

# Outcomes for children after IVF: What are the facts?

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# Introduction

- Multiple births are the biggest risk to IVF infants
- 1 in 4 IVF births in the UK are multiple infants
- 50% of twins born prematurely ( < 37 weeks)
- 90% of triplets born prematurely
- Many classified as “Low Birth Weight” infants ( < 2.5kg)
- Significant population in Neonatal Units in the UK

**Main Problem – Prematurity!**

# Preterm Infant



# Complications of Prematurity

- Brain injury (intraventricular haemorrhage)
- Hyaline membrane disease (Chronic lung disease)
- Infection and sepsis (poor immunity)
- Food intolerance (necrotising enterocolitis, and parenteral nutrition requirements)
- Poor growth and growth restriction
- Poor temperature and glucose control
- Cardiovascular Problems i.e Patent Ductus Arteriosus

# Outcomes in extremely preterm infants ( < 26 weeks)

- Epicure 1 – 1995 (UK)
  - Survival at term
  - Outcomes at 1, 2.5, 6 and 11 years of age
- Epicure 2 – 2006 ( Eng)
  - Survival at term
  - Outcomes ongoing

# EPIcure 1 & 2- survival to discharge

Gestational age at birth	1995	2006
	survival (%)	survival (%)
22-23	19	26
24	35	47
25	54	67

# EPIcure - 2.5 years

- Neurodevelopment assessment
  - 49% no disability
  - 24% mild
  - 24% severe
    - cerebral palsy, unlikely to be mobile
    - development very delayed
    - severe hearing and sight problems
- Disability or development not worse for those of 23 weeks compared to 25 weeks

# EPIcure - 2.5 years

- Growth
  - Tend to be smaller but within normal limits
  - Tendency to slowly catch up
- Respiratory problems
  - 45% wheeze and cough
  - 40% readmission to hospital
  - More common if oxygen dependent

# EPIcure - 2.5 years

- Behaviour
  - During assessment
    - 1 in 3 boys
    - 1 in 6 girls
    - Short attention span during assessment
  - Child Behaviour Checklist (parents)
    - 1 in 5 with problems
    - Inattention difficulties

# EPICare - 6 years

## Compared to a peer group

- Children assessed in school setting
- Problems relate to learning and ability in classroom
  - 40 % doing significantly worse than classmates
  - Boys lower scores than girls
  - Intelligence test performing worse than predicted
    - Ability to process information
    - Sequential tasks better than simultaneous
  - Hand eye skills lower
  - Behavioural problems, hyperactivity, ADHD

# EPIcure - 11 years

- Boys more likely to have problems
- Learning difficulties
  - 15% severe
  - 23% moderate
- Mainstream school
  - 60% need extra resource
  - 30% statemented
- Behavioural problems as before
- Increased autistic spectrum disorders
- Respiratory problems

# Multiple birth outcomes

- Twin perinatal mortality 4 times singleton
- Twins are 3 times more likely to be stillborn
- Twins are 5 times more likely to die in 1<sup>st</sup> year
- Triplets are 13 times more likely to die in 1<sup>st</sup> year
- Twins are 4 times more likely to have cerebral palsy
- Triplets are 18 times more likely to have cerebral palsy

# The Costs of Prematurity

- Financial costs of Prolonged NICU care
- Family emotional & financial costs
- Long-term health care costs relating to disability
- Behavioural costs- family trauma
  - Education/statementing

# *Proposal*

**Avoid some of the costs of  
avoidable prematurity**

**Provide savings to fund  
further single embryo  
transfers**

Thank you for listening



**Elective Single Embryo Transfer: the team approach to successful strategies to reduce multiple births.**

**1<sup>st</sup> August, 2008 – Birmingham  
Workshop**