

## EFFECTIVE TREATMENT OF NOCTURNAL ENURESIS RESULTS IN AMELIORATION OF NEUROCOGNITIVE DYSFUNCTION AND DISRUPTED SLEEP.

### Hypothesis / aims of study

The high comorbidity between nocturnal enuresis, sleep disorders and psychological problems is suggestive of a common pathway in the central nervous system. This study aims to evaluate the effect of a simple therapeutic intervention for nocturnal enuresis on the major comorbidities: disrupted sleep and neuropsychological dysfunction.

### Study design, materials and methods

In this open-label, prospective phase IV study, children with monosymptomatic nocturnal enuresis associated with nocturnal polyuria, underwent standardized video-polysomnographic testing and multi-informant neuropsychological testing at baseline and 6 months after the start of desmopressin treatment. The primary endpoints were the change in sleep and neuropsychological functioning. Neuropsychological functioning was measured on five domains: quality of life, attention, executive function, internalizing problems and externalizing problems. The secondary endpoint was the change in the first undisturbed sleep period or the time to the first void.

### Results

Thirty-nine patients were screened and 35 patients were included in the study and completed the first examination. Thirty children (23 boys and 7 girls) between 6 and 16 years (mean 10.43, SD 3.08) completed the study. Response rate to desmopressin was 82%. The study demonstrated a significant decrease in periodic limb movements during sleep ( $F(1,26)= 122.50$ ,  $p<0.001$  [95% CI, -6.26 to -3.27]) and a prolonged first undisturbed sleep period. Additionally neuropsychological functioning was improved on several domains: quality of life, executive functioning, internalizing problems and externalizing problems.

### Interpretation of results

Effective treatment results in a decrease in periodic limb movements during sleep and a prolonged first undisturbed sleep period.

### Concluding message

This study demonstrates that effective treatment of nocturnal polyuria in children with monosymptomatic nocturnal enuresis has a beneficial effect on sleep disruption and neuropsychological dysfunction.

### Disclosures

**Funding:** Ferring provided desmopressin **Clinical Trial:** Yes **Registration Number:** Clinical Trials.gov NCT01645475 **RCT:** No **Subjects:** HUMAN **Ethics Committee:** University Hospital Ghent **Helsinki:** Yes **Informed Consent:** Yes