Save the mother – why not use the safe childbirth checkist?

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Checklist?

- Background: deaths and complications
- Surgical Safety Checklists
- Maternal mortality
- WHO: Safe childbirth checklist programme
- In delivery room: checklists

In the World

- 234 million operations/year
- Reported complications 3 – 16 %
  * surgical-related adverse events
- Patient mortality related to operations 0.4 – 0.9 %
- About **one million deaths** during operations /year
  * some preventable in all countries and settings
  * inadequate anesthetic safety practices
  * poor communication among team members
  * ”**human error**” is a common reason
  * ”**emergency**” posses a highest risk!!

Non–elective…urgent….emergency

- No time to prepare the patient, medication, monitors, equipments, staff etc.
- A lack of additional personel, staff more unexperienced (out-off-office- hours) …
- No identification of common warning signs… when comparing the elective operations and good preparation of these patients: patient-risk-levels: demographic and physiologic indicators, laboratory results, radiology evaluation, anaesthetic/cardiology consultation etc.
- In Finland: The rate of emergency CS 1-2 % with general anaesthesia (note the risks of GA!)

Surgical checklists

- The model from aviation: Karl RC. Aviation. J Gastrointest Surg 2009; 13:6-89
- WHO 10/2004 Safe surgery- campaign
  **World Alliance for Patient Safety
  www.who.int/patient safety
  * Haynes AB, Weiser TG et al
  A surgical safety checklist to reduce morbidity and mortality in a global population
  N J Med 2009; 360:491-9
- Scientific data: The use of checklists has been associated with significant reductions in complication and death rates of surgical patients

WHO recommendatios: 10 aims

- 1. The right patient
- 2. The right operation
- 3.The team knows each other, knows what to do
- 4. The team communicates all the time
- 5. The right technique
- 6. Right medication/equipments, vital sign monitoring etc.
- 7. The risk of infection is known
- 8. Instruments etc. checked
- 9. Blood/tissue etc samples (PAD) identification
- 10. To follow/register the results of the operations, treatment etc.

To err is human…but may be fatal…

WHO perioperative cheklists

- Works as a tool to improve patient safety
- The checklist is not ”to do” – lists but just what it claims ”to be” (it reminds you to check all vital steps before you continue…)
- Checklists reduces deaths and complications from 46 % to 36 %!
- Inexpensive! Simply and quick to use!
- Additions and modifications to fit local practice are encouraged (WHO 2009)

In the world (WHO 2013)

- 130 million births
- 287 000 mothers die/year
- 1 million intrapartum related stillbirths
- 3 million newborn deaths
- Majority within the first 24 hours after childbirth
  * many avoidable
  (quality of care is very low in poor countries/women` low status, many births outside hospital without any facilities and a risk of infection is high etc.)

Maternal mortality

- USA (SOAP 2011)
  increased from 1996 to 2006
  7 / 100 000 to 13,3 / 100 00
  Finland from 1980 to 2008
  1.7 to 12.2 / 100 000
- Some can be preventable…

Maternal mortality…globally…

- Main reasons:
  * Peripartum hemorrhage (PH)
  * Tromboembolism, amniotic fluid embolism
  * Hypertensive disoders, pre-eclampsia
  * Infection, sepsis
  * obstructed labour in low-income countries
  * **Anaesthesia**
  *general anaesthesia: airway problems, ventilation problems, aspiration
  * neuraxial anaesthesia: high spinal: airway problem? haemodynamic problem?
  * obesity is a significant contributor (CMACE 2011)

WHO 2008-2013-2016
The safe childbirth checklist programme
www.who.int/patientsafety

- WHO Millennium Development goals 4: reducing child mortality; goal 5: reducing maternal mortality…but will not be achieved…
- Majority of maternal deaths occur in low-resource settings
- The majority is preventable
- The Patient Safety Programme-The Safe Childbirth Checklist programme, started 2008 with consultation and collaboration with 45 experts around the world, a pilot study 2009-2010 in India
- In 2016 a summary report of accumulated evidence will be produced and shared

Maternal mortality…

- ”**Human” error** (16-33-55 %!)

