Plenary Session I (cont.)

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SEVERE NEURODEVELOPMENTAL DISABILITY AND HEALTHCARE NEEDS AMONG SURVIVORS OF MEDICAL AND SURGICAL NECROTIZING ENTEROCOLITIS - A PROSPECTIVE COHORT STUDY

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Tweet about it: Severe neurodevelopmental disability and healthcare needs after discharge: ELBW survivors of NEC are at high risk

Purpose: Necrotizing enterocolitis (NEC) commonly affects extremely low birth weight (ELBW) neonates and is associated with significant mortality. To better characterize morbidity, we evaluated neurodevelopmental outcomes and healthcare needs among survivors of medical and surgical NEC, compared to those without a history of NEC.

Methods: Data were collected prospectively on ELBW (401-1000g) neonates born 1999-2012 at 47 North American centers. Detailed neurodevelopmental evaluations were conducted at 18-24 months corrected age. Information regarding rehospitalizations, post-discharge surgeries and feeding was also collected. "Severe neurodevelopmental disability" was defined as: bilateral blindness, hearing impairment requiring amplification, inability to walk 10 steps with support, cerebral palsy, and/or Bayley Mental or Psychomotor Developmental Index <70. Diagnosis of NEC required both clinical and radiographic findings (minimum Bell's stage II). Surgical NEC was defined as NEC receiving laparotomy or primary peritoneal drainage. Risk ratios are adjusted for gestational age and clustering of infants within hospitals.

Results: Of 20,565 infants eligible for follow-up, 48.3% were evaluated: 9,063 without NEC, 532 with medical NEC, and 334 with surgical NEC. Characteristics associated with disability were similar between survivors with and without follow-up. Significantly higher rates of morbidity were observed among infants with a history of NEC (Figure 1 & Table 1), and those with surgical NEC were the most frequently affected across all outcome measures.

Adjusted risk ratios (ARR) for morbidity at 18-24 months of age, compared to infants without NEC				
	Medical NEC		**Surgical NEC**	
	ARR (95% CI)	**p**	**ARR (95% CI)**	**p**
Severe neurodevelopmental disability	1.35 (1.14-1.60)	<0.001	2.02 (1.66-2.46)	<0.001
Medical rehospitalization	1.11 (0.99, 1.23)	0.07	1.52 (1.35-1.70)	<0.001
Post-discharge surgery	1.32 (1.13-1.54)	<0.001	1.73 (1.48-2.02)	<0.001
Post-discharge tube feeds	1.59 (1.24-2.04)	<0.001	3.14 (2.62-3.77)	<0.001

Conclusion: Extremely low birth weight survivors of necrotizing enterocolitis were at significantly ($p<0.001$) increased risk for: severe neurodevelopmental disability, post-discharge surgery and tube feeding. Notably, in our cohort of toddlers with a history of surgical necrotizing enterocolitis, 40% demonstrated severe neurodevelopmental disability, half underwent post-discharge operations, and over a quarter required tube feeding at home.