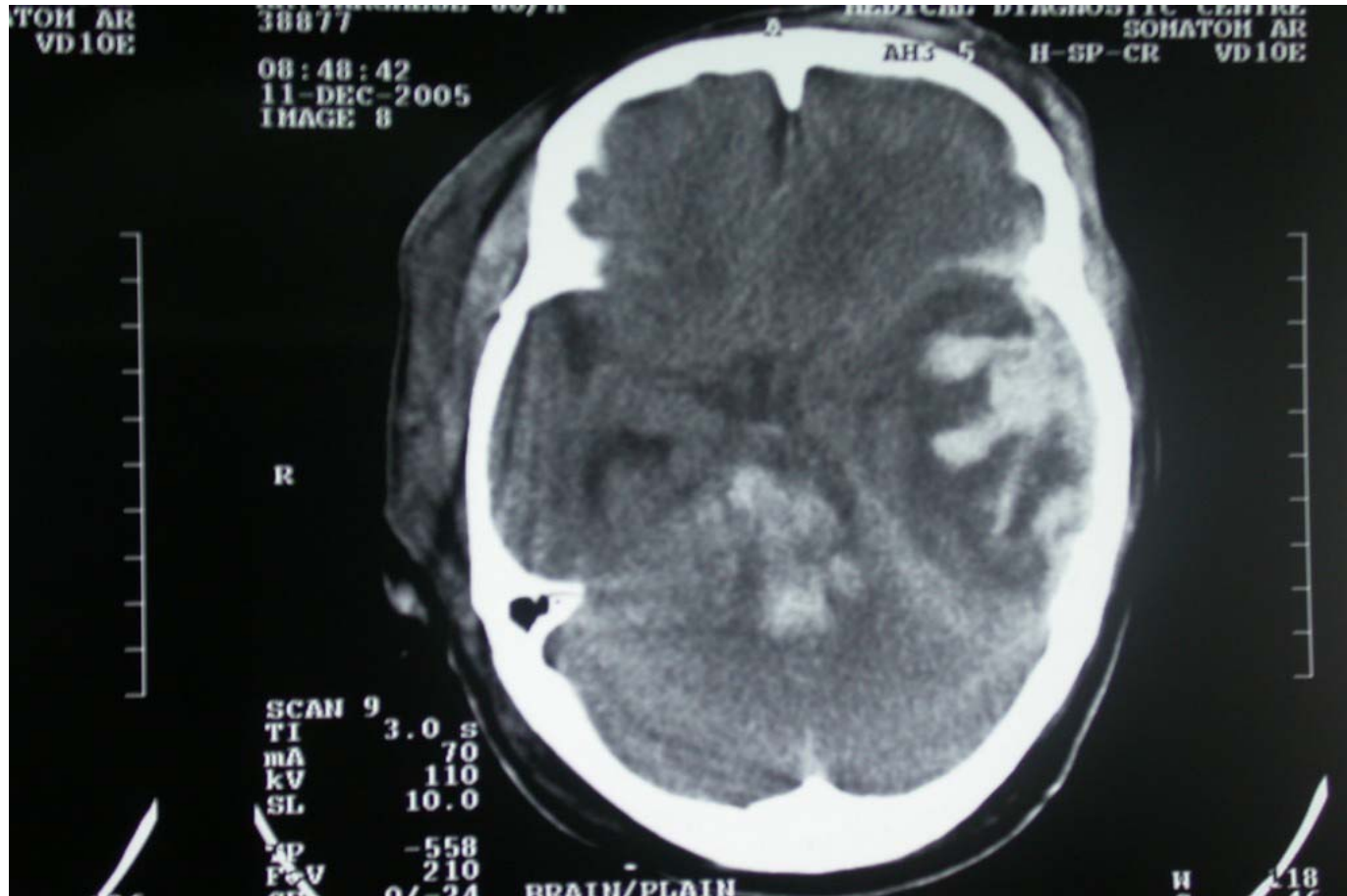


# CT evaluation of TBI





# CT evaluation of TBI



# Intensive care



What works in TBI?

