

TREATMENT RESULTS IN CHILDREN SUFFERING FROM NOCTURNAL ENURESIS IN REGARDS TO THEIR TREATMENT PERIODS, AGE, GENDER AND ENURESIS FREQUENCY

Hypothesis / aims of study

This prospective, investigator initiated study analyses the influence of treatment periods, age, gender and enuresis frequency on outcome of PNE.

Study design, materials and methods

PNE children were investigated according the ICI algorithm (1) and additionally at least two EMG-urowflows were applied. A bladder diary was kept for 2 weekends (Friday afternoon to Monday morning) to record daytime habits and two weeks to record nocturnal diuretic volume.

All enrolled children had nocturnal polyuria. Outcome was relief of bedwetting, follow-up was 4 -75 months (mean 38.5).

Behavioural modifications for drinking and toilet habits (urotherapy) were applied for at least two weeks. Non-Responders (NR) were assigned to Desmopressin as a 1st line treatment. Complete responders (CR) had a structured withdrawal program.

Partial responders (PR) who showed poly-symptomatic PNE were assigned to an adjuvant 2nd line treatment according to their individual symptomatology, incorporating anticholinergics (propiverine), biofeedback, alpha-blocker (alfuzosine), alarm and psychotherapy, in addition to Desmopressin. NR were referred to specialized management.

Results

144 children (age 5 – 16 y, mean 7,7y), 52 girls and 92 boys were included; they were grouped for age 5+6 y (n=58), 7-9 y (n=44) 10+11 y (n= 23), 12+12 y (n=13) and 14 y and older (n=6). Up to age group 9 years, gender was distributed in the well know 1/3 girls to 2/3 boys pattern. In children 10 y and older, girls became more predominant up to 50%. Patients 5 – 7 y had highest frequency/week (80% 6-7/week); lowest frequencies (1-2/week) were found in older children (10 y and older). Diagnoses were differentiated as mono-symptomatic enuresis (62%) and poly-symptomatic enuresis (38%) as PNE+OAB (16%), PNE+ dysfunctional voiding (14%) and PNE + dysfunctional voiding+ OAB (8%). From 5 – 11 y mono-symptomatic enuresis was found in 67 – 72%; in age group 12 – 13y 46% suffered from poly-symptomatic enuresis. Children 14 and older all had only mono-symptomatic enuresis. In age group 7 – 9 y and 14 y and older CR was 93%/83%, all others had 70-77% after 6 months of treatment. Overall complete response rate was 81 -100%. Outcomes in girls were equal to boys. Non-Responder rate was 0.7%. No relapse occurred.

Interpretation of results

The founding that bedwetting frequency was decreasing by age might be interpreted as the process of maturation of ADH production in relation to age. Treatment outcomes in older children and girls are equal to younger ones and boys. ADH might be stimulated in accordance to age and enuresis frequency. This analysis is a plea for a very careful investigation of enuretic children because additional diagnoses such as dysfunctional voiding might be overlooked and therefore result in poor treatment outcomes. One has to be aware of this fact especially when treating children in prepubertal age groups.

After 6 months over 80% showed complete response with marginal benefit from extended treatment.

Long term results were excellent, which might be due to the structured withdrawal program.

Concluding message

The better PNE patients are differentiated, the better the treatment outcome. Therefore very individualized treatment strategies are improving results.

Reference:

(1) Conservative Management of Urinary Incontinence in Children, Int. Consultation on Incontinence, 2nd Edition 2002: 513, 2002

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