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Introductory note:

The EAU published a full text Incontinence guideline in 2001. Since the most updated version currently available is the short 2005 version it was considered appropriate to include that text in this full reprint of the EAU guidelines.

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.
Figure 1. ECIQ-SF questionnaire

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:

2 Are you (tick one):

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.
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.
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 botulinumtoxin A detrusor injections in the treatment of urge incontinence. Since botulinumtoxin 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/SYMPOTOM 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
- Lifestyle interventions
  - Pelvic floor muscle training
  - Bladder retraining
- Antimuscarinics
- If initial therapy fails: SPECIALIZED MANAGEMENT

**Specialized Management of Urinary Incontinence in Men**

### HISTORY/SYMPOTOM ASSESSMENT
- Incontinence on Physical Activity
- Incontinence with Urgency/Frequency

### CLINICAL ASSESSMENT
- Urethrocystoscopy
- Urodynamics

### 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
  - Sling procedures
  - Blading agents
- If initial therapy fails:
  - Neurostimulation
  - Sacral blockade
  - Botulinum toxin detrusor injections
  - Bladder augmentation / substitution
  - Intermittent catheterization (IC)
  - Alpha blockers
  - 5-α-reductase inhibitors
  - Neurostimulation
  - Correct anatomic BOS
- Consider:
  - Urethrocystoscopy
  - PVR / Flow rates
  - VCUG/urethrogram
  - Ultrasound / IVP

**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

Figure 6. 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

**LEVEL OF LESION / HISTORY**
- Peripheral Nerve Lesion (e.g. Radical Pelvic Surgery)
- Conus/Cauda Lesion (e.g. Lumbar Disc Prolapse)
- Suprasacral Infrapontine Spinal Cord Lesion
- Suprapontine Cerebral Lesion (e.g. Parkinson’s Disease, Stroke, Alzheimer’s Disease)

**CLINICAL ASSESSMENT**
- Urodynamics (consider the need of simultaneous imaging / EMG)
- Urinary tract imaging -> if abnormal: renal scan

**CONDITION**
- STRESS INCONTINENCE
- "OVERFLOW" INCONTINENCE
- REFLEX INCONTINENCE (spinal)
- DETRUSOR HYPERREFLEXIA (cerebral)

**PATHOPHYSIOLOGY**
- Sphincteric Incompetence
- Detrusor Areflexia
- Detrusor Hyperreflexia with DSD
- Detrusor Hyperreflexia without DSD

**TREATMENT**
- Timed voiding
- Ext. Appliances
- Bulking agents
- Artificial sphincter
- Sling procedure
- IC
- Alpha blockers
- Intravesical electrostimulation
- Bladder expression
- Triggered voiding
- Antimuscarinics + IC
- Neurostimulation + IC
- Botulinum toxin injections
- Antimuscarinics + IC
- Botulinum toxin injections + SDAF + IC
- Detrusor hyperreflexia
- Detrusor hyperreflexia with DSD
- Detrusor hyperreflexia without DSD
- Behavioral modification (timed voiding)
- Antimuscarinics
- Neurostimulation
- Botulinum toxin injections
- Bladder augmentation/substitution
- Urinary diversion
- Behavioral modification (timed voiding)
- Antimuscarinics
- Neurostimulation
- Botulinum toxin injections
- Bladder augmentation/substitution
- Behavioral modification (timed voiding)
- Antimuscarinics
- Neurostimulation
- Botulinum toxin injections
- Bladder augmentation/substitution

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

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.

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#### Figure 8. 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.

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#### Management of Urinary Incontinence in Frail-Disabled Older People

<table>
<thead>
<tr>
<th>Incontinence on Physical Activity</th>
<th>Incontinence with Urgency / Frequency</th>
<th>Incontinence with Voiding Symptoms / Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Assess reversible conditions (see “DIAPPERS”)  - if present, treat/correct and reassess</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Assess CNS, cognition, mobility, activities, of daily life (ADL), “frailty”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Urinary diary and symptom score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Assess quality of life and desire of treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Physical examination abdominal, perineal, rectal, sacral neurological</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Attempt to demonstrate incontinence when coughing (stress test)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Assess PVR: physical exam. / catheterization / ultrasound</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### STRESS INCONTINENCE

1. **Life style interventions**
2. **Behavioral therapies**
3. **Topical estrogens (women)**

**Initial Treatment**
- Consider cautious addition and trial of antimuscarinics
- If PVR>500: catheter decompression, then reassessment
- **Overflow** INCONTINENCE

**Final Assessment**
- **Incontinence associated with:**
  - Pain
  - Hematuria
  - Recurrent infection
  - Pelvic mass
  - Pelvic irradiation
  - Pelvic surgery
  - Major prolapse (women)
  - Post prostatectomy (men)
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’.