images quality-i.e. enhances contrast and depth resolution in polarization imaging using circularly polarized light. Cancerous outgrowths are seemed as the dark areas on the bright background in a NIR transillumiantion images. Results of infrared and histomorphological investigations, concerning the cancer location, were compared. The comparisons show the coincidence of both findings in all cases.
**Conclusions:** Method of circularly polarized IR light might be used in future for prostate cancer visualization and diagnosis *in vivo*.

## GUA-11 Alarmins may have significant action during interstitial cystitis/bladder pain syndrome

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**Objectives:** Mast cells are a major cellular target of various alarmins, including interleukin-33 (IL-33), high mobility group box 1 protein (HMGB1), advanced glycation end products, galectins and others. These molecules are important as initiators and effectors of innate immunity and may turn out to be a critical activator of mast cells during innate immune response to pathogens. However, the precise mechanism of participation of alarmins in IC/BPS pathogenesis is unknown. Taking into account that epithelial dysfunction and mast cell activation play central role in the genesis of IC/BPS, we hypothesizes that IL-33, advanced glycation end products (AGE),and galectin-3 (Gal-3) can participated in pathogenesis of IC/BPS and thus, their analysis in urine of IC/BPS patients may be informative to assess the severity of the disease. The goal of present studies is to elucidate the participation of IL-33, AGEand Gal-3 in the pathogenesis of IC/BPC. To clarify this issue, we determine urine IL-33, AGE and Gal-3 in the patients with active IC/BPS.
**Methods:** Forty-three women with IC/BPS and 29 women as normal controls were enrolled in this study. Patients with IC/BPS had characteristic symptoms. All patients were investigated thoroughly and were excluded if they did not meet the criteria of the National Institute of D D K D. Control subjects included those who were free any urogenital disease. Patients with previous bladder or urethral surgery, or a postvoid residual urine volume of >50 mL were excluded.
Voided urine was placed on ice immediately and transferred to the laboratory for preparation for IL-33, Gal-3 and AGE measurement. The urine samples were centrifuged at 3000 *g* for 10 min at 4°C. The supernatant was separated into aliquots in 1.5 mL tubes and preserved in a freezer at −80°C.
All samples were run in triplicate, and urinary IL-33 and Gal-3 levels without a consistent value in three measures were repeated and the values were averaged. The criterion for defining consistent values was that the coefficient of variation (SD/mean) of the three absorbance values was <0.10. The total urinary alarmin levels were further normalized by the concentration of urinary creatinine (mg/dL), and the ratio of alarmin/Cr was used as a normalized urinary IL-33 and Gal-3 levels. Urinary IL-33/Cr and Gal-3/Crlevels were compared among control and patients with IC/BPS subgroups using one-way ANOVA test. The correlation between biomarkers was calculated using Pearson's correlation coefficient; in all tests $P < 0.05$ was considered to indicate statistical significance.
**Results:** We have found that urine fluorescence was higher in IC/BPS patientsthan in control by approximately 140%. These findings indicate that complex changes in the levels of urine alarmins (IL-33, galectin-3, AGE) are associated with IC/BPC.
**Conclusions:** Current evidence from clinical and laboratory studies confirms that mast cells play a central role in the pathogenesis and pathophysiology of IC/BPS, alarmins are secreted in the urine during IC/BPC and may have either pro-inflammatory or reparative actions.

