Malene Risager Lykke. Psychiatric disorders are another neurodevelopmental outcome following invasive infection in the neonatal period. Can some childhood mental health disorders be prevented.

Title: *Psychiatric disorders are another neurodevelopmental outcome following invasive infection in the neonatal period. Can some childhood mental health disorders be prevented?*

Background: Invasive group B *Streptococcus* disease (iGBS) is the most common infection in early childhood, affecting approximately 500.000 newborns globally each year. iGBS sepsis is most common, but the least researched. iGBS can lead to several neurodevelopmental impairments, however, the risk of psychiatric disorders has never been investigated. We aim to examine the association between iGBS (sepsis or meningitis) and risk of psychiatric disorders until adolescent age.

Methods: We conducted a population-based cohort study based on health care data from 1997 through 2018 in Denmark. Exposed children had hospital-diagnosed iGBS during the first 89 days of life. A general population comparison cohort was randomly sampled and matched 10:1 by sex, year of birth, and gestational age to the exposed cohort.

Psychiatric disorders were defined by International Classification of Diseases, Tenth Revision codes (ICD-10-codes). Cumulative risk (CR) of psychiatric disorder was calculated by treating death as a competing event. Cox proportional hazards regression was used to compute hazard ratios (HRs) as a measure of relative risks, and the associated a 95% confidence interval (CI).

Results: The overall CR (0-22 years) of any psychiatric disorder was increased in children with iGBS (22.6% (95% CI 19.4–25.9%)) compared to the comparison cohort (19.4% (95% CI 18–20.8%)). Our findings also include an increased risk of neurotic disorders, mental developmental disorders, and emotional disturbances.

Conclusion:

This paper shows an increased long-term risk of psychiatric disorders following neonatal iGBS. Our findings close another knowledge-gap regarding neonatal, invasive infections and long-term outcomes related to mental health. Several neonatal infections, including iGBS, can be prevented with screening, antibiotic treatment, or vaccines.

In conclusion, our study sheds new important light on the issue of invasive, neonatal infections and the long-term implications. Our findings indicates that preventive strategies can reduce the burden of mental health disorders in the future.

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