VESICOURETERAL REFLUX RISK IN PATIENTS WITH NEURAL TUBE DEFECTS

Hypothesis / aims of study
Urologic complications leading to chronic renal failure are one of the most important causes of death in patients with neural tube defects (NTD). Vesicoureteral reflux (VUR) is a common finding in this type of population. It is the purpose of this study to establish the risk of developing VUR in patients with NTD.

Study design, materials and methods
We performed a retrospective cohort study. Patients were selected from our NTD Clinic database. We included male or female patients between 0 and 25 years old with the diagnosis of lumbosacral myelomeningocele. Only patients who had both a voiding cystourethrogram (VCUG) and an urodynamic study were selected.

Results
We have registered a total of 465 patients in our NTD Clinic database. Only 146 patients had access to a VCUG and urodynamic evaluation. VUR was diagnosed in 33 patients. There was a major prevalence of high-grade reflux (IV-V). We grouped the urodynamic findings in 4 clusters: Group I (Pdet > 30 cmH\(_2\)O/ Pura > Pdet), Group II (Pdet > 30 cmH\(_2\)O/ Pura < Pdet), Group III (Pdet < 30 cmH\(_2\)O/ Pura > Pdet), Group IV (Pdet < 30 cmH\(_2\)O/ Pura < Pdet). All pressures were recorded at maximal bladder capacity according to age.

100 patients were classified in Group I (25 (25 %) had VUR). 20 patients were classified in Group II (3 (15 %) had VUR). 9 patients were classified in Group III (2 (22%) had VUR). And 17 patients were classified in group IV (3 (17.6 %) had VUR).

Interpretation of results
Group I patients had 47 % more probability to develop VUR than patients in the other groups. Regardless of Pdet, patients with high Pura (>Pdet) have 50 % more risk to develop VUR than patients with low Pura (<Pdet).

Concluding message
Myelomeningocele patients have a greater risk to develop VUR. Even though our series, due to financial reasons was narrowed from 465 patients to 146 patients, we estimated a 22 % prevalence. Patients who develop a hypertonic bladder in conjunction with high urethral sphincter pressures have the greatest risk to develop VUR. We also concluded that Pura, regardless of Pdet is a major determinant for the appearance of VUR.

References

Disclosures
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