## GUA-12 IL-33 and Gal-3 significantly increases in IC/BPS

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**Introduction and objective:** Interstitial cystitis/bladder pain syndrome (IC/BPS) is an enigmatic chronic disorder characterized by vague bladder pain of variable severity accompanied by urinary symptoms. The pathogenesis and etiology of IC/BPS remain incompletely defined. However, there is an emerging consensus about the central role of epithelial dysfunction, bladder sensory nerve up-regulation, and mast cell activation in the genesis of IC/BPS. Accumulating evidences have suggested that tissue damage is recognized at the cell level via receptor-mediated detection of intracellular proteins released by the dead cells. Among these proteins IL-33, galectin-3 (Gal-3) may have an important role because they can be participated as cellular components that stimulate the immune system. When they leave their usual intracellular location during either cell activation or cell death.
**Materials and methods:** We measured IL-33, Gal-3, and AGE in 24-hour urine specimens from patients with IC/BPS and healthy subjects. Study participants included 24 female patients with IC and 18 age-matched female volunteers. ELISAs were used to determine levels of IL-33 and galectin-3.
Women with IC/BPS and 29 female volunteers. Urinary IL-33, EGF and Gal-3 levels were measured using an enzyme-linked immunosorbent assay, whereas the content of AGE was quantified by natural AGE-specific fluorescence (Ex. 370 nm, Em. 440 nm). Urinary IL-33, and Gal-3 levels were normalized by urinary creatinine (Cr) levels and compared among subgroups.
**Results:** We have found that the levels of IL-33 and Gal-3 were significantly increased in IC/BPS. The level of the IL-33 in the urine of healthy women was equal to 5.083 ± 0.041 pg/ml, while the level of IL-33 in IC/BPS patients increases up to 7.21 ± 0.063 pg/ml ($p < 0.05$). Further, the amounts of urine Gal-3 were also elevated in IC/BPS compared to healthy subjects (20.8 ± 3.4 ng/ml- healthy subjects; 30.24 ± 3.4 ng/ml patients with IC).
**Conclusions:** These data suggest on the participation of IL-33, Gal-3 and AGE in the pathogenesis of IC/BPS.

## GUA-13 Comparative analysis of corpoplasty with buccal mucosa graft and tunica vaginalis in Peyronie's disease

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**Objective:** Extensive evaluation of long-term results and patient satisfaction was performed after application of buccal mucosa graft and tunica vaginalis for replacement of fibrotically affected tunica albuginea of the penis during progressive course of Peyronie's disease.
**Materials and methods:** The investigation involves analysis of results of corporoplasty performed on 17 patients. As an autograft, tunica vaginalis was used for 10 (58.8%) patients and 7 (41.2%) patients were given buccal mucosa graft. The average age of patients was 44.25 ± 11.88 years. All patients underwent surgery promptly, there were no intraoperative complications. The nearest postoperative period proceeded smoothly. The results were evaluated in a period of 3 months, 6 months and 12 months later.
**Results:** As a result, a comparative analysis of the obtained results and the use of different types of autologous materials for corporoplasty revealed the advantage of the buccal graft. In terms of the parameters, the angles of curvature of the penis after 12 months of observation

were 12.7 ± 6.11° and 7.43 ± 3.82° for 1A and 1B subgroups respectively ( p-value <0.040). As regards the parameters of the erectile function of patients according to the IIEF-5 questionnaire, 12 months of follow-up conducted after the operation resulted in 20.4 ± 2.82 and 22.2 ± 2.44 for groups 1A and 1B subgroups respectively ( p > 0.352). Reduction of the average ICEF score in 1A subgroup can be associated with the rejection of combined surgical intervention. When comparing the duration of an operation, a statistically significant difference was obtained, which are 211.0 ± 15.2 for 1A subgroup and 194.4 ± 18.1 for subgroup 1B with p-value <0.05.

**Conclusion:** Overall, a comparative analysis and discussion of the performed corporoplasty using the tunica vaginalis and buccal mucosa graft showed the slight advantage of the buccal mucosa graft with prolonged surgical intervention. With the use of the tunica vaginalis and buccal mucosa graft, a significant reduction in the angle of curvature was achieved, and the erectile status of the patients was improved, which remained stable in the long-term period 12 months later.

## GUA-14 Experience of extracorporeal shock-wave lithotripsy (ESWL) in the treatment of urolithiasis in Kyrgyzstan

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**Background:** Extracorporeal shock wave lithotripsy (ESWL) is an effective, well-established method for treatment of renal stones. Rapid acceptance and widespread use of this technique have made this form of stone therapy the first choice of therapy for more than 80% of all patients with urolithiasis. We present the initial experience with ESWL on the 6th generation lithotripter (Modulith SLK intelect) with the electromagnetic principle of shock wave generation in the treatment of urinary tract stones.

**Methods:** A prospective study was conducted among 113 patients who underwent ESWL at the multi-profile medical center “EOS” between January and May 2019 for urolithiasis treatment.

**Results:** There were 124 treatments performed on 113 patients. The main indicators as a number, sex of patients, clinical forms of urolithiasis and the number, type of ESWL are presented in table 1.

