Treatment of female urinary incontinence

Surgical techniques
- **Colposuspension techniques:**
  - Transvaginal.
    - Modified Raz technique.
    - IN-FAST® anchored to the pubis intravaginally with *titanium* screws.
    - VESICA anchored to the pubis intra-abdominally with screws.
  - Laparoscopic. Suspension of *Polypropylene* mesh (PROLENE®).
- **Repairing the rectocele/enterocele:**
  - Posterior colporineorrhaphy.
  - Mesh anchoring techniques: posterior PROLIFT®, APOGEE®, posterior ELEVATE®.
- **Repairing a severe cystocele:**
  - Anterior colporineorrhaphy (modified Marion-Kelly method). Limited efficacy.
  - Repair with *Polypropylene* mesh: anterior PROLIFT®, PERIGEE®, ELEVATE®.
- **Urethral support techniques.**
  - Sling procedures using *Polypropylene* vaginal tapes.
    - Conventional techniques with *fascia lata* or rectus fascia.
    - TVT®or IVS*: *Polypropylene* tapes passed to the hypogastrium with two needles.
    - REMEE®: with variotensor that permits changes to the thread tension.
    - TOT*: suburethral tape anchored to the obturator foramen (*outside-in insertion*).
    - TVT-O*: suburethral tape anchored to the obturator foramen (*outside-in insertion*).
    - TVA/TOA*: adjustable mesh with *Polypropylene* suture traction.
    - MINIARC®, TVT-SECUR*: suburethral mini-slings internally anchored to obturator.
- **Urethral compression techniques.** (More indicated in intrinsic sphincter deficiency.)
  - Submucosal injection of bulking agents:
    - *Dextranomer + Hyaluronic acid* (DEFLUX®).
    - *Fat*: biocompatible, does not migrate, but 80% is reabsorbed.
    - *Collagen* (CONTIGE®, PERMACOL®): biocompatible, does not migrate; expensive.
    - *Silicone* (MACROPLASTIQUE®): can migrate; expensive.
    - *Elastomere balloons*: do not migrate; biocompatible.
  - Artificial sphincter: AMS 800®.

Other non-pharmacological therapies
- **Mechanical urethral compression techniques**, non-surgical: not very useful.
  - Compression mechanisms: vaginal pessaries in cases of associated prolapse.
  - Polyurethane foam (CONVEEN CONTINENCE GUARD®).
  - Silicone elastomere (INTROL®).
- **Intraurethral occlusive devices.** Act as stoppers. Not very useful.
  - *Silicone device* (FEMASSIST®) *top-hat* shaped.
  - *Silicone device* (CAPSURE®).
  - *Microballoon stopper* (STASKIN®).
- **Absorbent devices.** Adult diapers sometimes represent the only treatment possibility. Prescriptions should include the brand name, model, size, and number of units (usually 80). *(See chapter on Incontinence Devices).*
- **Pelvic floor rehabilitation techniques:**
  - *Kegel* exercises.
  - Functional electrostimulation.
  - Weighted vaginal cones (LADYSYSTEM®) or weighted intravaginal balls.
  - *Bio-feedback.*
Pharmacotherapy

• **Antimuscarinics**: not ideal given that they all possess similar efficacy with similar adverse effects; treatment must thus be individualized. Level 1 evidence and grade A recommendation for overactive bladder/detrusor.

<table>
<thead>
<tr>
<th>Generic name</th>
<th>Trade name®</th>
<th>Dose</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Tolterodine</td>
<td>DETRUSITOL</td>
<td>1 caps of 2-4 mg/d</td>
<td>Tailored</td>
</tr>
<tr>
<td>Trospium</td>
<td>URAPLEX, SANCTURA,</td>
<td>1 tab of 20 mg/12 h</td>
<td>Tailored</td>
</tr>
<tr>
<td>Solifenacine</td>
<td>VESICARE</td>
<td>1 tab of 5-10 mg/d</td>
<td>Tailored</td>
</tr>
<tr>
<td>Fesoterodine</td>
<td>TOVIAZ</td>
<td>1 tab of 4-8 mg/d</td>
<td>Tailored</td>
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• **Anticholinergic spasmolytics**: mixed action drugs. Level 1 evidence and grade A recommendation for hyperactive bladder/detrusor.