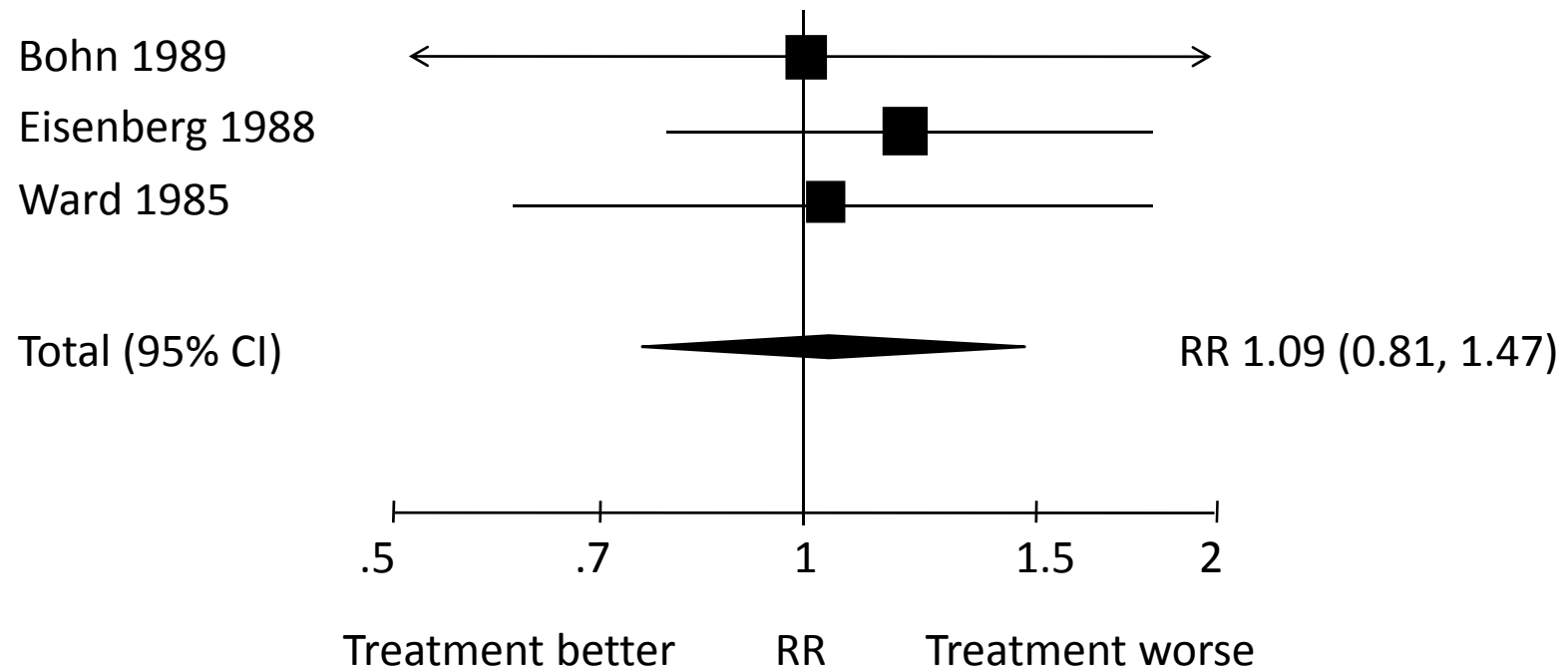
# Intensive care management of severe head injury