**Table 1**
Indicators of the number, sex of patients, clinical forms of urolithiasis and the sessions type of ESWL

| Indicators | Number (%) | Indicators | Number (%) |
|---|---|---|---|
| Number of patients | n = 113 | ESWL sessions | 124 |
| Age | 44 ± 12.5 | | |
| Women | 24 (21.2%) | Nephrolitotripsy | 29 (23.4%) |
| Men | 89 (78.8%) | Calicolithotripsy | 14 (48.3%) |
| Urolithiasis clinical features: | | Pyelolithotripsy | 15 (51.7%) |
| Renal calculi: | 26 (23.0%) | | |
| Renal calculi | 12 (46.2%) | | |
| Ureteropelvic segment | 14 (53.8%) | Ureterolitotripsy | 95 (76.6%) |
| Size of calculi | | Upper | 32 (33.7%) |
| ≤10 mm | 9 (34.6%) | Middle | 13 (13.7%) |
| 10–15 mm | 16 (61.5%) | Lower | 50 (52.6%) |
| 15–20 mm. | 1 (3.8%) | | |
| | | Duration of treatment: | 45 ± 9.9 min |
| Ureteral calculi: | 87 (77.0%) | Min duration | 10′ |
| Upper | 29 (33.3%) | Max duration | 65′ |
| Middle | 11 (12.6%) | | |
| Lower | 47(54.02%) | | |
| Size of calculi | | | |
| ≤10 mm | 76 (87.4%) | | |
| 10–15 mm | 11 (12.6%) | | |

As a result of the treatment were observed: complete destruction or stone free (71%), complete destruction with fragments discharge during the day (19%), partial destruction (48%) and partial destruction with fragments discharge during the day (19%). After the seven days follow-up 81% of patients showed complete discharge and 19% showed partial discharge. 2 patients underwent URS with laser crushing due to high density of the stone. There were 7 (6.2%) complications as an exacerbation of pyelonephritis after ESWL which was treated with stenting and adequate antibiotic therapy.

**Conclusions:** ESWL well tolerated and highly effective for the treatment of urolithiasis. The advantages of lithotripsy include, low incidence of complication, technical ease and high level of patient acceptance.

## GUA-15 Combination treatment with low intensity extracorporeal shock waves and PDE5 inhibitors for vasculogenic erectile dysfunction: a comparative study

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**Background:** Erectile dysfunction (ED) is common in all age groups. Primary treatment with PDE5 is recommended; however, a significant number of men do not respond. Li-ESWT has shown promise as an alternative treatment, but its role remains unclear. We compared the therapeutic effects of both single-modality and combination treatment using Li-ESWT and Vardenafil in patients with mild and moderate stages of ED.

**Methods:** One hundred and nine men with vasculogenic ED were distributed into 4 groups and received different types of treatment (Table 1). Li-ESWT with Duolith SD1 Ultra was delivered over 6 sessions using 3000 shocks with energy density ranging from 0.10 to 0.30 mJ/mm$^2$. Frequency was 4.0 Hz. Penile blood flow velocity (PBFV), IIEF-5, EHS scores were measured at baseline (before procedures – BP) immediately after treatment termination (IATT), at 6th months (6mosAT) and 9th months (9mosAT) after treatment. Mixed Design ANOVA was conducted to compare treatment type (Table 1) effects on IIEF-5, EHS and PBFV results across different time points – BP, IATT, 6mosAT and 9mosAT (IBM SPSS Statistics, ver. 23.0).

**Results:** The statistically significant main effects of Treatment Type, Treatment Time and their interaction were revealed for IIEF-5 ($F(6.5.227.5) = 140.351$; $P < 0.001$; $\eta^2 = .80$), EHS ($F(7.89.276.04) = 33.99$; $P < 0.001$; $\eta^2 = .50$) and PBFVs ($F(5.96,208.28) = 89.14$; $P < 0.001$; $\eta^2 = .71$). Following up this interaction indicate that treatment type really does have statistically significant effect on IIEF-5, EHS and PBFVat different time points. The interaction results show that there are no significant differences in IIEF-5 and EHS scores and PBFV measurements between treatment groups at BP point, but single-modality treatment (*Li-ESWT only*) or it’s combination *(Li-ESWT with PDE5)* improve IIEF-5, EHS and PBFVover treatment time and reveals maximum and stable efficiency after 6 months. The therapeutic effects of single-modal PDE5 treatments are revealed at IATT time point for IIEF-5 and EHS scores only, which decrease to baseline level after 3-month therapy. During the whole single-modal PDE5 therapy PBFV value remained unchanged.