

BLADDER MANAGEMENT IN STAGES OF MEDICAL REHABILITATION

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Bladder dysfunction is a frequent complication of neurological conditions, spinal cord injuries, strokes, and pelvic surgeries. It significantly impairs patients' quality of life and increases the risk of serious complications such as urinary tract infections (UTIs) and chronic kidney disease (CKD). Effective and timely bladder management is, therefore, a critical component of the comprehensive rehabilitation process.

The main goals of bladder management during rehabilitation include: restoration of voluntary bladder control, prevention of infections and renal complications, reduction of post-void residual urine volume, improvement of patient comfort and well-being, promotion of self-care abilities and independence.

Stages of Medical Rehabilitation:

- **Acute Phase:** stabilization of the patient's general condition, prevention of urinary tract infections, temporary catheterization when indicated, monitoring fluid balance and diuresis.

- **Subacute Phase:** comprehensive diagnostic evaluation, including neurological and urological assessments, identification of the type and severity of neurogenic bladder dysfunction, initiation of bladder training and scheduled voiding.

- **Late Phase:** patient education in clean intermittent self-catheterization (CISC), implementation of rehabilitative measures aimed at restoring voluntary urination, psychological support and emotional adjustment to foster autonomy.

Diagnostic Methods should include: renal and bladder ultrasound, cystometry and urodynamic studies, uroflowmetry, cystoscopy (if clinically indicated).

Bladder Management Strategies can be divided on non-pharmacological interventions (behavioral therapy, physiotherapy, acupuncture), pharmacological treatment (anticholinergic agents, beta-3 adrenergic agonists, alpha-blockers), invasive (clean intermittent catheterization, indwelling catheter, intradetrusor botulinum toxin A injections, suprapubic cystostomy, surgical interventions in refractory or anatomically altered cases).

Effective bladder management requires coordinated efforts from a multidisciplinary rehabilitation team, including: Physical medicine and rehabilitation (PM&R) physicians, Urologists, Neurologists, Physiotherapists, Specialized nurses, Psychologists and social workers.

Patient and caregiver education plays a pivotal role in sustaining long-term functional outcomes and preventing readmissions.

Key indicators of successful bladder rehabilitation include: reduction in urinary tract infections and complications, decreased post-void residual volumes, enhanced quality of life and daily functioning, successful reintegration into social and professional life.

An individualized, timely, and multidisciplinary approach to bladder management across all stages of medical rehabilitation significantly improves patient outcomes, reduces morbidity, and fosters greater independence and social participation.