## Wide variation in use of treatments

### Percent using therapy for intracranial hypertension

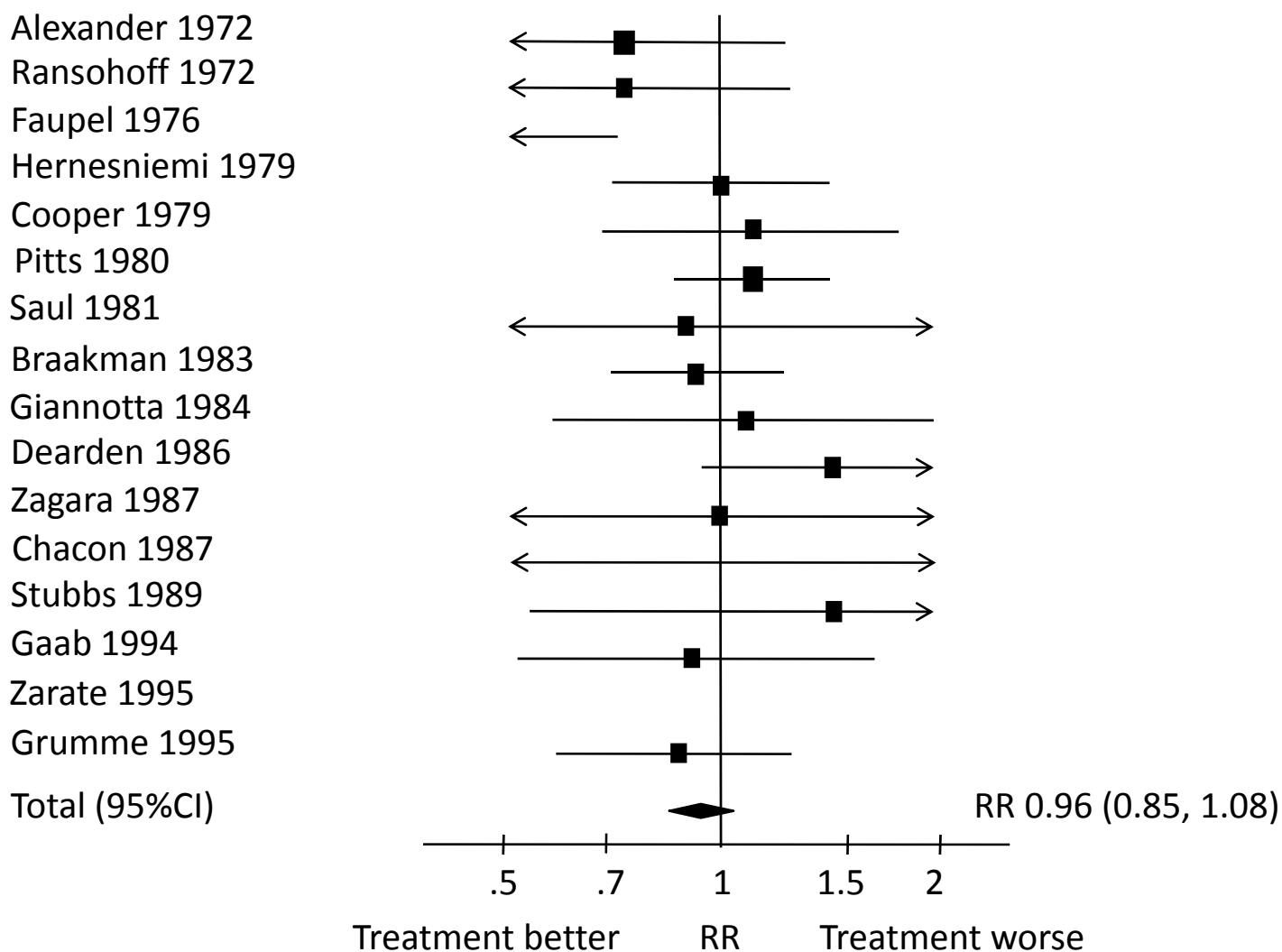
	<u>1995 USA</u>	<u>1996 UK</u>	<u>1996 UK</u>	<u>1998 UK</u>
Barbiturates	33%	56%	69%	17%
Corticosteroids	64%	49%	14%	12%
CSF drainage	44%	-	69%	5%
Hyperventilation	83%	100%	89%	78%
Mannitol	83%	100%	100%	76%
Hypothermia	-	-	20%	-

# Barbiturate vs control



# Corticosteroid vs control

Death (n=2119)



