THE TZU CHI NOMOGRAMS FOR PEAK FLOW RATE IN CHILDREN: COMPARISON WITH MISKOLC NOMOGRAM

Hypothesis / aims of study
To report the first ranking method based age- and gender-specific nomograms for peak flow rate (Qmax).

Study design, materials and methods
Healthy children aged 4 to 12 years were enrolled for two sets of uroflowmetry tests. The first and the higher value of the two consecutive Qmaxs of each child with a voided volume (VV) \(\geq\) 50ml were included for establishing Single- and Dual-Qmax nomograms. Children with possible urinary tract infection or lower urinary tract dysfunctions were excluded.

Results
Totally, 1128 children (583 boys and 545 girls) with a mean age of 7.7±2.2 years were eligible for analysis and construction of nomograms. Multivariate analysis revealed that Qmax value was significantly affected by age, VV and gender (all p<0.01). The values of the corresponding percentile of Qmax were significantly higher in the Dual- than Single-Qmax nomogram. In boys aged 8-12 years, the 5\(^{th}\) percentile line of Miskolc nomogram was significantly lower than that of current nomograms at all voided volumes.

Interpretation of results
Minimally acceptable Qmaxs, around 10\(^{th}\) percentile of Dual-Qmax nomogram, are \(\leq\) 11.5 ml/sec in children aged \(\leq\) 6 years and \(\leq\) 15.0 ml/sec in children aged \(\geq\) 7 years. External validation is required for current Dual-Qmax nomograms.

Concluding message
Using the current Dual-Qmax nomogram may uncover more real cases of lower urinary tract dysfunction in boys aged 8-12 years. We recommend repeating uroflowmetry in cases with Qmax lower than the minimally acceptable Qmax. Invasive urodynamic study is recommended in cases with repetitive Qmax lower than the 5\(^{th}\) percentile value of age- and gender-specific Dual-Qmax nomograms.

References

Disclosures
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