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Prognostic significance of neurological signs in high-risk infants - a systematic review

Elisa G Hamer[1], Mijna Hadders-Algra[1]

Abstract

The aim of this paper was to systematically review the literature on the significance of specific neurological signs in infancy, in particular in infants at risk for developmental problems such as cerebral palsy (CP). A literature search was performed using the databases PubMed, Embase, Web of Science, and AMED. Papers on infantile reactions ('primitive reflexes') and postural reactions were included if data were available allowing for calculation of sensitivity, specificity, or positive and negative predictive value for CP or atypical developmental outcome. Our search identified 23 articles on 20 different neurological signs. Properties of six neurological signs were reported in at least three different papers. The data indicated that, in early infancy, an absent Moro or plantar grasp response may be predictive for adverse developmental outcome. After early infancy, persistence of the Moro response and asymmetric tonic neck reflex was clinically significant. Prediction of a delayed emergence of the parachute reaction increases with age. Abnormal performances on the pull-to-sit manoeuvre and vertical suspension test have predictive significance throughout infancy. The neurological signs reviewed have some predictive value in infants at risk. For most of the signs, criteria for abnormality and significance are age-dependent.