

Neurodevelopmental outcomes of infants with meningitis and Group B Streptococcal (GBS) infections in the United Kingdom

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Background

Demonstrating the long-term consequences of neonatal bacterial infection is a crucial part of disease surveillance. It aids financial and service provision planning, and counselling parents at the time of infection.

Aims

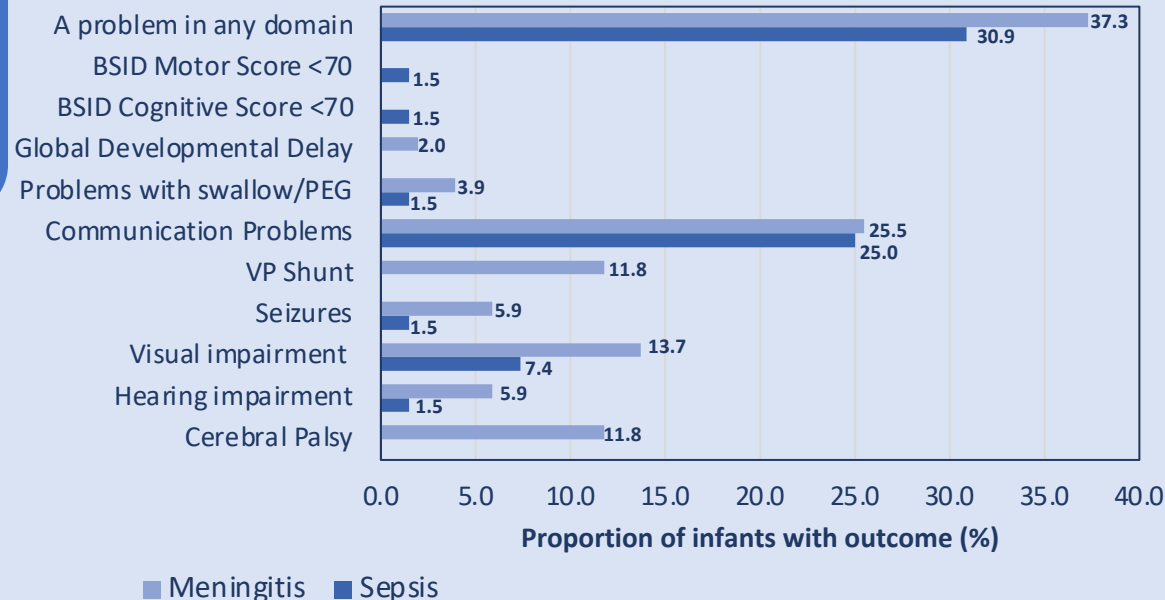
The aims of this observational study were to describe the neurodevelopmental outcomes of survivors of young infant (<3 months of age) Group B Streptococcus (GBS) sepsis and bacterial meningitis (due to any pathogen) in the United Kingdom.

Methods

Neurodevelopmental impairment (NDI) was defined by a score of more than 2 standard deviations from the mean in the third edition of the Bayley Scales of Infant Development (BSID) or presence of hearing and visual impairment, cerebral palsy, neurological diagnoses, and social/communication difficulties. Child quality of life (QoL) was assessed using Pediatric Quality of Life Inventory (PedsQL).

Demographics	GBS Sepsis n (%)	Meningitis n (%)
Male	44 (64.7)	29 (56.9)
Premature \leq 36 weeks' GA	8 (11.8)	12 (20.7)
Premature \leq 30 weeks GA	1 (1.5)	3 (5.9)
Early Onset Disease* (0-6 days)	45 (66.2)	13 (26.5)
Age at diagnosis (days) median IQR	1 (0-15)	17 (6-35)
Age at assessment (months) median IQR	37 (33-41)	43 (34-55)

Neurodevelopmental impairment in infants with GBS sepsis and meningitis



Results

- 119 children participated: 68 GBS sepsis, 51 meningitis. 40 (33.6%) had a problem in one or more areas assessed.
- 37.3% (19/51) children with meningitis and 30.9% (21/68) with GBS sepsis had NDI ($p=0.56$).
- 60% of premature infants had NDI versus 28.3% of term infants ($p=0.009$).
- Overall QoL for children with NDI was lower than for children without (81.1 vs 93.3 $p=0.04$).

Conclusions

Infants diagnosed with GBS sepsis are at risk of long-term NDI and should routinely be followed-up in the same way as survivors of bacterial meningitis. Preterm infants are at greatest risk of long-term sequelae.

References 1) del Rosario C, Slevin M, Molloy EJ, Quigley J, Nixon E. How to use the Bayley Scales of Infant and Toddler Development. Archives of Disease in Childhood: Education and Practice Edition. 2020. 2) <https://www.pedsqol.org>

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