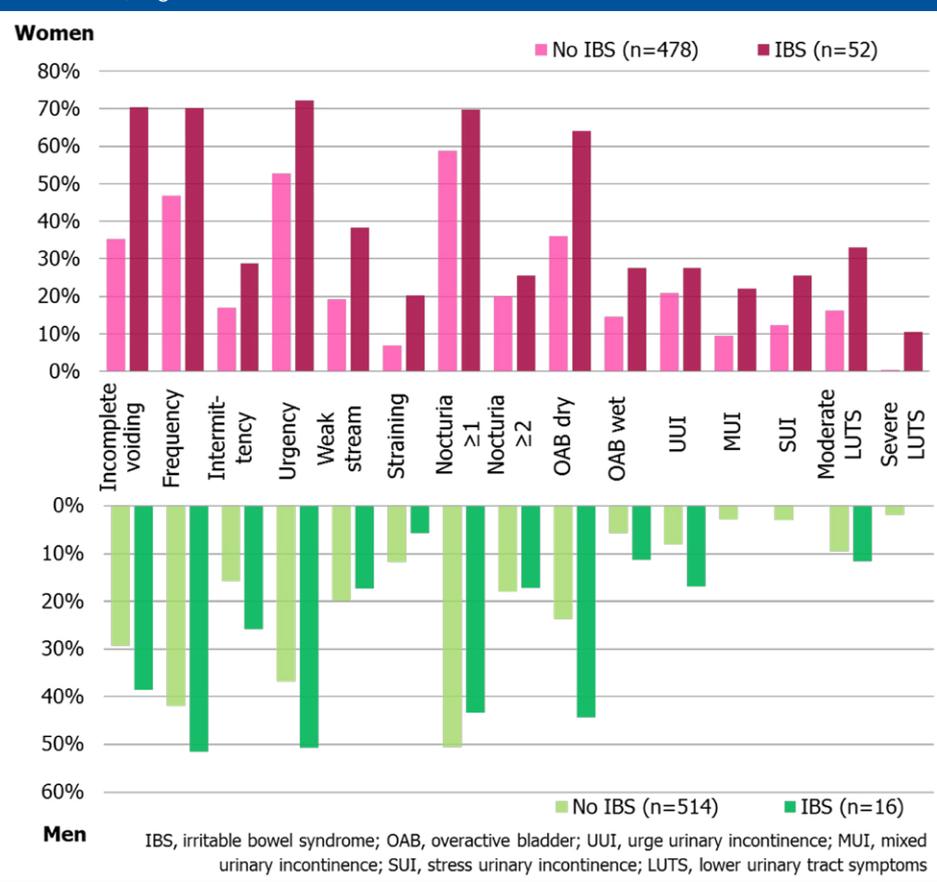


MP-11.06, Figure 1. Individual LUTS/OAB in Men and Women with And Without IBS



¹Odessa National Medical University, Odessa, Ukraine; ²Vinnitsia National Pirogov Memorial Medical University, Vinnitsia, Ukraine; ³State Institution A. A. Shalimov National Institute of Surgery and Transplantology, Shalimov, Ukraine

Introduction and Objective: The role of the different isoforms of nitric oxide synthase (NOS) during overactive bladder (OAB) development is highly complex, and incompletely understood. The purpose of this research is to study the distribution of NO-synthase isoforms in normal bladder and bladders after injection of Homviotensin and their possible involvement in the pathogenesis of OAB.

Materials and Methods: The experiments were performed on female rats following 0.45 mg/kg of reserpine (Homviotensin) treatment within two weeks for OAB modeling. Full-thickness bladder specimens were obtained from 60 rats with OAB and 10 controls. Immunohistochemistry was performed with a polyclonal antibody for endothelial (eNOS), neuronal (nNOS) and inducible (iNOS) nitric oxide synthase (Thermo Fisher Scientific) and staining intensity was assessed semiquantitatively on coded material by light microscopy. The results were expressed as the mean ± the standard error of mean. Differences were considered significant at p<0.05.

Results: In a control line rats the expression of iNOS was absent. In the group with OAB we revealed a significant increase in iNOS (more than 60 % of positively stained cells) expression compared with that in healthy rats. The distribution of iNOS was detected predominantly around smooth muscle cells (SMCs) of the middle and outer muscular layers of OAB and at the same time with severe cytoplasm vacuolization and focal hypertrophy of the SMCs. The expression of eNOS was moderate (30-60% of positively stained) in endothelial cells of vessels in normal bladder but in rats after Homviotensin injection the eNOS level substantially decreases. The same results were obtained with nNOS expression in the nitrigic neurons of the muscular layer with degenerative changes of neurons.

