

Birth complications associated with cerebral palsy: are prolonged rupture of membranes a risk factor in children born at term?

Stud.med. forskerlinjestudent Maren Mynarek, NTNU, Trondheim, Solveig Bjellmo, Ålesund sjukehus, Møre- og Romsdal (HF), Ålesund and Torstein Vik, Department of clinical and molecular medicine, NTNU, Trondheim.

Background: Prolonged rupture of membranes (ROM), defined as breaking of water more than 24 hours before birth, increases the risk for perinatal infections.

Hypothesis: We hypothesized that prolonged ROM would be associated with increased risk for cerebral palsy (CP).

Materials/Methods: Singletons without malformations born at term in Norway during 1999-2009 were included. Out of 559 634 eligible children, 589 were diagnosed with CP. Data on maternal diseases, obstetric history, birth and treatment of the newborn, were retrieved from the Medical Birth Registry of Norway. Logistic regression was used to calculate odds ratio (OR) with 95% confidence intervals (CI) for CP in children born after prolonged ROM.

Results: In all, 30 313 children were born after prolonged ROM and of these 47 had CP (prevalence: 1.6 per 1000 births), compared with 499 of the 494 578 children in the reference group (prevalence: 1.0 per 1000; OR: 1.5; CI: 1.1-2.1). Adjusting for a number of potential confounders did not affect this association. However, children born after prolonged ROM with CP were more likely to have been treated with antibiotics in the newborn period than the reference group (OR: 7.6; CI: 4.0-14.8). When adjusting for antibiotic treatment, the association between prolonged ROM and CP disappeared (OR: 1.1; CI: 0.8-1.5). There were no differences in CP subtypes, motor function or associated problems between children with CP born after PROM and the reference group.

Conclusion: In this study, prolonged ROM was an independent risk factor for CP. However, the results suggested that antibiotic treatment probably a proxy for perinatal infection was a significant mediator of this association. Although the absolute risk for CP associated with prolonged ROM was low, further studies should address if earlier intervention following rupture of membranes may prevent some cases of CP.