

**P036** Autological fat stromal-vascular fraction injection for the treatment of stress urinary incontinence in men who underwent radical prostatectomy

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**Introduction & Objectives:** Stress urinary incontinence (SUI) after radical prostatectomy is a major problem that affects 9-16% of patients. Post-prostatectomy incontinence results from surgical damage to the urethral sphincter as well as to surrounding nerves and supportive tissue. Treatment of urinary incontinence can be conservative including drug therapy, behavioral therapy, physiotherapy, pelvic floor exercises, surgical including sling operations, or periurethral injection therapy with bulking agents. Whereas more invasive approaches like sling operations are more effective but have higher morbidity, while the injection of allogeneic bulking agents is minimally invasive but has poor long-term efficacy. Some studies showed the autologous stromal vascular fraction (SVF) from adipose tissue exhibited promising long-term efficacy.

**Materials & Methods:** Here we report our experience of SVF transplantation into the periurethral region as a new method of stress urinary incontinence treatment. Seventeen patients with symptoms of stress urinary incontinence (grade 1-2) after radical prostatectomy were treated by injections of SVF into the bladder sphincter. The first stage is tumescent lipoaspiration. After this, the stromal-vascular fraction is separated using special double syringes and centrifugation. After excretion of SVF, transurethral introduction to the zone of the external sphincter of the bladder is performed. Part of the SVF is sent to the laboratory for further study of the cellular composition using flow cytometry. Successful differentiation of the obtained cells into bone, muscle, cartilage tissue demonstrates the presence of multi-potent mesenchymal stem cells.

**Results:** Our study showed that injection of the SVF into the bladder sphincter area is a safe treatment option for SUI. The effectiveness of the method was 50% according to the results of the Pad test, ISIQ-SF and QoL. In the group with a positive effect, the Pad test value decreased on average from 2-3 to 0-1, the score on the ISIQ-SF questionnaire from 7-11 to 1-4 and the QoL test from 4-6 to 1-2.

**Conclusions:** Further studies will develop new therapeutic strategies with finding the optimal dosage, the number and localization of injections are needed to improve its long-term efficacy.