Conclusion: Based on our research data we can propose two mechanisms of OAB development that may be coexist with each other, the first is involving of iNOS in neuronal death and degenerative changes of smooth muscles as a result of reactive nitrogen species hyperproduction such as peroxynitrite and the second is an ischemic injury of a bladder wall due to decrease of eNOS. These findings may open the opportunity for therapy in the treatment of OAB.

MP-11.09
The Distribution of Different Collagen Types in a Rat Model of Overactive Bladder Before and After Treatment

Iatsyna O¹, Vernygorodskiy S², Savyska I³, Kostev F¹
¹Odessa National Medical University, Odessa, Ukraine; ²Vinnitsia National Pirogov Memorial Medical University, Vinnitsia, Ukraine; ³National Institute of Surgery and Transplantology named after A.A. Shalimov, Kiev, Ukraine

Introduction and Objective: Overactive bladder (OAB) is a common urological clinical problem, which mainly results from changes in collagen types I and III within the detrusor were responsible for

MP-11.06, Table 1. Multivariate Logistic Regression Analysis to Identify Association with IBS In Women

| | AOR* | 95% CI |
|-------------------------|------|-------------|
| OAB dry | 2.1 | 1.11 - 4.12 |
| Moderate to severe LUTS | 2.6 | 1.39 - 5.19 |

*Adjusted by age, anxiety and history of vaginal delivery.

vere LUTS were independently associated with IBS (Table 1).

Conclusion: LUTS/OAB are frequent in Colombian women; and IBS seems to be a significant co-morbid condition to these. Thus, IBS should be suspected and assessed in female patients presenting to the urologist's office. An association between LUTS/OAB and IBS was not detected in men.

MP-11.07
Publicly Funded Overactive Bladder Drug Treatment Patterns in Ontario over Fifteen Years: An Ecologic Study

Elterman D
University Health Network, Toronto, Canada

Introduction and Objective: Medication is an important option for patients with overactive bladder (OAB), with four different drugs approved over the last 10 years including the first non-anticholinergic treatment, mirabegron. We set out to describe the number

and rate of users of medication for the management of OAB over the last 15 years among residents of Ontario, Canada covered by the public drug programs.

Materials and Methods: We conducted a population-based, repeated cross-sectional study examining quarterly publically-funded prescription claims for OAB medications from January 2000 to June 2016 in Ontario, Canada.

Results: We report two major changes in prescription patterns for OAB. The first was the rise of newer, more selective anticholinergics (tolterodine, solifenacin, and darifenacin) replacing oxybutynin. This led to a 54.8% reduction in the rate of users of oxybutynin over the study period from 10.4 users/1,000 beneficiaries in 2000 to 4.7 users/1,000 beneficiaries in 2016. Recently we saw the emergence of mirabegron as the most commonly prescribed treatment for OAB. By the final quarter of the observation period mirabegron was the most commonly used OAB treatment with 25.0% (n=19,411) of all OAB medication users in Ontario (n=77,660).

Conclusion: Our findings highlight the rapid uptake of novel agents and a major shift in the treatment of OAB over the last 3 years.

MP-11.08
Morphological Assessment of the Nitric Oxide Synthase Distribution in a New Rat Model of Overactive Bladder

Iatsyna O¹, Vernygorodskiy S², Savyska I³, Kostev F¹

bladder compliance. There is a paucity of information about the mechanical properties of connective tissue and how these properties can change as a function of OAB. That is why the purpose of our research was to assess the different types of collagen distribution in the OAB before and after treatment.

Materials and Methods: The experiments were performed on female rats following 0.45 mg/kg of Reserpine, (Homviotensin) treatment (group H) within 2 weeks for OAB modeling. Full-thickness bladder specimens were obtained from 60 rats with OAB and 10 controls. Following 14 and 28 days of OAB the vesical tissues were evaluated by immunohistochemistry using specific monoclonal antibodies (Thermo Fisher Scientific) for collagen types I and III before and after treatment by Mirabegron (M), Astellas Pharma Inc. - 8 mg, Spasmex 0,4 mg (Dr.R.PflegerGmbH) and Quertin (Q), 10 mg, (Quercetin, Borshchahivskiy CPP) without or with combination with Testosterone (T), 1mg, (Pharmak) and Divigel (D), 0,2 mg, (Estradiol, Orion Corporation). The results were expressed as the mean \pm the standard error of mean. Differences were considered significant at $p < 0.05$.

