194

Aoki K[1], Fukui S[1], Morizawa Y[1], Miyake M[1], Torimoto K[1], Fujimoto K[1]
1. *Department of Urology, Nara Medical University*

URINARY NERVE GROWTH FACTOR MAY PREDICT THERAPEUTIC SUCCESS IN MONOSYMPTOMATIC NOCTURNAL ENURESIS

Hypothesis / aims of study
Primary monosymptomatic nocturnal enuresis (MNE) is caused by a complex set of conditions, involving a mismatch between nocturnal diuresis and bladder capacity as well as a disturbance of arousal before micturition. Insufficient bladder capacity at night is a mainly cause of MNE. Urinary nerve growth factor (NGF) is considered a potential biomarker for overactive bladder syndrome in both children and adults. In this study we measured urinary NGF in children with MNE and evaluated the relationship between MNE and urinary NGF as a predicting factor of therapeutic success.

Study design, materials and methods
Urine samples were collected from 30 children (23 boys and 7 girls, mean age: 9.1 years) with MNE before treatment and 11 children (6 boys and 5 girls, mean age: 10.0 years) without MNE as a control group. Urinary NGF levels were measured by using ELISA (Enzyme-Linked ImmunoSorbent Assay. NGF levels were normalized to the concentration of urinary creatinine. After 3 months of desmopressin or alarm treatment, treatment outcomes were assessed according to International Children's Continence Society criteria. The disparity of urinary NGF/Cr was evaluated between the MNE and in a control groups. The relationship between urinary NGF/Cr and treatment outcomes were also evaluated.

Results
Urinary NGF/Cr was significantly higher in the MNE group, compared with the control group (0.63±0.66 vs. 0.11±0.09, p=0.0005) (Fig. 1). After treatment, success (defined as more than 90% reduction in wet nights per month) was achieved in 12 children in the MNE group (40%). Urinary NGF/Cr was significantly lower in the treatment-success group, compared with the non-success group (0.18±0.15 vs. 0.93±0.86, p=0.0009) (Fig. 2).

Interpretation of results
In the present results, there was a significant difference in urinary NGF/Cr between the patients with MNE and controls. Moreover, urinary NGF/Cr was significantly lower in the treatment-success group, compared with the non-success group. These might imply that high urinary NGF/Cr levels reflect lower urinary tract dysfunction which may cause refractory MNE.

Concluding message
Urinary NGF/Cr was significantly higher in children with MNE than in controls and was lower in the treatment-success group than in the non-success group. Urinary NGF/Cr may become a potential biomarker for MNE and a predictor of treatment outcome for children with MNE.

Fig. 1

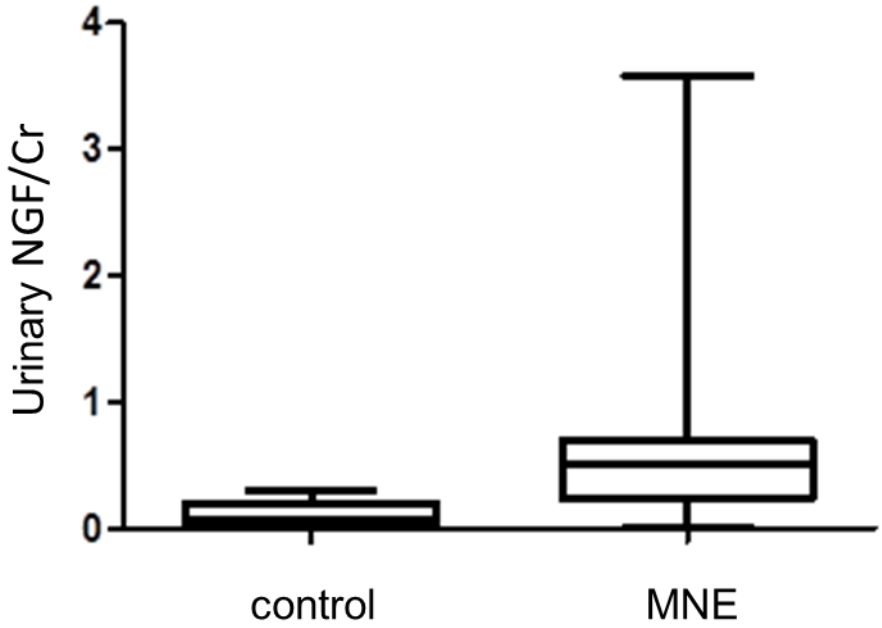
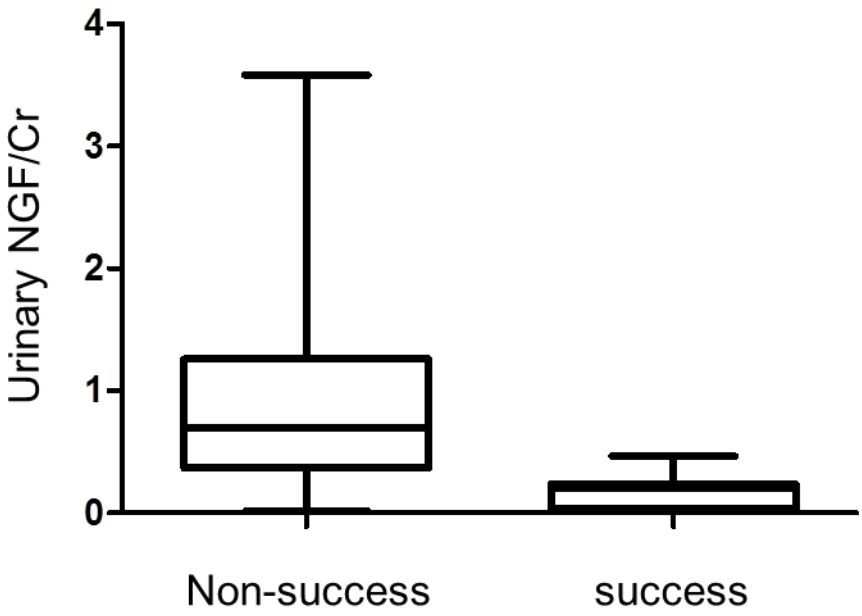


Fig. 2



Disclosures
Funding: We don't receive any funding or grant. **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics Committee:** Nara Medical University Ethics Committee **Helsinki:** Yes **Informed Consent:** Yes