

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) ≥ 50 ml 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 5th percentile line of Miskolc nomogram was significantly lower than that of current nomograms at all voided volumes.

Interpretation of results

Minimally acceptable Qmaxs, around 10th percentile of Dual-Qmax nomogram, are ≤ 11.5 ml/sec in children aged ≤ 6 years and ≤ 15.0 ml/sec in children aged ≥ 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 5th percentile value of age- and gender-specific Dual-Qmax nomograms.

References

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Disclosures

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