Results: There is up regulation of collagen types I (CI), and III (CIII) expression after 14 and 28 days. The collagen area percentage (CI and CIII) in each bladder after 14 days, calculated through image analysis, was $20,9 \pm 0,82\%$ and $12,1 \pm 0,48\%$ in the H, $17,7 \pm 1,02\%$ and $10,5 \pm 0,61\%$ in the HM, $20,5 \pm 0,68\%$ and $12,5 \pm 0,5\%$ in the HS, $17,8 \pm 0,67\%$ and $10,9 \pm 0,43\%$ in the HQ, $17,1 \pm 0,62\%$ and $7,4 \pm 0,4\%$ in the HMTD, $18,1 \pm 0,73\%$ and $10,4 \pm 0,56\%$ in the HSTD, $17,4 \pm 0,6$ and $9,6 \pm 0,56$ in the HQTd; after 28 days: $27,4 \pm 1,88\%$ and $13,2 \pm 0,38\%$ in the H, $22 \pm 0,71$ and $9 \pm 1,04$ in the HM, $25 \pm 1,13\%$ and $11,1 \pm 0,38\%$ in the HS, $20 \pm 0,61$ and $7,8 \pm 0,32\%$ in the HQ, $18,5 \pm 0,52\%$ and $8,3 \pm 0,3\%$ in the HMTD, $21,5 \pm 1,01\%$ and $10,2 \pm 0,46\%$ in the HSTD, $16,8 \pm 0,46\%$ and $6,4 \pm 0,3\%$ in the HQTd (mean \pm standard error). The difference in the collagen area percentage between the H and S, H and HSTD groups ($P > 0.05$) was not significant, but there were significant differences between the H and HMTD, H and HQTd groups ($P < 0.001$).

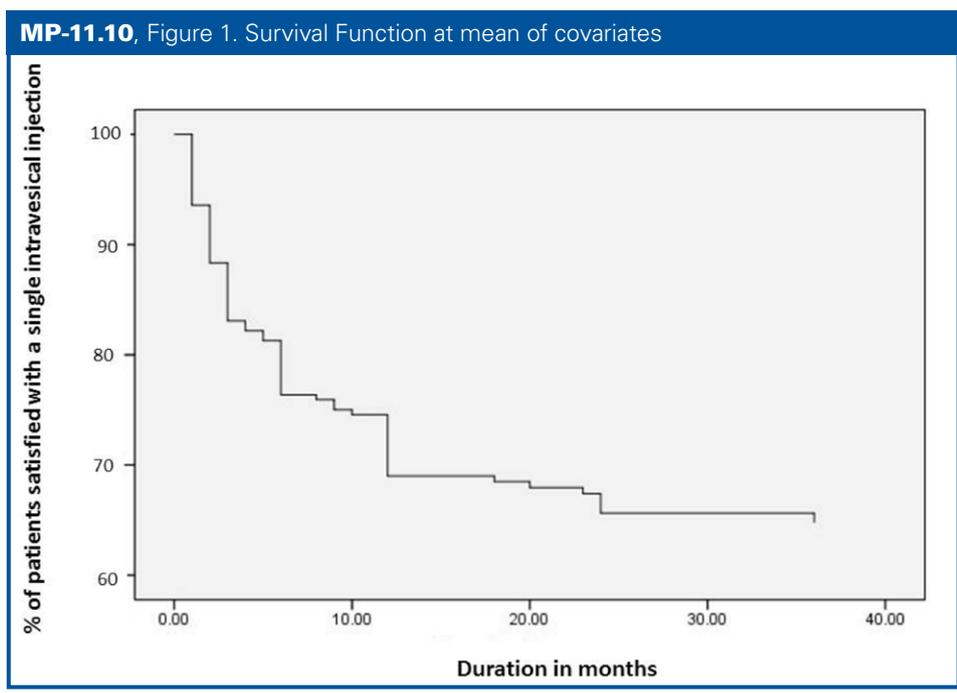
Conclusion: Changes of the ratio of these two collagen types with a shift towards the dominance of type I collagen after 28 days has a profound impact on mechanical properties of connective tissue of the bladder. This work suggests that a change in localization and quantity of different collagen types leads to alterations of bladder muscular layer, which can impair detrusor contractility. It should be noted that the most significant results in the treatment of OAB were obtained after using of flavonoid Quercetin in combination with hormones (HQTd). The study outcomes will help in future to better understand functional aspects and work up a new strategy of OAB treatment.

