Paediatrics

Preterm birth associated with increased risk of developmental problems at the age of five

Rates of cerebral palsy and moderate and severe neurodevelopmental problems at the age of five were higher in children born prematurely compared with those born at full term, a large study from France has found.

EPIPAGE-2, a population based cohort study, recruited preterm infants born in three gestational age groups: 22-26 weeks, 27-31 weeks and 32-34 weeks during 2011, from 25 French regions.

Children were invited to take part in a comprehensive neurodevelopmental assessment at the age of five.

The control group consisted of 592 infants born at 37-41 weeks' gestation identified from another cohort.

Data were analysed on 3,083 children born preterm, at the age of five. Assessments included an interview with parents, a self-administered parental questionnaire, clinical examination by a paediatrician, and an evaluation by a psychologist.

Standard tools were used to assess motor, sensory, cognitive and behavioural domains. Measures such as the need for extra support at school, visits to a psychiatrist, speech therapist or physiotherapist, and parental concerns about development, were also recorded.

Classification of severe/moderate neurodevelopmental disabilities was based on a composite of: the severity of cerebral palsy, sensory impairment (visual or hearing), and cognitive deficiency (IQ).

Outcomes at age five years according to gestational age at birth

Cerebral palsy rates
24-26 weeks: 12% (95% CI: 9.1-15.7%)
27-31 weeks: 6% (95% CI: 4.8-7.1%)
32-34 weeks: 2% (95% CI: 1.3-3.5%)

Rates of severe/moderate neurodevelopmental disabilities
24-26 weeks: 28% (95% CI: 23.4-32.2%)
27-31 weeks: 19% (95% CI: 16.8-20.7%)
32-34 weeks: 12% (95% CI: 9.2-14.0%)

Mean full scale IQ
24-26 weeks: 90 (mean SD 16.6)
27-31 weeks: 94 (mean SD 15.7)
32-34 weeks: 97 (mean SD 15.0)

Additional assistance at school
24-26 weeks: 27% (95% CI: 22.9-31.7%)
27-31 weeks: 14% (95% CI: 12.1-15.9%)
32-34 weeks: 7% (95% CI: 4.4-9.0%)

Behavioural difficulties were reported less often as gestational age increased, decreasing from 12.0% in those born at 24-26 weeks to 8% in children born at 32-34 weeks.

Around half (52%) of children born at 24-26 weeks received at least one developmental intervention compared with a quarter (26%) of those born at 32-34 weeks.

The study provides evidence that preterm birth is associated with a range of neurodevelopmental problems in children at the age of five. It should alert GPs to be vigilant when dealing with such children who may need developmental, educational or behavioural support.

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Pierrat V, Marchand-Martin L, Marret S et al. Neurodevelopmental outcomes at age 5 among children born preterm: EPIPAGE-2 cohort study. *BMJ* 2021;372:n741