Hypothesis / aims of study
The prevalence of OAB amongst enuretic children has little been studied and published data on the use of antimuscarinics for treating nocturnal enuresis are sparse. In a single centre Functional urology outpatient clinic we investigated retrospectively the characteristics of nocturnal enuresis among paediatric patients, with a focus on OAB and treatment effect of antimuscarinics.

Study design, materials and methods
Study population:
Paediatric patients with primary symptom of nocturnal enuresis
Retrospective analysis:
Primary vs. secondary enuresis
Monosymptomatic enuresis vs. OAB symptoms together with enuresis
The recommended first line treatment
Uroflow parameters were compared prior and after treatment with antimuscarinics (AM).

Results
We analyzed data from 100 children (57 boys and 43 girls) with mean age 8.8 (sd:2.6) years.
Primary enuresis was found in 71%.
Monosymptomatic enuresis was reported in only 22% of patients.
Concomitant OAB symptoms were reported in 88% and confirmed by bladder diary in 61%.
OAB-wet daily symptoms were reported in 40% and confirmed by bladder diary in 36%.
N=57 patients (57%) were treatment naive, while 23% had a prior history of desmopressin treatment.
First line treatment given was:
antimuscarinics: 72%
desmopressin: 10%
behavioural treatment: 18%.

Uroflow parameters (Table 1)
Mean voided volume increased by 23.4% after treatment with antimuscarinics, although not statistically significantly.
Maximum urinary flow (Qmax) and post void residual (PVR) were also found to be statistically unchanged after antimuscarinic treatment.

Table 1.
<table>
<thead>
<tr>
<th></th>
<th>Mean Qmax ml/sec</th>
<th>Mean Voided Volume</th>
<th>Mean PVR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Treatment</td>
<td>19.98</td>
<td>159.53 ml</td>
<td>12.6 ml</td>
</tr>
<tr>
<td>Post Treatment</td>
<td>23.02</td>
<td>196.89 ml</td>
<td>13.10 ml</td>
</tr>
<tr>
<td>P value</td>
<td>0.231</td>
<td>0.137 ml</td>
<td>0.987 ml</td>
</tr>
</tbody>
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Clinical symptoms change after AMs:
Nocturnal enuresis from those patients under antimuscarinics was:
cured in 25%
significantly improved in 65%
No improvement was noticed in 8%
worsening in 2%
Significant (45.48%, p<0.0001) overall reduction of the mean number of episodes of enuresis per week was found after treatment
Mean reduction was 58.32% (p<0.0001) in the treatment naive population
Crossover from desmopressin to AMs resulted in a 50.93% (p=0.006) reduction of the mean episodes of enuresis per week while crossover to behavioural treatment in only 19% reduction (p=0.38).

Interpretation of results
Enuresis as part of the OAB syndrome seems to be a common observation during initial evaluation of children with enuresis.
First line treatment with antimuscarinics improves the vast majority of those children and should be considered in all patients without monosymptomatic enuresis.

Conclusions
✓ Children with nocturnal enuresis should always be evaluated and screened for Overactive bladder
✓ Antimuscarinics can be offered as first line treatment whenever there are symptoms suggestive of OAB and confirmed based on bladder diary.
✓ Desmopressin, although widely used, should be preserved only in monosymptomatic enuresis with confirmed nocturnal polyuria on bladder diary as monosymptomatic enuresis seems to be present in a minority of enuretic children.