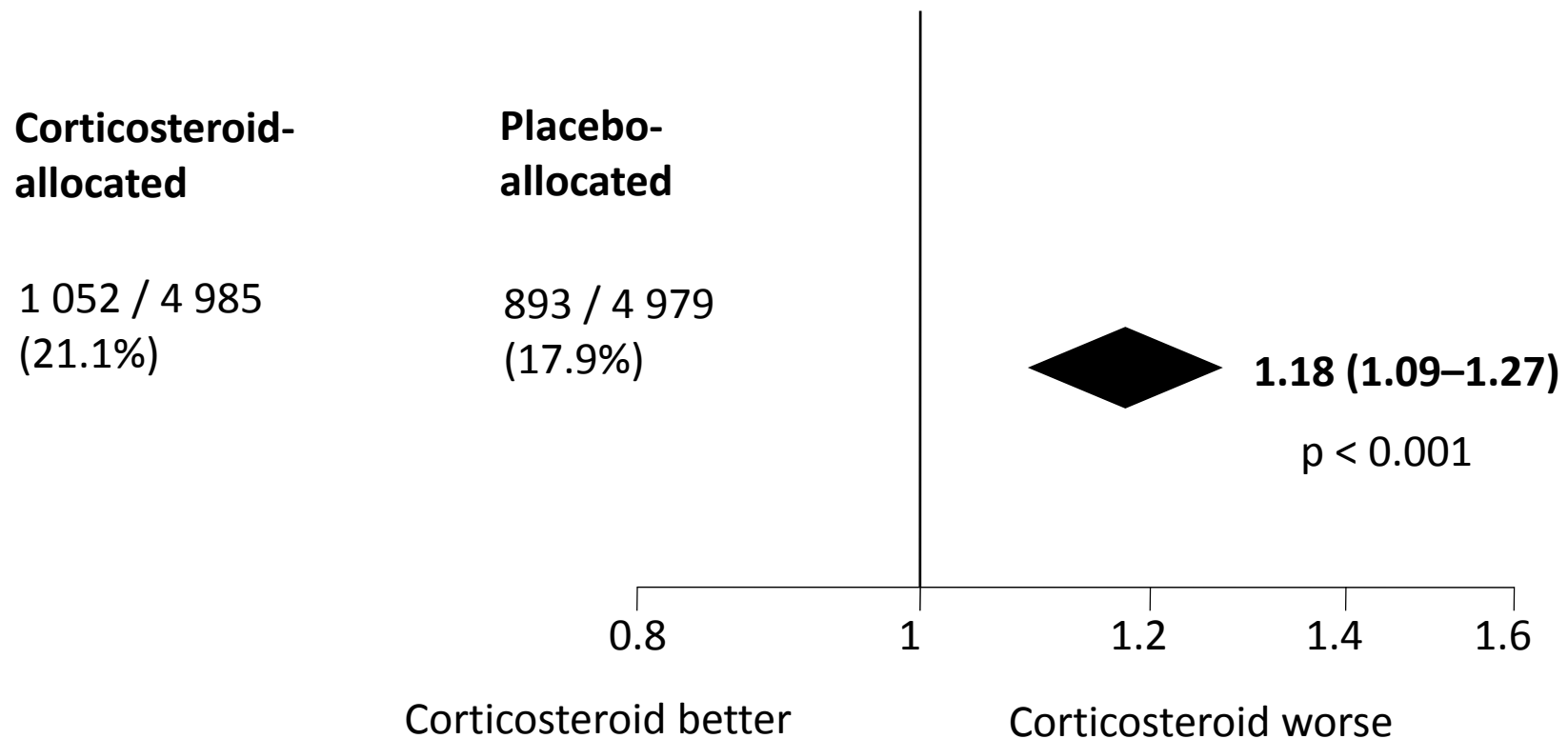


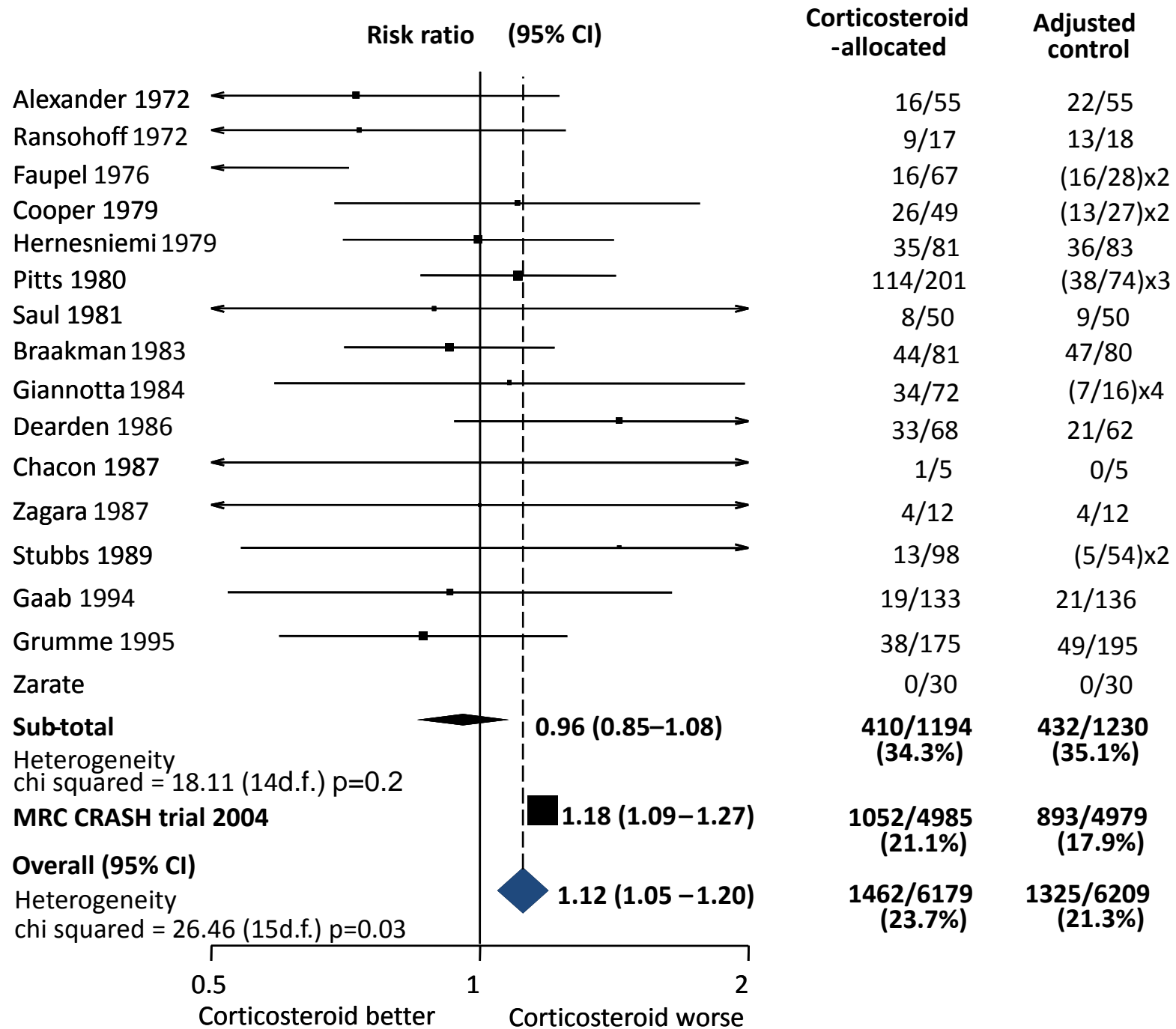
**MRC**  
Medical Research Council



