Guidelines on Urinary Incontinence

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. INTRODUCTION</td>
<td>3</td>
</tr>
<tr>
<td>2. DIAGNOSIS</td>
<td>3</td>
</tr>
<tr>
<td>3. MANAGEMENT</td>
<td>5</td>
</tr>
<tr>
<td>3.1 Management of urinary incontinence in women</td>
<td>5</td>
</tr>
<tr>
<td>3.2 Management of urinary incontinence in men</td>
<td>7</td>
</tr>
<tr>
<td>3.3 Management of neurogenic urinary incontinence</td>
<td>8</td>
</tr>
<tr>
<td>3.4 Management of urinary incontinence in frail/disabled older people</td>
<td>10</td>
</tr>
<tr>
<td>3.5 Management of urinary incontinence in children</td>
<td>11</td>
</tr>
<tr>
<td>4. CONCLUSION</td>
<td>12</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

The condition of urinary incontinence is far more prevalent in women than men with a significant progress in incidence with the increase of age.

2. DIAGNOSIS

The first contact a patient has with healthcare providers should always focus on basic diagnostic tests, a physical examination and careful assessment of the patient's history, since this approach is always readily available.

If an accurate diagnosis of the disease requires further investigation (e.g. complex situations, such as neuropathic bladder), or if the initial treatment has failed, specialized diagnostics and sub-specific treatment options may become necessary.

For practical reasons, the guidelines presented here have been split up according to the target sub-populations (women, men, patients with neuropathic bladders and elderly patients and children). Each management algorithm is constructed chronologically and comprises the following features:

1. Assessment of the patient's history and symptoms
2. Clinical assessment of symptoms and disorders
3. Determination of condition and underlying pathophysiology
4. Therapeutic options, split into initial treatment and specialized therapy.

For comparability and research reasons, questionnaires on symptom scores and quality of life should be standardized. The validated ICIQ-SF questionnaire, developed by the International Consultation on Incontinence, represents a good compromise between scientific expectations and practicability and is therefore recommended for the investigation of urinary incontinence.
Many people leak urine some of the time. We are trying to find out how many people leak urine, and how much this bothers them. We would be grateful if you could answer the following questions, thinking about how you have been, on average, over the PAST FOUR WEEKS.

1. Please write in your date of birth: DAY MONTH YEAR

2. Are you (tick one): Female Male

3. How often do you leak urine? (Tick one box)
   - never 0
   - about once a week or less often 1
   - two or three times a week 2
   - about once a day 3
   - several times a day 4
   - all the time 5

4. We would like to know how much urine you think leaks.
   How much urine do you usually leak (whether you wear protection or not)? (Tick one box)
   - none 0
   - a small amount 2
   - a moderate amount 4
   - a large amount 6

5. Overall, how much does leaking urine interfere with your everyday life?
   Please ring a number between 0 (not at all) and 10 (a great deal)
   0 1 2 3 4 5 6 7 8 9 10
   not at all a great deal

ICIQ score: sum scores 3+4+5

6. When does urine leak? (Please tick all that apply to you)
   - never – urine does not leak
   - leaks before you can get to the toilet
   - leaks when you cough or sneeze
   - leaks when you are asleep
   - leaks when you are physically active/exercising
   - leaks when you have finished urinating and are dressed
   - leaks for no obvious reason
   - leaks all the time

Thank you very much for answering these questions.

Figure 1. ECIQ-SF questionnaire
3. MANAGEMENT

3.1 Management of urinary incontinence in women

The introduction of the balanced serotonin and norepinephrine reuptake inhibitor duloxetine has enriched the conservative armamentarium of incontinence treatment in women. Its usefulness is especially promising if combined with pelvic floor exercises.

In patients with mixed incontinence, the predominant condition should be treated first.

Specialized management is necessary in women with complex history whose PVR exceeds 10% of the bladder capacity. Additionally, patients with significant pelvic organ prolapse and/or failed initial therapy should be referred to specialists promptly.

