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Hydrocephalus in children-epidemiology and outcome

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Clinical background

A population based study on live birth prevalence, aetiology and clinical outcome in children with hydrocephalus.

Materials and Methods

All 206 children with hydrocephalus born during the ten-year period 1989–98 in the western part of Sweden. Etiological and clinical information were collected from records.

Results

The prevalence of hydrocephalus was 0.8 per 1000 livebirths, for isolated hydrocephalus 0.48 and for hydrocephalus associated with myelomeningocele (MMC) 0.32/1000. The prevalence decreased during the period from 0.54 to 0.43/1000 for simple hydrocephalus and from 0.35 to 0.33/1000 livebirths for MMC.

The aetiology was prenatal in 67/122 (55%) children without MMC, peri-postnatal in 54 (44%) and unknown in one. In children born very preterm the origin was perinatal in 22/24 (92%) almost exclusively caused by cerebral haemorrhage. The cause in most children born at term was prenatal maldevelopments.

A ventriculoperitoneal shunt was inserted in 183/201 (91%) children treated within the region. Ventriculostomy was used as initial intervention in 18 cases and was the final solution to the problem in 14 cases. There was a need for at least one revision in 69%.

Of 195 surviving children 63 had mental retardation, 36 cerebral palsy and 43 epilepsy. No associated impairment was present in 103 children (54%) except for those resulting from the spinal lesion in 55 children with MMC. Information was missing in three children. The prognosis was poor in children born very preterm (gestational age <32 weeks) of whom all 21 children had major neuroimpairments, mental retardation in 14, cerebral palsy in 17 and epilepsy in 13. Another subgroup with relatively poor prognosis was children with isolated hydrocephalus overt at birth where 33/42 (79%) had some associated major neuroimpairment.

Conclusion

A decreasing trend of hydrocephalus was observed during the ten-year period. Children born very preterm had a poor outcome. The frequent need for neurosurgical revisions indicated a need for further development of treatment strategies.