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<tbody>
<tr>
<td>Oxybutynin</td>
<td>DITROPA</td>
<td>1 tab of 5 mg/8 h</td>
<td>Tailored</td>
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• **Hormones**: their main indication is nocturnal polyuria. Require monitoring, especially in the elderly due to the risk of hyponatremia, more pronounced with intranasal administration. Level 1 evidence and grade A recommendation.

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<tr>
<td>Desmopressin</td>
<td>MINIRIN, DESMOPRESSIN</td>
<td>1 tab of 0.2 mg/d</td>
<td>Tailored</td>
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• **Toxins**: their main indication is intravesical injection in cases of neurogenic hyperactive detrusor. Level 2 evidence and grade A recommendation. Capsaicin and Resiniferatoxin are not yet approved in some European countries.

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<tbody>
<tr>
<td>Botulinum toxin</td>
<td>BOTOX</td>
<td>1 inj of 100-200 U</td>
<td>Tailored</td>
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• **Antidepressants**: act through inhibition of amine reuptake. They have level 1 evidence and a grade A recommendation for improving (not curing) stress incontinence when used in conjunction with pelvic floor rehabilitation techniques. Imipramin decreases contractility and increases capacity with level 3 evidence and grade C recommendation.

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<tr>
<td>Duloxetine</td>
<td>XERISTAR, CYMBALTA</td>
<td>1 caps 30-60 mg/12 h</td>
<td>Tailored</td>
</tr>
<tr>
<td>Imipramine</td>
<td>TOFRANIL</td>
<td>1 tab of 25-50 mg/d</td>
<td>Tailored</td>
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• **Estrogens**: intravaginal use improves stress incontinence in postmenopausal women with level 1 evidence and grade A recommendation. In contrast, systemic use has been shown to bring on or worsen incontinence.

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<tr>
<td>Promestriene</td>
<td>COLPOTROPHINE</td>
<td>1 vaginal caps of 10 mg/d</td>
<td>20 d</td>
</tr>
<tr>
<td>Estriol</td>
<td>OVESTIN</td>
<td>1 vaginal tab of 0.5 mg /d</td>
<td>2-3 wks*</td>
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*After the initial treatment: 1 vaginal tablet every 2-3 nights.

• **Cyclo-oxigenase inhibitors**: with level 2 evidence and grade C recommendation.

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<tbody>
<tr>
<td>Indomethacin*</td>
<td>INDOCID</td>
<td>1 caps of 75 mg/d</td>
<td>Tailored</td>
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<tr>
<td>Flurbiprofen</td>
<td>FROBEN</td>
<td>1 caps of 200 mg/d</td>
<td>Tailored</td>
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*Limited use due to gastrointestinal toxicity.
Female urinary incontinence

Stress, urge or mixed female urinary incontinence

- **Examination:** urogynecologic with pelvic floor assessment, neurourologic
- **Incontinence assessment** (cough test)
- **Severity of UI** (voiding diary, questionnaires)
- **Postvoid residual urine measurement** (with ultrasounds)

**Stress UI**
- **Diet:** ↓ weight, ↓ liquid intake and caffeine
- **Pelvic floor rehabilitation**
- **Electric stimulation**
- **Bladder training** (in urge UI)
  - **Tolterodine** 4 mg/d (in urge UI)
  - **Solifenacine** 5-10 mg/d (in urge UI)
  - **Fesoterodine** 4-8 mg/12 h (in urge UI)
  - **Trospium** 20 mg/12 h (in urge UI)
  - **Duloxetine** 30-60 mg/12 h (in stress UI)

**Mixed UI**

**Detrusor hyperactivity**

**UI and voiding dysfunction**
- **Infravesical obstruction**
- **Infection Fistula Tumor**
- **Surgery**
- **Hyypoactive detrusor**

**Persistance of stress UI**
- Tension-free mesh
- Colposuspension
- Urinary sphincter
- Bulking agents

**Persistance of urge UI**
- Neuromodulation
- Botulinum toxin
- Bladder augmentation

**Clean intermittent catheterization**

**Specific treatment**

**Recurrent SUI or complicated with**
- Pain
- Infection
- Hematuria
- Surgery or RT
- Genital prolapse

**Cystoscopy Cytology CT, IVU**