

## THE INCIDENCE OF PARASOMNIC EVENTS IN ENURETIC CHILDREN AND THEIR RELATIVES AS WELL AS NOCTURIA COMPARED TO A CONTROL GROUP OF HEALTHY SCHOOL CHILDREN

### Hypothesis / aims of study

Increasing knowledge exists about sleep abnormalities of enuretic children but no data exist in regards of parasomnia. This study was conducted to investigate whether the rate of parasomnia is increased in enuretic children compared to healthy school children and whether this phenomenon can also be found in their relatives.

### Study design, materials and methods

In this preliminary study conducted in 5 centers fifty three enuretic children and thirty one healthy school children without lower urinary tract symptoms were enrolled. Typical gender distribution of 40 boys and 15 girls was found in the enuretic patients. Among the healthy school children were 14 boys and 17 girls. Beyond the typical anamnesis a careful history was taken in regards of full awakeness when their parents aroused them at night, whether they woke up themselves and whether they have toilet dreams. The parents were asked about parasomnic events of their children such as sleepwalking, pavor nocturnus, speaking and other phenomenons e.g. teeth-grate or high motoric activity. Also a careful family history focusing on nocturia and parasomnic events was taken. The interviews were sub-grouped in monosymptomatic nocturnal enuresis (MNE)=27 patients 19 boys and 8 girls, non-monosymptomatic nocturnal enuresis (N-MNE) 28 children 21 boys and 7 girls and controls (C). Six MNE children and 17 N-MNE patients were pretreated. As these are preliminary data a statistical analysis was not performed and only trends are reported. A further study with more centers and an increased number of patients will be conducted.

### Results

About a quarter of patients (MNE=26%, N-MNE=28%) remembers to be aroused by their parents the next morning. MNE children arouse half as often (32%) as N-MNE patients (60%) what is comparable to C=53%. Seven % of the controls (C) report about toilet dreams. but 28% of the boys and 63% of the girls with MNE and 43% N-MNE in both genders respectively. In regards of parasomnic events about 15% of all patients were sleep walkers and about 40% suffered from pavor nocturnus with no difference of their enuresis subgroup or gender. No child from the controls had similar experiences. There was no difference in speaking or other parasomnic events in all 3 groups. There was also no difference in nocturia with mothers affected more than fathers. Figures were comparable in brothers and sisters of all three groups. Toilet dreams are reported in one fifth of the MNE and C fathers but two fifth of the N-MNE fathers. The patient mothers reported toilet dreams at least twice as much as mothers of healthy children. No difference was found in brothers and sisters of patients and controls. In regards of parasomnia a quarter of parents in the N-MNE group reported sleep walking but no of the MNE and C parents. All other parasomnic events were comparable in all 3 groups. In brothers and sisters pavor nocturnus was only reported in about a third of the MNE and a fifth of the N-MNE group. The other parasomnic events were comparable in all 3 groups.

### Interpretation of results

Toilet dreams as well as sleep walking and pavor nocturnus are present in a high number of enuretic patients but not in controls. In opposite to the general view of a difficult arousability in a quarter of patients arousability seems to be not a problem. Spontaneous arousal, which can be recalled by the patient, happens twice as often in N-MNE children than in MNE children. This might be explained by detrusor instability. This information could be a helpful item in the patient's history to subgroup enuresis. As enuresis is proven to be hereditary, a phenomenon as toilet dreams is reported in the same frequency in patients and their parents. Same was found for special parasomnic events like sleep walking and pavor nocturnus. Pavor nocturnus seems to be more present in brothers and sisters of enuretic children. As nocturia is known to be a multifactorial symptom it is found in the same number of parents of patients and controls.

### Concluding message

Further research in central nervous aspects of enuretic patients is mandatory. This might give more insights of the disease and open treatment options not considered so far.

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| <i>Specify source of funding or grant</i>                           | none  |
| <i>Is this a clinical trial?</i>                                    | No  |
| <i>What were the subjects in the study?</i>                         | HUMAN   |
| <i>Was this study approved by an ethics committee?</i>              | No  |
| <i>This study did not require ethics committee approval because</i> | only further questions concerning patient's history were asked which did not influence decisions about treatment, so an ethical approval was not necessary. |
| <i>Was the Declaration of Helsinki followed?</i>                    | Yes   |
| <i>Was informed consent obtained from the patients?</i>             | No  |