### Initial Management of Urinary Incontinence in Women

<table>
<thead>
<tr>
<th>HISTORY/SYMPTOM ASSESSMENT</th>
<th>Incontinence on Physical Activity</th>
<th>Incontinence with Mixed Symptoms</th>
<th>Incontinence with Urgency / Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLINICAL ASSESSMENT</strong></td>
<td>General assessment</td>
<td>Urinary diary and symptom score</td>
<td>Assess quality of life and desire for treatment</td>
</tr>
<tr>
<td>(Primary Care Physician/ Specialist)</td>
<td>Physical examination: abdominal, pelvic, sacral neurological &amp; estrogen status -&gt; if atrophic, treat and reassess</td>
<td>Attempt to demonstrate incontinence when coughing (stress test)</td>
<td>Urinalysis ± urine culture -&gt; if infected, treat and reassess</td>
</tr>
<tr>
<td></td>
<td>Assess PVR: physical exam. / catheterization / ultrasound</td>
<td></td>
<td></td>
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</tbody>
</table>

**PRESUMED CONDITION**

- Stress Incontinence
- Mixed Incontinence
- Ure Incontinence

**TREATMENT**

- Lifestyle interventions
  - Pelvic floor muscle training
  - Duloxetine
- Other physical therapy adjuncts
- Devices
- Failure

**SPECIALIZED MANAGEMENT**

- Complex history, e.g.:
  - Recurrent incontinence
  - Incontinence associated with:
    - Pain
    - Hematuria
    - Recurrent infection
    - Voiding symptoms
    - Pelvic irradiation
    - Radical pelvic surgery
    - Suspected fistula

- Significant PVR
- Significant pelvic organ prolapse

Figure 2. Initial management of urinary incontinence in women
Only through cystometry one can differentiate between motor urge (overactive detrusor) and sensor urge (bladder hypersensitivity) in patients with symptoms suggestive of urge incontinence.

Recent studies have demonstrated promising results for botulinum toxin A detrusor injections in the treatment of urge incontinence. Since botulinum toxin is not approved for this indication treatment should be restricted to specialized centres only.
3.2 Management of urinary incontinence in men

**Initial Management of Urinary Incontinence in Men**

- **HISTORY/SYMPTOM ASSESSMENT**
  - Post-micturition dribble
  - Post-Prostatectomy incontinence
  - Incontinence with Urgency / Frequency

- **CLINICAL ASSESSMENT**
  - General assessment
  - Urinary diary and symptom score
  - Assess quality of life and desire for treatment
  - Physical examination: abdominal, rectal, sacral neurological
  - Urinalysis ± urine culture -> if infected, treat and reassess
  - Assess PVR: physical exam. / catheterization / ultrasound

- **PRESUMED CONDITION**
  - Stress incontinence
  - Mixed incontinence
  - Urge incontinence

- **TREATMENT**
  - Urethral milking
  - Pelvic floor muscle training
  - Lifestyle interventions
  - Pelvic floor muscle training
  - Bladder retraining
  - Other physical therapy adjuncts
  - External appliances
  - Antimuscarinics

- **Complex history, e.g.:**
  - Recurrent incontinence
  - Incontinence associated with:
    - Pain
    - Hematuria
    - Recurrent infection
    - Voiding symptoms
    - Prostate irritation
    - Radical pelvic surgery

- **SPECIALIZED MANAGEMENT**
  - Significant PVR

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**Specialized Management of Urinary Incontinence in Men**

- **HISTORY/SYMPTOM ASSESSMENT**
  - Incontinence on Physical Activity
  - Incontinence with Urgency/Frequency

- **CLINICAL ASSESSMENT**
  - Urethrocystoscopy
  - Urodymanics

- **CONDITION**
  - Stress incontinence
  - Mixed incontinence
  - Urge incontinence
  - "Overflow" incontinence

- **PATHO-PHYSIOLOGY**
  - Sphincteric incompetence
  - Overactive Detrusor
  - Bladder Outlet Obstruction
  - Underactive Detrusor
  - Lower Urinary Tract Anomaly/Pathology

- **TREATMENT**
  - If initial therapy fails:
    - Artificial urinary sphincter
    - Filling procedures
    - Blanking agents
  - If initial therapy fails:
    - Neurostimulation
    - Sacral blockade
    - Botulimumtoxin detrusor injections
    - Bladder augmentation / substitution
    - Intermittent catheterization (IC)
    - Alpha blockers
    - 5-α-reductase inhibitors
    - Neurostimulation
    - Correct anatomic BOO

- **Complex history, e.g.:**
  - Consider:
    - Urethrocystoscopy
    - PVR / Flow rates
    - VCUG/urethrogram
    - Ultrasound / RP
  - Correct anatomic BOO
  - Treat pathology

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Figure 4. Initial management of urinary incontinence in men