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



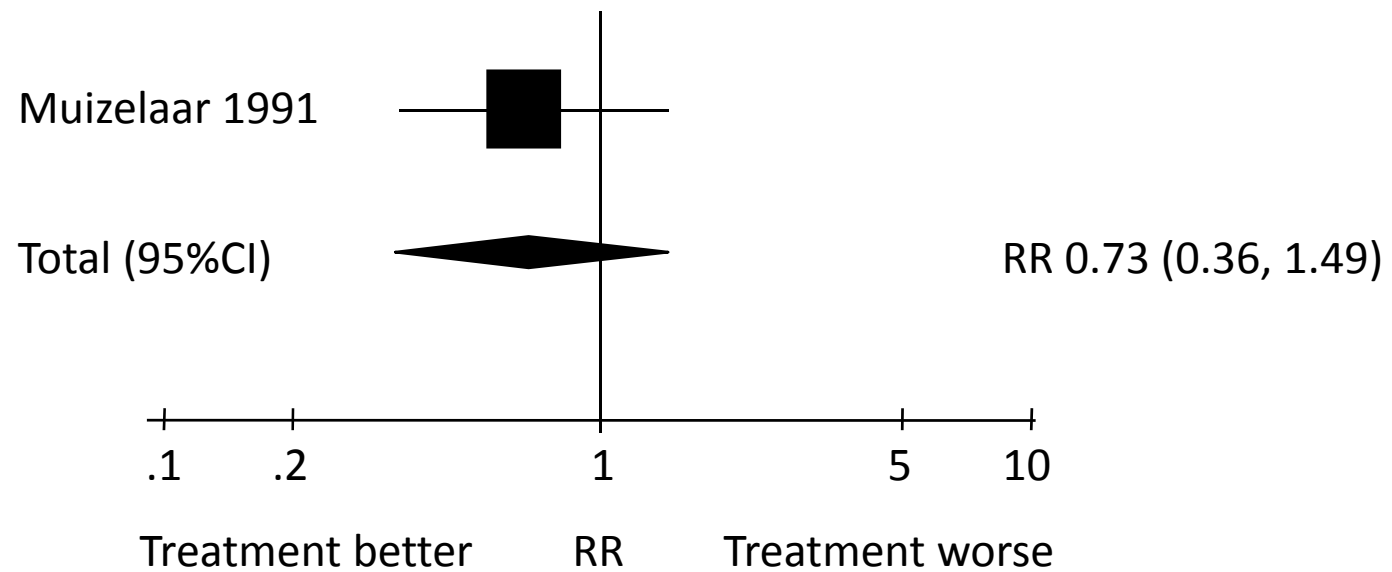


# CSF drainage vs control