MP-11.10

Long Term Results of Intravesical Abobotulinum Toxin an Injection in Patients with Detrusor Overactivity

Bagheri A¹, Rahnama'i S², Mostafaei H¹, Hajebrahimi S¹

¹Research Center of Evidence Based Medicine, Safety and Health Promotion Institute, Tabriz University of



Medical Sciences, Tabriz, Iran; ²Maastricht University, Maastricht, The Netherlands

Introduction and Objective: Intravesical Botox injection is recommended in majority of the guidelines as second line intervention for patients with overactive bladder syndrome. Despite the robust evidences on efficacy of this treatment, there are limited studies available on the long-term effectiveness of the intravesical abobotulinum toxin A injection. The aim of this study was to evaluate the long-term efficacy of abobotulinum toxin A injection in a single teaching hospital.

Material and Methods: For this study all patients who underwent intravesical abobotulinum toxin A injection between 2011 and 2012 in our hospital were contacted. At our clinic, patients with OAB and urodynamically proven detrusor overactivity (DO) who had failed first line antimuscarinic therapy, underwent intramuscular injections with 500-900 unites of abobotulinum toxin A, divided in 30-35 injections in the bladder wall. We identified 530 patients with urodynamically proven DO who had undergone a single intravesical abobotulinum toxin A injection in 2011 and 2012 as described above. From this cohort, 387 patients were reached and gave consent for our study. These patients were contacted 5 years after their initial injection and interviewed on the phone.

Results: In our study population of 387 patients (age 18-82 years, 295 females and 92 males), 77 out of 387 patients had neurogenic DO. The remaining patients had idiopathic DO. Our telephone interview revealed that 45,3% of the patients had either complete resolution of their symptoms for a long period of time or had significant reduction of their symptoms to a level that could be managed with oral antimuscarinic therapy. The mean duration of symptom improvement was 26,3 months. The success rates of the treatment reduced in time as shown in the ROC curve. However, still about half of our patients were happy with their initial intravesical abobotulinum toxin A injection.

Conclusion: Our retrospective study results show that in a sub-population of OAB patients with DO who have failed first line therapy, a single injection with intravesical abobotulinum toxin A injection can resolve patient symptoms either completely or reduce the symptoms to an acceptable level that can be controlled with antimuscarinics. In patients with OAB and proven DO, intravesical abobotulinum toxin A injection can have significant reduction of symptoms in about 45 % of patients with a medium duration of 26,3 months.

MP-11.11

Concomitant Transurethral and Transvaginal-Periurethral Injection of Autologous Adipose Derived Stem Cells for Treatment of Female Stress Urinary Incontinence: A Phase One Clinical Trial

Pourmand G¹, Arjmand B², Safavi M³, Heidari R³, Aghayan H², T. Bazargani S⁴, Dehghani S⁴, Goodarzi P³, Mohammadi-Jahani F³, Heidari F⁴, Payab M⁵

¹Urology Research Center, Tehran University of Medical Sciences, Tehran, Iran; ²Cell Therapy and Regenerative Medicine Research Center, Endocrinology and Metabolism Molecular-Cellular Sciences Institute, Tehran University of Medical Sciences, Tehran, Iran; ³Brain and Spinal Cord Injury Research Center, Tehran University of Medical Sciences, Tehran, Iran; ⁴Urology Research Center, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran; ⁵Obesity and Eating Habits Research Center, Endocrinology and Metabolism Molecular-Cellular Sciences Institute, Tehran University of Medical Sciences, Tehran, Iran

Introduction and Objective: Stress urinary incontinence is a common medical problem among women. The urethral closure complex and/or the supportive mechanisms are responsible for incontinence in the majority of patients. Several surgical procedures with different degrees of invasiveness and outcomes have been reported to treat the problem. Although most of these procedures are reasonably effective, a general