

MKAIC

Muhimbili-Karolinska
Anaesthesia &
Intensive Care Collaboration



**PAEDIATRIC ANAESTHESIA
& CARE OF THE
CRITICALLY UNWELL CHILD**

**Muhimbili National Hospital
11-14 January 2011**

Recap Day 2

What have we learnt so far?

ABC

Airway

How to assess airway?

Airway

Look, Listen, Feel

Noisy breathing?

Chest movements?

Normal? Able to talk?

Airway

How to treat airway problem?

Airway

Chin lift

Jaw thrust

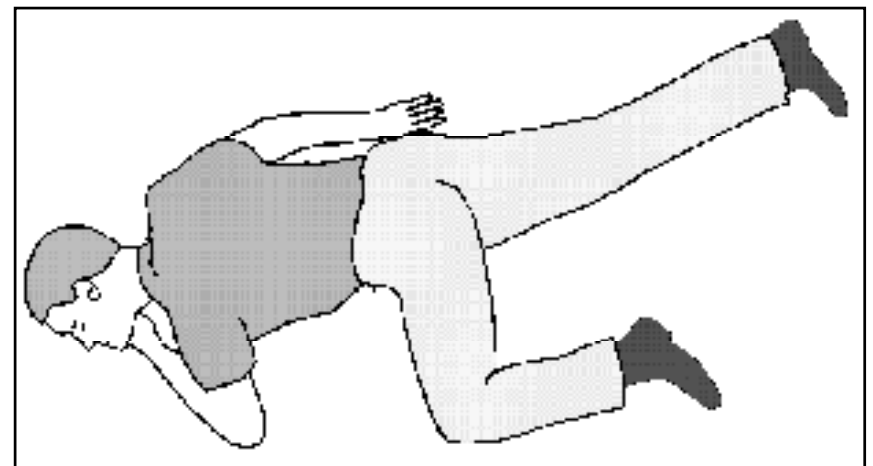
Towel under shoulders

Recovery position

Suction

Oropharyngeal airway

Intubation



Breathing

Children become hypoxic fast!

Breathing

How to assess breathing?

Breathing

Count resp rate

Look chest

Listen chest

Oxygen saturation

Breathing

How fast do children breathe?

0-2 months?

2-12 months?

1-5 years?

Breathing

How fast do children breathe?

0-2 months? < 60

2-12 months? <50

1-5 years? <40

Breathing

How to treat breathing problem?

Breathing

How to treat breathing problem?

Oxygen!

Nasal prongs 1-2L/min

Circulation

How to assess circulation?

How to assess circulation?

pulse

Capillary refill time (>2secs)
(blood pressure)

Skin turgor

mucous membranes, eyes / fontanelle

Conscious level

urine output

Circulation

How to treat shock?

Circulation

How to treat shock?

IV cannula

IV fluid 20ml/kg FAST!!!

R Lactate/other

REASSESS and REPEAT!!!

Disability (Conscious Level)

How to assess conscious level?

Disability (Conscious Level)

How to assess conscious level?

AVPU

Alert

Voice

Pain

Unconscious

How to treat reduced conscious level?

How to treat reduced conscious level?

Glucose

5ml/kg 10% dextrose

Eg 1 year old = 50ml

Hypothermia

Children have large surface area to weight

Keep warm!!

Kangaroo method

Keep covered up.

Formulae

Weight

$$(\text{Age} + 4) \times 2$$

ETT size (if >2yrs)

$$\text{Age}/4 + 4$$

Length ETT to lips

$$\text{Age}/2 + 12$$

Neonatal Resus

- Blue, floppy newborn. What are the first things to do?

- Call for help!
- Tactile stimulation
- Keep baby warm & dry
- Start clock

- ABC
 - Colour, tonus, breathing
 - A – position, suction mouth if needed
 - B - Ventilate
 - how much pressure?
 - how fast?
 - for how long?

- As little pressure as poss, max 25-30cm H₂O
- 60/min
- 30 seconds (30 breaths)

- Suction in trachea?