No randomised controlled trials

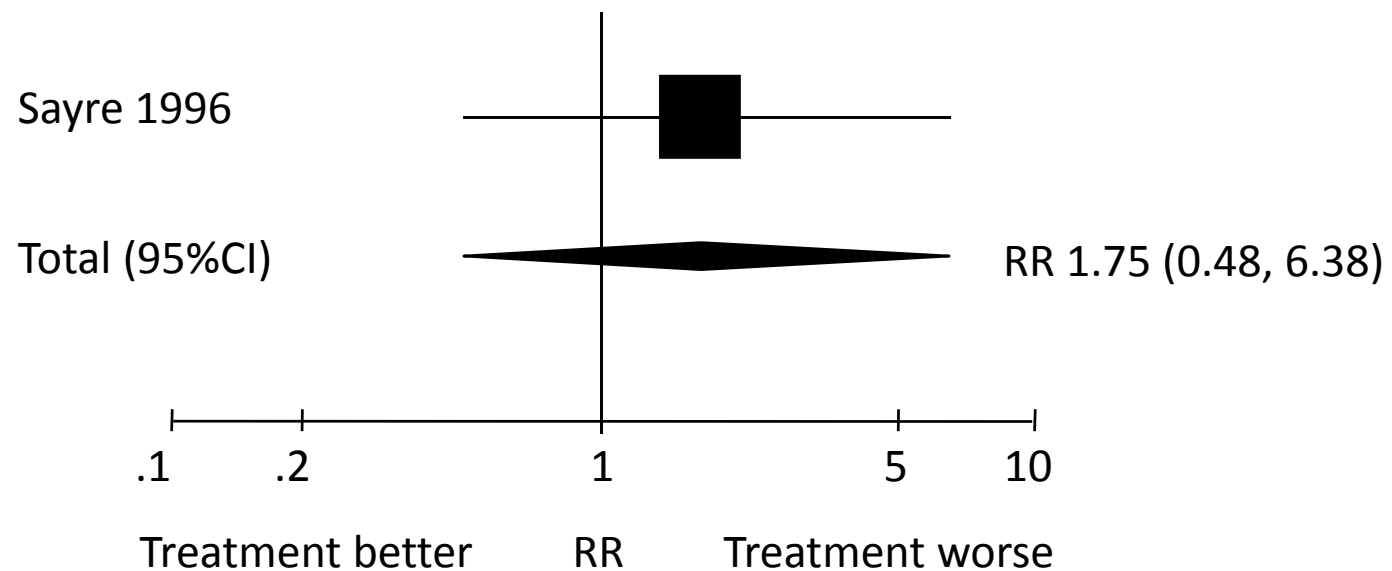
# Hyperventilation vs control

*Death (n=77)*



