

Maternal Cardiac Arrest

Changing concepts

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THE MOET COURSE MANUAL

Managing Obstetric Emergencies and Trauma



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CAMBRIDGE

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THIRD
EDITION

Background

- UK incidence of cardiac arrest in pregnancy unknown
- Increasing awareness of importance of PMCS for **maternal benefit**
- 52 cases of PMCS in 03-05 triennial enquiry
- Evidence that PMCS done late & outcomes poor (Dijkman 2010)

CAPS

A UKOSS study of cardiac arrest in pregnancy

Virginia Beckett, Marian Knight, Laura
McCarthy, Eamonn Breslin, Paul Sharpe

Study design

- Prospective July 2011-July 2014
- UKOSS reporting system
- All cases of BLS in pregnancy

Study design

- Questionnaire
 - Focus on perimortem CS
- Data validated
 - Ventilatory support only excluded
 - Postnatal arrests initially excluded
 - **Postnatal arrests collected in final year**

Results-numbers

- 66 cases
- 1:36 000 maternities
- 26 postnatal arrests
- Perinatal cardiac arrests
- **1:16 000 maternities**

Results-numbers

- Median age 32.8
- Maternal survival rate 58%

The babies

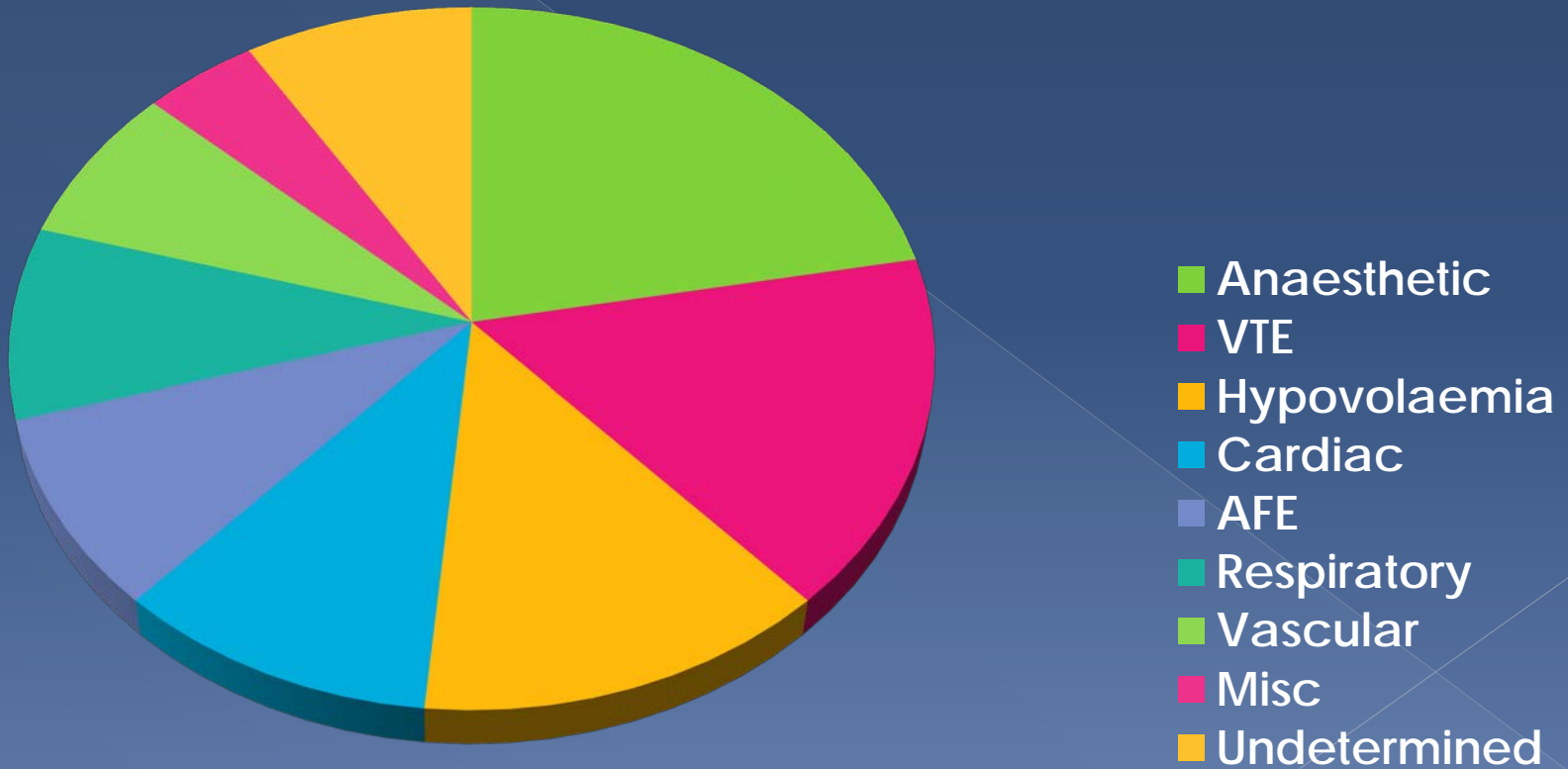
- 50 of 62 babies born alive
- 14 to women that died

- At PMCS
 - <5 mins 24/25 survived
 - >5 mins 7/10 survived

Pre-existing medical conditions

- **27 women**
- Asthma
- Cardiac/hypertension
- Auto-immune
- Renal failure
- Neurological disease
- DM
- HIV
- Bleeding disorder

Results- causes



Resuscitation

- 80% occurred in hospital (n=55)
- Median time to
 - ALS - < 1 minute
 - PMCS - 5 minutes
- Manual uterine displacement in 4 cases
- Output restored in 53 women

Perimortem CS

- 47 cases
 - 46 performed by Obstetrician
 - 61% in <5 minutes
- 26 survived
- 11 performed in ED
 - 1 survived

Who decides, who does it?

	Obs	Anaes	'Medic'	Cons	ST
Decision	43	1	2		
Grade				25	20
Performed by	45		1		
Grade				25	21

Survivors

- Higher BMI (29 vs 24, $p < 0.01$)
- Median time from collapse to ALS same
- PMCS quicker ($p < 0.01$)
 - 3 minutes in survivors (0-39)
 - 12 minutes in those that died (0-67)

Cardiac Arrest with Pregnant uterus above umbilicus

- A
- B
- C (&uterus!)
- Knife.....

Delays

- Moving to theatre
- Finding equipment
- Finding theatre staff
- Waiting for Obstetrician.....

But what about those
anaesthetic causes?



17 anaesthetic causes

- 10 total spinal
- 3 problem with intubation
- 3 vasovagal collapse from epidural top up
- 1 anaesthetic accident

- ALL survived

What happens on your Labour Ward?



Conclusions

- UK incidence of cardiac arrest in pregnancy is 1:34 000 maternities
- 80% occur in hospital
 - some of iatrogenic cause
- Maternal survival is high with
 - Early ALS
 - No delay in PMCS

American data (Myhre 2014)

- Retrospective
- Discharge data
- Cardiac arrest rate **1:12 000**
 - More common if >35, Black & Medicaid
- 1/3 died with fetus in utero

- Only 8% attributed to anaesthetic causes

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- UKOSS reporting clinicians
- UKOSS
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