

Obstetric Anaesthesia & Analgesia

Dr Meena Nathan Cherian
Essential Health Technologies
WHO, Geneva, Switzerland



Obstetric Anaesthesia & Analgesia

- How is obstetric anaesthesia (OA) linked to maternal deaths?
- What is the evidence for the role of obstetric anaesthesia in reducing maternal deaths?
- What special skills are required to provide safe obstetric anaesthesia & analgesia?
- Can these skills be made available at the first referral health facilities?

Is obstetric anaesthesia linked to maternal deaths?

In many developing countries:

- Complications of pregnancy & childbirth are the leading causes of death among women of reproductive age.
- At least 40% of women experience complications during pregnancy, childbirth & after delivery.
- **An estimated 15% of these women develop potentially life threatening complication that calls for skilled care; some will require a major obstetrical intervention to survive (emergency & surgical procedures).**
- Health personnel at the first referral health facilities are required to perform emergency life saving procedures, often with inadequate training & limited resources

* Safe Motherhood Fact Sheet: Maternal Mortality

* WHO training manuals for health personnel at first referral health facilities:

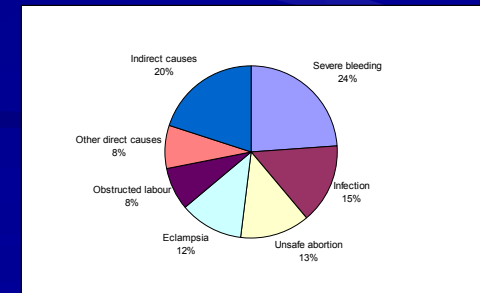
- Managing Complications in Pregnancy and Childbirth

- Surgical Care at the District Hospital

Is obstetric anaesthesia linked to maternal deaths?

- Causes of maternal mort. Other direct: 8% (anesth. ectopic, embolism)
- 'Anaesthesia' is a component of the 'Comprehensive Essential Obstetric Care' in the safe motherhood programmes
- Majority of anaesthetic deaths & obstetric haemorrhage at level 1 hospitals*.
 - AIDS at level 2; hypertensive diseases at level 3 hospitals.
 - **Anaesthetic accidents (4.8%) are an important preventable cause of maternal deaths.**
 - **Lack of training & infrequent use of regional anaesthesia**
- Key recommendations:
 - **Regional anaesthesia should be promoted in all sites performing Caesarean sections**

*Interim Report on the Confidential Enquiry into Maternal Deaths in S. Africa, March 1998, 1999 by the National Committee for the Confidential Enquiry into Maternal Deaths (NCCEMD).



What is the evidence for the role of OA in reducing maternal deaths?

Evaluation of the quality of care for severe obstetrical haemorrhage in 3 French regions (n=165)

■ Design & Methods:

Retrospective questionnaire survey

51% vaginal, 19% operative vaginal, 30% caesarean.

Expert committee established a framework for qualitative assessment (blood loss $>$ or $=$ 1500 ml)

■ Results:

62% recd. appropriate care

24% recd. totally inadequate care

14% mixed care

■ Conclusion:

- Organization of obstetric services for good clinical practices for safer motherhood
- **Presence of an anaesthetist is shown to have a measurable effect on the quality of care for women giving birth**

What is the evidence for the role of OA in reducing maternal deaths?

Caesarean section in Malawi: Prospective study of early maternal & perinatal mortality

- **Methods & Results:** district & 2 central hospitals in Malawi
N= 8070 C-sections, 85 (1.05%) died & of these, 68 (80%) died in the 72 hrs
- **Quantifiable risk factors: Higher maternal mortality:**
 - Ruptured uterus
 - **Little anaesthesia training**
 - GA as opposed to spinal anaesth,
 - Blood loss requiring transfusion > or = 2 units
- **Perinatal mortality 11.2%: Ruptured uterus; GA**
- **Conclusion:**
 - **Improved training in anaesthetics**
 - **Wider use of spinal anaesthesia**
 - **Improved surveillance & resuscitation in postoperative wards might reduce mortality:**

Evidence for the role of OA in reducing maternal deaths?

- Standards & awareness of obstetric anaesth. in healthcare professionals, general public & politically: **Obstetrics Association of Anaesthesia**
- Changes in practice & teaching of anaesthesia & analgesia techniques:
 - Gen. vs Spinal, Epidural, Combined spinal & epidural anaesth.
 - Labour analgesia
 - Analgesia for Caesarean section
 - Pain relief following Caesarean section
 - Balanced combination of non-opioid & opioid medications, local anaesthetics.
- Postoperative Pain Management: impact on mothers & new borns:
 - Ambulation: thromboembolism,
 - Dietary intake: ileus,
 - Respiration: atelectasis, pneumonia
 - Nursing activities & breast feeding

*Journal of Clinical Anaesthesia 2004,16:57-65

*Anaesthesia 2003, 58(12), 1186-9

What special skills are required for safe OA?

- Resuscitation
- Anaesth. techniques & management of complications
 - Side-effects & toxicity of anaesth. drugs
- Decisions for anaesthesia techniques in coexisting medical conditions
- Anaesthetic risks in obstetric patients:
 - Weight gain & uterine enlargement: ↓ functional residual capacity (FRC),
↑ onset of hypoxemia during hypoventilation/ apnoea
 - Difficult airway (intubation): enlarged tongue, breasts
 - Difficulty with nasal breathing & ↑ nasal bleeding:
vasc. engorgement & edema of nasal, oral pharynx, larynx, trachea
 - Denitrogenation: administration of 100% oxygen is mandatory before GA
↑ maternal oxygen consumption
 - Full stomach: Rapid sequence induction of GA:
↑ gastric acid content with ↓ pH, ↓ function of gastro-esoph. sphincter
 - Supine Hypotensive Syndrome: 16 wks to term, in appx.12-15%.
Gravid uterus may compress the vena cava & aorta in the supine position:
↓ cardiac output, blood pressure & uterine blood flow.

What special skills are required for safe OA?

HIV: anaesthetic & obstetric considerations

- Most Caesarean sections are performed as emergencies without preoperative preparation:
 - Anaemia, hypovolemia, sepsis from obstructed labour & ruptured uterus are common
- Prenatal anaesthesia consultations
- Team approach
- Regional anaesthesia is usually technique of choice (local infection, blood clotting abnormalities; neuropathies)
- GA is safe (drug interactions and impact on various organ systems)
- Infection control (asepsis, sterilization of equipment & universal precautions)

* BMJ 2003 13;327 (7415);587

* Anaesthesia Analgesia 2004;98(2): 503-11

* WHO training manual Surgical Care at the District Hospital

Can these skills be made available at the first referral health facilities?

Reduce maternal mortality due to preventable anaesthesia related complications

- Policy
- Quality & safety
- Access
- Use



Can these skills be made available at the first referral health facilities?

Policy

- Advocacy materials to promote training of health personnel & basic minimum requirement at first referral health facilities

Quality & Safety

- To ensure patient safety : tools for needs assessment of health facility & monitoring & evaluation of quality of clinical procedures & equipment

Access

- To recommendations & guidelines on best practice protocols for emergency & surgical procedures & equipment

Use

- Training tools for effective interventions in management of emergency procedures at the first referral health facilities.



Safe obstetric anaesthesia & analgesia

A Collaborative Approach



Thank you