- Rarely necessary!

- C - listen heart.
 - If <60 – compressions. How?

- Between nipples
- Hand encircling / finger technique
- 1/3 of thorax
- 100/min
- 3:1 compressions:breaths

IV Cannula

Adrenaline – dose?

- 10mcg/kg
- If 1mg/ml adrenaline (=1000mcg/ml)
 - dilute with 9 ml Nacl = 100mcg/ml
 - give 0.1ml/kg
 - 0.3ml to 3kg baby

- Other drugs
 - Buffer
 - IV fluid/blood 10ml/kg

- Intubate – which size tube?

- $3 - 3.5$

Child CPR

B: not breathing!!!

What to do?

ABC!

Clear airway

If foreign body suspected

BABY: 5 back blows / chest compressions

CHILD: 5 back blows / abdominal compressions

ABC!

Clear airway

5 rescue breaths (pulmonary most likely cause)

Check pulse

If no pulse → chest compressions 15:2

IV cannula or
intraosseous – where best place?

Tibia
Medial side on flat
part

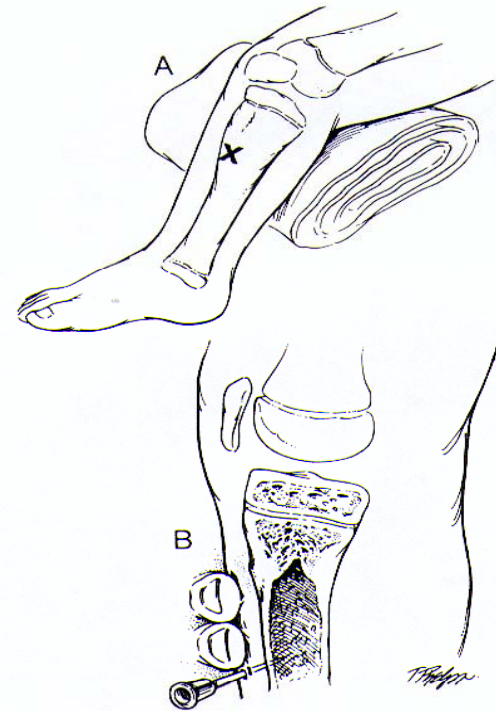


Figure 4-12. Intraosseous needle placement. (A) Insert needle at the level of tibial tubercle on the medial portion of the tibia. (B) The needle is aimed caudally and laterally.

If pulse < 60, give adrenaline

Adrenaline 0,1mg/ml: 0,01mg/kg \Rightarrow **0,1 ml/kg**

ECG

If pulseless VT or VF, defibrillate 4 Joules/kg
and continue CPR

Fluid 20ml/kg

Amiodarone

Lidocaine

Buffer

Emergency Equipment

- Drugs & Equipment on wards

Pre-op assessment

- Pre-op Anaesthesia Clinic
- Prevents delays & cancellations
- Optimise child's condition
- Choose optimal anaesthesia
- decrease distress child and parents
- Saves time for anaesthetist

Pre-op

- History
- Examination
- Investigations

Delaying / Cancelling op

- Weigh risk v benefit
 - elective, acute? Vital op?
- How long should op be postponed if child has a
 - Cold
 - Pneumonia

- Cold 4 weeks (3?)
- Pneumonia 6 weeks

Pre-op fasting

In Sweden

Food 6 hrs

Breast milk 4 hrs

Clear fluid 2 hrs

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All Tues & Thurs lectures already

Will have books & documents eg

- WHO Hospital Care for Children
- Oxygen
- Anaesthesia in District Hospital

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Today

Friday timetable

8.00	Recap
9:00	General Anaesthesia for children
9:45	Seminars
<u>10.30</u>	<u>Coffee</u>
11.00	Ketamine
11.30	Recovery room care
12:00	Post-op care & Pain management
12.30	Post-course test
<u>13.00</u>	<u>Lunch</u>
13.45	Feedback
14.15	Test discussion & certificates
14.45	Closing address
15.00	End