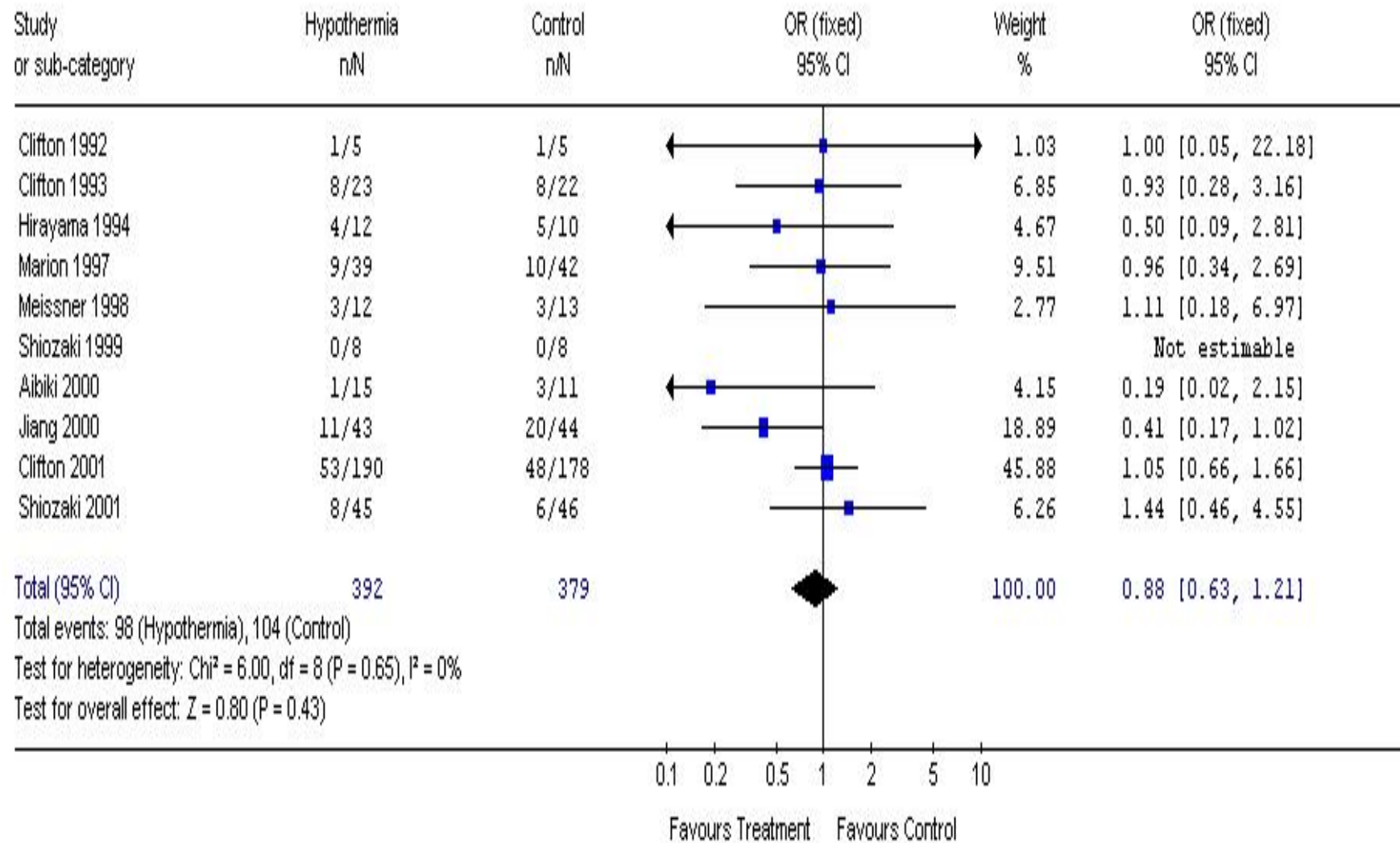
# Mannitol vs control

*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