



# Adolescents with functional bowel dysfunction at higher risk of having lower urinary tract symptoms: a community-based study

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**Objective:** To investigate the association between functional bowel dysfunction and lower urinary tract symptoms/functions in healthy adolescents

**Methods:** Healthy adolescents (13-18 years) were enrolled to evaluate the prevalence of constipation (FC) and irritable bowel syndrome (IBS) defined by Rome III criteria and its associations with lower urinary symptoms/function. A self-administered questionnaire was completed by adolescents from junior and senior high schools and the parameters included baseline characteristics (age, gender, body height and weight), symptoms of functional constipation and Dysfunctional Voiding Symptom Score (10 items, 7 related to voiding, score 0 to 3) in the past months. All participants were asked to have one set of uroflowmetry and post-void residual urine (PVR) test to evaluate the lower urinary tract function. Only bell-shaped curves were regarded as normal. Comparisons between groups were made with X2 test (categorical), Mann-Whitney test (ordinal) and independent t tests (continuous). A p-value of <0.05 was considered statistically significant

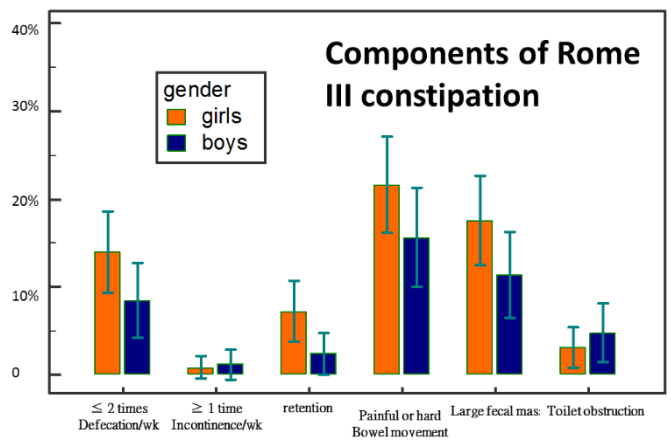
**Results:** A total of 388 adolescents  $14.5 \pm 1.6$  years, boys vs. girls: 166 vs. 222) were eligible for analysis. The prevalence of FC was 15.0% and boys were at less odds for having FC (OR: 0.41, 95CI:0.36-0.8). (Figure 1) Figure 2 showed that constipated adolescents had significantly higher daytime wetting, urgency, curtsying, dysuria, wetting and infrequent voiding except abdominal straining. FC had no significant impact on peak flow rate, abnormal flow patterns and PVR. (Table 1) The prevalence of IBS was 10.9% without gender difference (OR: 1.23, 95CI:0.65-2.34). ) Figure 3 showed that IBS adolescents only had significantly higher urgency and curtsying symptom score.

**Conclusions:** adolescents with functional bowel dysfunction have higher scores of lower urinary tract symptom especially regarding to urgency and curtsying.

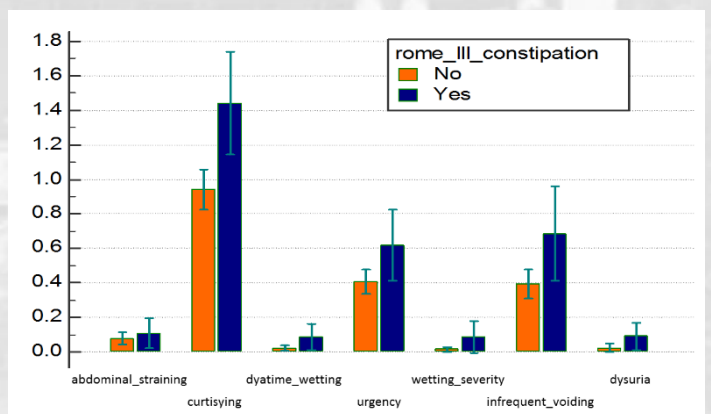
**Table 1 Uroflowmetry in non-constipated vs. constipated**

	Non-constipated N=330	Constipated N=58	p-value
Age (years)	14.5 ±1.6	14.8 ±1.6	0.14
Gender (M/F)	0.458	0.259	<0.01
Qmax (ml/sec)	28.7 ±10.9	29.3 ±10.5	0.73
VV (mL)	302.9 ±160.2	276.2±154.6	0.25
PVR (mL)	12.6 ±12.9	14.2±12.1	0.23

**Figure 1: comparisons of the prevalences of symptom components between genders**



**Figure 2: comparisons of the symptom score between constipated vs. non-constipated adolescents**



**Figure 3: comparisons of the symptom score between IBS vs. non-IBS adolescents**

