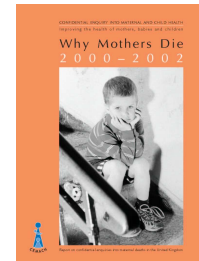


Deaths Due to Anaesthesia

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The CEMACH report on Why Mothers Die 2000-2002. The BJA printed an editorial and review article in the April 2005 edition and there have been a number of articles in other recent publications. The subject is therefore topical and could easily appear in a future FRCA exam.



Example of possible future FRCA Final SAQ question:

What does CEMACH stand for and briefly describe its history? (20%)

What were the causes of direct death due to anaesthesia? (50%)

What recommendations were made to improve patient safety? (30%)

The Confidential Enquiry into Maternal and Child Health, started work in April 2003.

CEMACH Publications

Why Mothers Die 2000-2002 - Report on confidential enquiries into maternal deaths in the United Kingdom. Copies of this report can be purchased via the Royal College of Obstetricians and Gynaecologists bookshop. Telephone +44 (0)20 7772 6275

The first triennial report of the Confidential Enquiry into Maternal Deaths (CEMD) was published in 1952 and the current CEMACH report covers maternal deaths in the UK for the triennium 2000-2002.

From 1 April 2005 the National patient Safety Agency took over responsibility for funding and commissioning the work of the National Confidential Enquiries from the National Institute of Clinical Excellence (NICE). On 1 April 2005 NICE joined with the Health Development Agency to become the new National Institute for Health and Clinical Excellence.

CEMACH is a self governing body managed by its own board with members nominated by six Royal Colleges

- Royal College of Obstetricians & Gynaecologists (RCOG)
- Royal College of Midwives (RCM)
- Royal College of Paediatrics & Child Health (RCPCH)
- Royal College of Pathologists (RCPath)
- Royal College of Anaesthetists (RCA)
- Faculty of Public Health (FPH)

In the most recent report there were six direct deaths due to anaesthesia and one late direct death.

This represents an increase from the three deaths in the last triennium but this is unlikely to be statistically significant because the numbers are small.

All of the direct deaths were associated with general anaesthesia and there were no direct deaths attributed to regional anaesthesia.

Up until 1981 there were between 30-50 direct deaths per triennium attributed directly to anaesthesia. For the triennium 1982-84 direct deaths numbered 19, which equalled the number for the next 12 years or 4 trienniums from 1985 to 1996.

From 1964 to 1966 the caesarean section (CS) rate was 3.4%, with an incidence of 36 direct deaths due to anaesthesia per 100,000 CS.

In this triennium there were roughly 1 in 100,000 direct deaths due to anaesthesia for CS. Approximately 20% of CS were performed under general anaesthesia (GA), which is where the deaths occurred, so the risk of dying under GA for CS is about 1 in 20,000.

This is a problem if you are presented with a needle phobic patient refusing a regional technique, since the GA will put them into a higher risk category. In this triennium, two of the patients who died under GA were needle phobic.

Because there were no direct deaths attributed to regional anaesthesia, this will be the anaesthetic technique of choice for CS. This means that there will be fewer training opportunities for juniors to secure a potentially difficult airway in the pregnant patient.

Direct deaths due to anaesthesia

Misplaced tracheal tubes

Oesophageal Intubations accounted for 2 deaths in this triennium and one late direct death carried over from the last triennium. Relatively inexperienced SHO trainees without immediate senior backup gave all of the general anaesthetics. One was new to the country and there was no assessment of his competency.

In one case the fresh gas flow had been disconnected from common gas outlet highlighting the need for proper anaesthetic machine checks. It has been recommended that a separate O2 supply should be used when supplementing O2 for the awake patient.

Capnography was only used in one of these cases during which time it became blocked with gastric contents.

This is despite the Royal College of Anaesthetists stating in 1998 that "No trainee anaesthetist should be put into the position of having to intubate the trachea without a capnograph being available".

Isolated sites

General anaesthetics were administered to two women in isolated sites, where the delay in obtaining help was a contributory factor in the deaths. One of the women was needle phobic and the other obese (BMI 40). Contrary to recommendations capnography was only used in one of these cases. Both women suffered hypoventilation which was poorly managed. The resulting cardiac arrest was also poorly managed in one of these case and no resuscitative drugs were administered until help arrived.

Aspiration of gastric contents

An obese (BMI > 35) woman who was needle phobic declined a regional block. She died after aspiration of gastric contents following failure to intubate the trachea after induction of GA for CS. It is uncertain if she received antacid prophylaxis.

Anaphylaxis

A woman developed classical signs of anaphylaxis and suffered a cardiac arrest after an SHO induced anaesthesia with propofol and gave suxamethonium to facilitate tracheal intubation. She had presented with bleeding due to an incomplete miscarriage. A blood sample taken shortly after the collapse confirmed a raised mast cell tryptase confirming the diagnosis.

Deaths Where Anaesthesia Contributed

There were 20 deaths in which where anaesthetic services were considered substandard, contributing to these.

These were broadly categorised under the following headings. The authors have been specifically vague about individual case to protect patient identity.

Lack of multidisciplinary cooperation

It was thought that the failure to ask for help was not confined to trainees. Even consultants occasionally need another pair of hands or advice. This need not only come from anaesthetic colleagues, but from colleagues in other departments such as intensive care, where beds are at a premium, haematology and cardiology. It was recommended that cardiac arrest drills are practised routinely in all maternity units and all medical and midwifery staff maintain their resuscitation skills.

Lack of appreciation of the severity of the illness

There were a number of situations in which trainee obstetric and anaesthetic staff sought senior help too late.

These incidents involved the usual high risk cases such as preeclampsia and HELLP syndrome, haemorrhage, sepsis and patients with coexisting problems.

Lack of perioperative care


Again this included high risk conditions such as preeclampsia and haemorrhage.

Poor management of haemorrhage

Although the anaesthetic management of haemorrhage was excellent in many cases, it was substandard in 5 of the 17 deaths.

In young fit woman the severity of haemorrhage may not be recognised until the cardiovascular system decompensates suddenly. Obstetric haemorrhage is often abrupt, massive and may be accompanied by a coagulopathy.

Key Recommendations

 Dedicated obstetric anaesthetic services should be available in all consultant obstetric units, covering epidural analgesia, anaesthesia, recovery and high dependency care.

Appropriate anaesthetic training

There should be appropriate anaesthetic training ensuring competence in machine checks, airway management, oesophageal intubations, failed intubations and resuscitation.

Early referral

There should be early referral of all high risk cases and woman with medical problems in pregnancy. This triennium highlighted that pregnant women who are obese (BMI > 35) or needle phobic are at an increased risk. Because of the shortage of intensive care beds, there should be consultant to consultant referral to facilitate the creation of a bed in an emergency in a seriously ill woman.

Supportive Counselling

Maternal death is a tragedy not only for the family, but for all the personnel involved and the anaesthetist commonly assumes full responsibility.

References

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