In conclusion, our findings suggest that besides the merit of urinary ATP as a highly sensitive biomarker of detrusor overactivity in women with OAB, urinary ATP may be a dynamic biomarker of detrusor overactivity in men with OAB. The present study was designed to evaluate modifications in the urinary ATP content in OAB patients after injection of BoNT-A to establish its predictive value of therapeutic outcome in this condition.

Results
Injection with BoNT-A caused an overall improvement of patients’ symptom scores as evaluated by increments in bothersome and QOL domain scores of the OABq questionnaire. One female patient was considered a non-responder. The average urinary ATP concentration decreased from 4.62±2.46 nM to 3.04±2.26 nM (p=0.096) after injecting BoNT-A into the bladder wall. This decrease reached statistical significance (p=0.044) if one only considers the responders to treatment; in this case, urinary ATP diminished from 4.73±2.48 nM to 2.82±2.64 nM (n=19). The voided volumes were consistently augmented (p=0.01) in OAB patients submitted to BoNT-A treatment (275.8±143.3 ml) compared to the situation before toxin injection (180.0±95.1 ml). However, urinary ATP diminishes after BoNT-A independently of the voided volume. Although urinary ATP before BoNT-A injection did not correlate with the bothersome domain score of the OABq questionnaire (r=0.216, p=0.361), we found a significant inverse correlation between urinary ATP concentration before the toxin and the degree of improvement in the QOL domain (r= -0.571, p=0.008).

Interpretation of results
Reduction of urinary ATP concentration parallels the significant clinical improvements of OAB patients submitted BoNT-A treatment. This finding strengthens our initial assumption that urinary ATP may be a sensitive biomarker of OAB severity. Moreover, our data suggest that a higher initial urinary ATP concentration is associated with limited benefits in the quality of life score after BoNT-A treatment.

Concluding message
In conclusion, our findings suggest that besides the merit of urinary ATP as a highly sensitive biomarker of detrusor overactivity in OAB patients, urinary ATP may also predict BoNT-A treatment outcome in these patients.

References

Disclosures
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