Cerebrospinal Fluid Research

BioMed Central

Oral presentation

Open Access

Outcome on renal function in children with neurogenic bladder dysfunction of a standardised follow-up programme

Peter Wide*, Gunilla Gladh and Sven Mattsson

Address: Linköping University, Dept Molecular and Clinical Medicine, Division of Pediatrics, SE-581 85 Linköping, Sweden

Email: Peter Wide* - Peter.Wide@lio.se

* Corresponding author

from 51st Annual Meeting of the Society for Research into Hydrocephalus and Spina Bifida
Heidelberg, Germany. 27–30 June 2007

Published: 20 December 2007

Cerebrospinal Fluid Research 2007, **4**(Suppl 1):S19 doi:10.1186/1743-8454-4-S1-S19

This abstract is available from: http://www.cerebrospinalfluidresearch.com/content/4/S1/S19

Background

Renal damage still constitutes a major reason for morbidity and mortality in persons with Spina Bifida [1]. Clean intermittent catheterisation is the cornerstone in treatment of neurogenic bladder dysfunction often combined with anticholinergics [2]. Multiple techniques of renal protective surgery have been developed but have also significant risks of both short- and long-term side effects. In Sweden national guidelines for follow-up of children with Spina Bifida have been developed [3], now under revision.

Materials and methods

Records and cystometries of 40 consecutive children with spina bifida, and 1 child with sacral agenesis were reviewed. The children, 19 girls and 22 boys, were born 1993 unto 2003 and were followed in our department with repeated urodynamics and other evaluations according to the guidelines. Thirty had ventriculoperitoneal shunts and all but one neurogenic bladder dysfunction. Clean intermittent catheterisation (CIC), was used by 38/41. Most children were followed from birth giving a mean follow-up time of 9 years. Children who twice had resting pressure >30 cm H_2O at maximum CIC or voided volume were regarded as a high pressure group.

Results

All children had a normal total renal function but 4 of the 41 had a detectable renal damage by renal scintigraphy (MAG3 or DMSA). In two of these children the damage was already existent before entering the standardised follow-up programme (at age 2 respectively 3 years) and had shown no further deterioration since. Two of the children had a borderline GFR on Cr-EDTA-clearance, but in the normal range, while the remaining had normal laboratory results. At the end of the study 23 children were receiving anticholinergic treatment, all but three intravesically, and only three children used prophylactic antibiotics. None of the children had been through any renal protective surgery. Of seven children in the high pressure group four had renal damage, while none in the low pressure group (significant $p < 0.05$). It is noticeable that these four children had all a complicated social situation. Urinary tract infections were significantly more frequent in the high pressure group and in the children with renal damage ($p < 0.05$).

Conclusion

A pro-active follow-up programme with early conservative treatment showed a high rate of success in preventing renal damage. This was reached without any renal protective surgery. Those with high resting pressures had significantly more renal damages and urinary tract infections.

References

1. Muller T, Arbeiter K, Aufricht C: **Renal function in meningomyelocele: Risk factors, chronic renal failure, renal replacement therapy and transplantation.** *Curr Opin Urol* 2002, **12:**479-484.
2. Kessler TM, Lackner J, Kiss G, Rehder P, Madersbacher H: **Early proactive management improves upper urinary tract function and reduces the need for surgery in patients with myelomeningocele.** *Neurourol Urodynam* 2006, **25:**758-762.

3. Mattsson S, Gladh G: **The Swedish National Programme for Children with Neuropathic Bladder and Bowel.** *Eur J Pediatr Surg* 2001, **11(Suppl 1):**S64.