Follow up of babies after Intensive Care

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Aims

- Primarily follow up of LBW Infants
- Expectations of outcome - data
- Routine follow up from JR

Admissions @ JR

- No. deliveries/year ~ 6500
- No. admissions NNU/year ~ 900
- No. 500-999g ~ 42
- No. 1000-1499 ~ 42
- No. 1500-1999 ~ 86
- No. 2000-2499 ~ 97
- No. 2500-2999 ~ 132

Aspects of Outcome

- Mortality
- Neurodisability
- Behavioural
- Respiratory
- Growth
- Functional
- Family
- Later –Functional/CVS/Metabolic
- Economics

Delivery rates

- Rate of preterm births rising
- Rate of survivors rising
- Births 32-36 weeks 5 x more than births<32 weeks
- ~12% births < 37 weeks
- Since 1981 31% increase in preterm births: ~66% late preterm 32-36 weeks

Influences on Outcome

- ***Gestational Age*** is greatest influence on outcome
- For any Gestational Age ***fetal growth restriction*** affects survival rates
- Better outcomes in ***tertiary centres***
- Better outcome for ***in-utero transfer*** than ex-utero.

Survival Increasing

- Victoria, Australia < 26 weeks:
- 1979-1980: 25% survival
- 1997: 73% survival

Neurodevelopment -usual markers

- CP
- Mental retardation
- Sensory impairment – visual/hearing

- Definitions
- Populations
- Often not uniform

Victoria, Australia @ 2 years

- Very preterm (<32 weeks) ~25% substantial morbidity
- Highest rates in the most immature
- 4% normal Controls

Sweden GA specific CP per 1000 births 1991-1994

- <28 weeks 85.5
- 28-31 64
- 32-36 6.2
- ≥37 1.3

Changes with Time
most recent Eurpoean study

- Prevelence CP in VLBW
- 1980 60.6/1000 births
- 1996 39.5/1000 births

- But increased survival absolute numbers increase

More subtle difficulties than CP

- Fine motor & co-ordination problems
- Normal Intelligence
- No CP
- No Sensory impairment
- School difficulties
- Greater in Boys

Behavioural Sequlae

- Executive function:
- Maths/spelling/arithmetic/writing
- Persists into adolescence
- ? Changes with time
- Modulated by environment: parenting/social/economic background

Behaviour

- ADHD 2-4 x commoner in very preterm
- Shy
- Unassertive
- Anxious
- Withdrawn
- Depression
- -persists into adolecence

Behaviour -But

- Parental reporting greater than the child's
- Lower rates of delinquency
- Lower rates risk seeking behaviour

Education

- VLBW slightly lower rates educational achievement BUT
- Very few differences in young adults from advantaged backgrounds

As young adults

- All studies show
- Higher rates schooling issues as adolescence but
- All studies show good recovery in adapting to roles as adults
- Do better than anticipated

Other Sequelae

- Increased hospital admissions
- > 50% ELBW readmitted at least once 1-2 years
- Usually Respiratory problem
- Increased hospital services for 10-12 years
- In early adults years this increase acute services need disappears

Chronic needs persist

- Blood pressure
- BPD in 40% VLBW persistently lower lung volumes (functional effect?)
- ROP decreased incidence blindness since Tx 1990's
- Myopia/hypermetropia (Squints)
- Hearing impairment 3-5% (Speech)

Growth

- LBW infants persist with decreased weight & height, BUT:
- Increased BMIs as adolescence

- Studies now looking at appropriate postnatal growth for these babies
- Increased risk in adulthood Type 2 diabetes & CVS

Functional outcomes

- Greater value of quality of life reported by self than healthcare professional or parent
- Effects of “malfunctions” decrease with age
- With increasing age:
- Adapt but also studies have increased information form self reporting

Effect on families

- STRESS
- Persists for first 3 years
- Related to socioeconomic status/age/education
- BUT
- At adolescence positive effect – enhanced personal feelings/mastery/accomplishment

Economic considerations

- Victoria, Australia 1970's – 1990's
- Cost remained Aus $5000 per year life gained
- Quality of life economics compares very favourably with other Tx
- "Gain" in healthy survivor v "Loss" child with disability :1500g 264:35

Routine follow up

- Corrected age for weight/development
- Immunisations @ AGE FROM BIRTH
- Flu vaccine for high risk groups - Oxygen
- Hips – check do not need US
- Gross motor for corrected GA
- Fine motor
- Hearing
- Vision – myopia
- Speech
- 2 year follow up – will come to Oxford
- School years
- Adult years – blood pressure/blood sugars

Nutrition & growth

- **Breast is Best**
- Nutriprem 1 until ~ 1.8 kg
- Nutriprem 2 ~ 1.8kg to 6 -9 months, sometimes longer depending on weight gain
- As top up for breast fed babies if poor weight gain
- If on N2 do not need added Iron & Vits
- If good weight & growth normal formula fine

Nutrition & growth

- Reflux – common (in all babies)

- Tx if weight poor or distressing TO BABY

Nutrition & growth
Vitamins & Iron

- **Dalivit 0.3mls/day** from day 5 to 1 year any baby born <37weeks
- **Fersamel 1.5mls/day** from day 56 for any baby born <35 weeks for 6 months or until weaned
- If on N2 do not need supplements BUT if then change to normal formula will need to START Iron & Vitamins

Nutrition & growth
Weaning

- Weaning: from 6 months corrected GA – some babies will demand earlier

- Wean as for any other baby – aim for good mixed diet

Family

- People “perform to expectation”
- Maximise potential
- First 3 years the worst
- Enjoy every day
- Treat as normal
- Ultimately feel enhanced - accomplished

Summary

- Morbidity inversely related to GA
- No GA, including term, is exempt
- Neurodisability & recurrent health problems take toll in early childhood
- School difficulties/behavioural problems persist into adolescence
- However most children born preterm adjust remarkably well during their transition to adulthood
- Maximise their potential –**Tx as normal as possible**
- Watch for later metabolic diseases of type 2 diabetes & CVS