Figure 5. Specialized management of urinary incontinence in men
3.3 Management of neurogenic urinary incontinence

Initial Management of Neurogenic Urinary Incontinence

![Diagram showing initial management of neurogenic urinary incontinence]

If the initial empirical treatment fails, special management is indicated for all cases of neurogenic incontinence.
**Specialized Management of Neurogenic Urinary Incontinence**

<table>
<thead>
<tr>
<th>LEVEL OF LESION / HISTORY</th>
<th>Peripheral Nerve Lesion (e.g. Radical Pelvic Surgery)</th>
<th>Suprasacral Infrapontine Spinal Cord Lesion</th>
<th>Suprapontine Cerebral Lesion (e.g. Parkinson’s Disease, Stroke, Alzheimer’s Disease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSESSMENT</td>
<td>Urodynamics (consider the need of simultaneous imaging / EMG)</td>
<td>Urinary tract imaging -&gt; if abnormal: renal scan</td>
<td></td>
</tr>
<tr>
<td>CLINICAL ASSESSMENT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONDITION</td>
<td>STRESS INCONTINENCE</td>
<td>“OVERFLOW” INCONTINENCE</td>
<td>DETRUSOR HYPERREFLEXIA (cerebral)</td>
</tr>
<tr>
<td>PATHOPHYSIOLOGY</td>
<td>Sphincteric Incompetence</td>
<td>Detrusor Areflexia</td>
<td>Detrusor Hyperreflexia with DSD</td>
</tr>
<tr>
<td></td>
<td>Detrusor Hyperreflexia with DSD</td>
<td>Detrusor Hyperreflexia</td>
<td></td>
</tr>
<tr>
<td>TREATMENT</td>
<td>Timed voiding</td>
<td>IC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ext. Appliances</td>
<td>Alpha blockers</td>
<td>Behavioral modification (timed voiding)</td>
</tr>
<tr>
<td></td>
<td>Bulking agents</td>
<td>Intravesical electrostimulation</td>
<td>Antimuscarinics ± IC</td>
</tr>
<tr>
<td></td>
<td>Artificial sphincter</td>
<td>Bladder expression</td>
<td>Botulinum toxin detrusor injections</td>
</tr>
<tr>
<td></td>
<td>Sling procedure</td>
<td></td>
<td>SDAP* ± IC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SDAF* + SARS**</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Ext. sphincterotomy</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Bladder augmentation/substitution ± IC</td>
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<td></td>
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<td>Urinary diversion</td>
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<tr>
<td></td>
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<tr>
<td>Risk factors</td>
<td>Detrusor Hyperreflexia with DSD</td>
<td>Detrusor Hyperreflexia</td>
<td></td>
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<tr>
<td></td>
<td>Detrusor Hyperreflexia</td>
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<tr>
<td></td>
<td>Cooperative mobile patient</td>
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<td></td>
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<tr>
<td></td>
<td>Uncooperative immobile patient</td>
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</tbody>
</table>

*SDAF = Sacral deafferentation  
**SARS = Sacral anterior root stimulation

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**Figure 7.** Specialized management of neurogenic urinary incontinence
3.4 Management of urinary incontinence in frail/disabled older people

Due to their frequently impaired general health status, frail/disabled older people may be unfit for primary treatment regimens. In this case – or if initial treatment attempts fail – specialist reassessment and modified methods are indicated in order to achieve so-called ‘dependent’ or ‘contained’ continence.

Specialized management of urinary incontinence in frail/disabled people has to be individualized since it heavily depends on the patient’s condition.
3.5 Management of urinary incontinence in children

Figure 9. Initial management of urinary incontinence in children

Post-void residual urine (PVR) is an important diagnostic parameter that should be evaluated in patients with a complex history.

If any form of initial therapy fails specialized management is required.

Any complex urinary incontinence which is considered to need specialized management requires further urodynamic evaluation and repeated PVR assessments, since the manifold treatment strategies strongly depend on the correct diagnosis, and usually have to be individualized.
4. CONCLUSION

Since urological specialists are generally available throughout Europe, their intervention should not be restricted to the ‘specialized’ level of management. Although it may appear to challenge the division of the algorithms into ‘initial’ and ‘specialized’ management, early specialist involvement - even at the level of the patient’s first presentation - is highly recommended. This avoids needless and expensive diagnostics, discouraging treatment failures and an unnecessarily prolonged course of the disease due to the lesser experience of ‘generalists’.