RESEARCH REPORT #74

National
Organization of
Mothers
Of
Twins
Clubs, Inc.

SUBJECT: **Long Term Effects of Pre-Term Multiple Birth**

RESEARCHER: National Organization of Mothers of Twins Clubs, Inc.

DATE: March 2004 – September 2004

PURPOSE: The purpose of this study was to assess the types and duration of the effects caused by pre-term birth of multiples (Pre-term is defined as "a gestational period of less than 37 weeks.")

METHOD: A questionnaire was printed in NOMOTC's *Notebook* and sent out in an NOMOTC National Mailing. The survey was to be completed by a parent of pre-term multiples who were at least 5 years old when the survey was completed.

BACKGROUND INFORMATION

A total of 92 surveys were completed by parents of pre-term multiples. The surveys were broken down as follows:

1. Types of multiples: Twins - 80 (87%); Triplets - 11 (12%); and Quadruplets - 1 (1%)
2. Zygosity of multiples: Identical - 33 (36%); Fraternal - 58 (63% ; and a combination of identical and fraternal - 1 (1%)
3. Gender of multiples: Male - 41 (45%); Female - 28 (30%); and Male/Female - 23 (25%)
4. Age of multiples: Ranged from 5 to 33; most of the multiples were ages 5 to 10 years (89%)
5. Gestation of multiples: Ranged from 25 to 37 weeks; most of the multiples were born between 32 - 36 weeks (73%);
Twins: The gestation of the 80 sets of twins ranged from 25 to 37 weeks;
Triplets: The gestation of the 11 sets of triplets ranged from 25 to 36 weeks;
Quadruplets: The one set of quads were born at 32 weeks.
6. Birth weight of multiples: Ranged from 1 lb. 6 oz. to 7 lbs. 6 oz.; most of the pre-term multiples weighed between 3 lbs. 3 oz. and 5 lbs. 14 oz. (73%).
7. Mortality of pre-term multiples: Three of the families have had a death of one of the pre-term multiples (only 3.3% of the total of 92); all of the deaths were higher-order multiple children.
8. Total number of pre-term multiples studied: 197 children

RESULTS

Seven of the 92 pregnancies had at least one infant with an intra-ventricular hemorrhage (bleeding in the brain) (7.6%). A total of 18 infants had IVH (9.1% of the total number of infants). Fourteen of the children only had Grade I hemorrhages; two had Grade I-II; one had Grade III; and one had a Grade IV hemorrhage - with Grade IV having the worst severity.

2. Ten of the pregnancies had at least one infant with hydrocephalus (excess cerebro-spinal fluid in the brain) (11%). Two of the infants required shunts to remove some of the excess fluid.

3. Seventy-three of the total of 197 pre-term infants were put on a ventilator to help them breathe (37%). The amount of time the infants were on a ventilator varied from a few hours to 2½ months. The majority of the infants were on a ventilator for 1-14 days. By age five, only one of the children still required supplemental oxygen. This child had been on the ventilator continuously for two months after birth.

4. Only two of the infants (1%) had vision problems due to the prolonged use of oxygen. One of the children had a learning disability as a result of the vision problems. The other child with vision problems also had cerebral palsy.

5. Twenty-seven of the 92 multiples pregnancies (29%) had a pre-term multiple who required a feeding tube to get nourishment. Sixty-six infants in all (33.5% of the total number) required a feeding tube. The amount of time the infants required a feeding tube varied from 2 days to 9 weeks. The majority of the infants had a feeding tube for 1-6 weeks.

6. Only four (2%) of the children developed cerebral palsy. Two were baby A and two were baby B.

7. Fourteen of the infants (7.1%) had PDA (Patent Ductus Arteriosus). This is an area of the heart that should close off once the infant is born and breathing oxygen through the lungs. The infant with a PDA has an obvious heart murmur. Five of the 14 affected infants required surgery to close the PDA. In others, it closed spontaneously or resolved after medication (usually, Indomethacin) was given.

8. Five infants (2.5%) had other congenital heart defects.

9. Only six of the infants (3%) were given the diagnosis of "failure to thrive." This happened at the following ages: 3 months, 4 months (2 children), 6 months, 8 months, and 12 months.

10. Developmental delays are also a common result of a premature birth. By the age of five, the multiple birth children in our study had deficits in the following areas:

- Motor coordination (15 children)
- Self-help skills (10 children)
- Social interaction (12 children)
- Language (24 children)
- Cognition (6 children)

11. Learning disabilities are also commonly seen in children born prematurely. By the time they were school-age, the children in our study had the following learning problems:

- Attention-deficit disorder (2 children)
- Dyslexia (2 childen)
- Speech & language delay (5 children)
- Auditory processing delay (1 child)
- Visual problems (1 child)

12. The multiple-birth children in our study had the following complications (many of which were a result of their prematurity):

- Amblyopia (1 child)
- Anemia (2 children)
- Apnea, or breathing problems (8 children)
- Asperger’s syndrome, a type of autism (1 child)
- Asthma (8 children)
- Bradycardia, or low heart rate (7 children)
- Broncho-pulmonary dysplasia, a lung problem (1 child)
- Cerebral palsy (4 children)
- Death (3 children)
- Dystonia, a neurological disorder (2 children)
- Emotional problems (1 child)
- Epilepsy, or seizures (2 children)
- Growth delay, severe (2 children)
- Hernia (7 children)
- Jaundice, a liver problem (6 children)
- Kidney reflux (1 child)
- Meningitis (1 child)
- Necrotizing enterocolitis, a serious intestinal problem (3 children)
- Oral aversion, possibly from tube feeding (1 child)
- Pneumonia (1 child)
- Pneumothorax, or a collapsed lung (1 child)
- Pulmonary hemorrhage, or bleeding in the lung (1 child)
- Reflux, a stomach problem (3 children)
- Retinopathy of prematurity, a visual problem (10 children)
- Torticollis, or wry neck (2 children)

13. By the time these pre-term multiples became school-age children, many of them had special schooling needs, most commonly, speech therapy. Here are the types of help needed by these children:

- 504 plan for motor delay (2 children)
- Adaptive physical education (1 child)
- Behavior modification (1 child)
- DD program (2 children)
- EC1 program, for hearing loss (1 child)* ESE placement in mainstream class (2 children)
- Individual education program (2 children)
- Individual literacy program (1 child)
- Learning lab placement (2 children)
- NILD/SOAR program (2 children)
- Occupational therapy (9 children)
- Physical therapy (4 children)
- Resource room at school (1 child)
- School for the blind (1 child)
- Separation in class, due to one twin not talking (2 children)
- Smart start program (3 children)
- Special education class (6 children)
- Speech therapy (31 children)
- Tutoring (1 child)
- WINGS program (2 children)

CONCLUSION

1. This study definitely shows the possible dangers of pre-term birth in a multiple pregnancy.

2. The majority of the children did very well medically once they were treated for the immediate types of complications that occur soon after birth. Some did have continuing medical problems that required treatment.

3. As the multiple birth children became school-age, there were often special programs needed to help them succeed in school. The most common intervention needed was speech therapy.

4. This study indeed illustrates the importance of the prevention of pre-term birth of multiples.