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