  * substandard care, comminication problems, a lack of knowledge, experience, skills etc. (CMACE 2011)
- Lack of preparing obstetric patients for anaesthesia and operation!
- Lack of vital sign monitoring (predelivery, during delivery, after delivery…)
- Lack of recognition of clinical crisis

If the parturiet becomes a patient…

- Demografic information? Medical and obstetric history?…Lab (Hb, bleeding status etc?)
- The course of vaginal delivery?
  The obstetric problems?
  Operative deliveries?
  Elective – non-elective- urgent - emergency?
- Anaesthesia: general-regional?
- Communication (identify the risks): maternity health station-maternity clinic - hospital: maternity policlinic- wards-delivery suites - operating theatres?

High risk parturients

- Increasing! Ageing and more pregnancy-related problems, congenital heart disease etc.
  operative deliveries induce problems to next pregnancy: placenta accreta etc., bleeding…massive bleeding
- **BMI increases** (BMI > 50 > 60)
  More anaesthesia related problems! Difficulties in iv-access, more problems in anaesthesia techniques: regional/general anaesthesia, problems related to airways, oxygenation etc.
- Big mother, big baby: induction of labour fails, and so more operative deliveries!

More operative deliveries

- The rate of CS increases
  ** PH increases because of increased incidence of placenta patology (e.g. placenta accrteta) due to rise in CS rate (USA: 21 % in **1997** to 35 % in **2010** and increasing further! In Finland: 15-16 %, in China: in 2012: 45-63 % and in some areas: **80 % because of financial support of health insurance (started in 2003**!)
- The parturient prefer CS vs.VD (in Finland: Fear of childbirth: CS: 20 %)
- More arest of labour?? More complications of the normal course of labour? More induction of labour? More risk parturients (in Finland: CS of obese women is 25 %)

General anaesthesia and maternal mortality

- Anesthesia related complications 7. leading cause of maternal deaths in USA, UK
  * 1. difficult airway 2. aspiration 3. respiratory related complications
- Adverse maternal outcome associated with difficult airway management has led to a dramatic decline in the use of GA in obstetrics
- Anesthesia related death rare but **do happens**
  - quality of anaesthesia has increased
  - knowledge/education improved, clinical skills better: tremendous advances in airway management, supervision, aware of the risks in obstetrics
  - equipments, respiratory systems, monitoring (e.g. **respiratory**, hemodynamics), techniques improved, etc.

General anesthesia (GA) for CS

- True emergency operations
- High level stress situations
- Less experience vs neuraxial anesthesia
- Minimal preparation time, inadequate assessment of the patient
- **Difficult airway? Failed intubation? Advanced airway management?**
- Iv ?, **blood loss (Hb**?), vital signs?
- Special problems related to patient, pregnancy/ delivery etc.

GA for CS

- Neuraxial anesthesia contraindicated
  - massive bleeding
  - coagulopatia
  - patient medical/neurological condition
  - patient refusal
  - etc.

Obstetric emergency

- Typical for obstetrics:
  unpredictable…emergency!!!
  no additional personnel… less experience…
  out of office-hours…
  no information of medical/obstetric history, no information of the course of labour and delivery, no identification of common warning signs, no blood products, bad communication…

Checklists for obstetric anaesthesia?

- What kind of? To whom?
  * maternity health stations/clinics
  * delivery suites
  * on wards?
  - to identify parturients who are at a risk for problems
  - clinically inadequate due to potential for high false positive or negative rates?

Obstetric patients checking for anaesthesia…

- Quick checking to improve patient safety?
- Increased workload?
- No any reliable…or?

Checklists for obstetric patients

- 1.Healthy? Yes / **No**: what is the problem?
- 2. Medication? No / **Yes**, what?
- 3. Allergy? No / **Yes**, what?
- 4. BMI > 40 > **50 > 60** yes, inform the anaesthesiologist!
- 5. Problems in pregnancy now and before? No/**yes**, what?
- 6. Problems during the course of labour No/ **yes**, what?
- 7. Aspiration risk? Eating/drinking?
- 8. Difficult airway? No/Yes, inform the anaesthesiologist
- 9. Iv? If problems, ask for help!
- 10. Hb < 100 g/l? Tromb<100? Blood products: availibility?

Checklists to obstetric patients

- To **alert** the midwife, obstetrician, paediatric team and anaesthesia team etc. about the presence of **risk factors** that place the parturient in an increased risk of complications
- To improve team work and communication
- To improve maternal safety
- Can even **save the mother** and the baby when the potential risk is noticed in advance!

Team work for patient safety!

References

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