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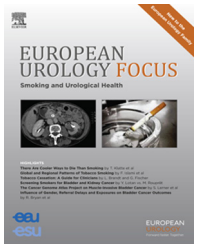

Review – Aging Male

Male Incontinence: The Etiology or Basis of Treatment

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Abstract

Context: Elderly men are an increasing proportion of the aging population in the 21st century. Urinary incontinence reduces the quality of life and increases the burden of care for the aging population.
Objective: The primary objective of this review is to explore the etiopathology of common causes of incontinence in aging male patients. The focus is on the algorithm of the initial evaluation of these patients from both a primary care and a urologic standpoint.
Evidence acquisition: A nonsystematic review of the literature was performed in September 2017. The data and evidence of this paper have been obtained by a PubMed search, and through official statements and recommendations from the International Consultation on Incontinence. Our search incorporated terms such as elderly, urinary incontinence, male, urodynamics, bladder outlet obstruction, BPH, neurologic, urethral stricture, spinal shock, and urethral sphincter injury.
Evidence synthesis: A total of 7204 papers were identified; 6838 were excluded for female populations and populations <65 yr. A broad differential diagnosis exists for urinary incontinence in aging male patients, and many patients will be found to have multifactorial incontinence, compounding the issue. Neurologic etiologies common in this population include cerebrovascular accidents, Parkinson's disease, and dementia. Spinal cord injuries and multiple sclerosis are less common. In this analysis, non-neurologic etiologies leading to incontinence are broadly grouped under bladder outlet obstruction, sphincter injury, overactive bladder, underactive bladder, polypharmacy, and urinary tract infections.
Conclusions: We provide a review of the differential diagnosis of incontinence in an elderly male patient. There is a need for understanding etiopathology and recognizing that many patients may have a combination of the above. The assessment algorithm, modified from the International Continence Society, provides a pathway for the provider in evaluating and treating elderly patients.
Patient summary: In this review, we have identified the sources of urinary incontinence in elderly male patients by neurologic and non-neurologic causes. We also discuss the basic evaluation and workup of an incontinent patient.

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1. Introduction

Incontinence is an increasingly prevalent problem facing our aging adult population. In particular, incontinence in a male patient presents a particular and unique situation for providers, especially for the urologist. Through this review, we seek to classify and categorize the types of incontinence, the etiology, and the basic evaluation of the incontinent male patient.

Incontinence is defined as the inability to hold urine, but this can further be subcategorized. Stress urinary incontinence (SUI) is defined as the loss of urine with movement or abdominal strain, whereas urgency urinary incontinence (UUI) is the loss of urine associated with a feeling of urgency. Mixed urinary incontinence is seen as any varying combination of the two. Additionally, patients may describe nocturnal enuresis (nighttime leakage), postvoid dribbling, inappropriate voiding, and continuous urinary incontinence [1]. Urge-related leaking and postvoid dribbling are the most bothersome symptoms to the patient [2].

The incidence of male incontinence has varied widely, with the International Continence Society quoting a range of 1–39% of men affected. Among these incontinent patients, a prevalence of UUI, ranging from 40% to 80%, is reported [3]. This is followed by mixed incontinence at 10–30% and stress incontinence at $<$10%. This is quite different from the female population, with reports of 25–45% prevalence with a much higher risk of SUI (10–39% of these women) followed by mixed incontinence at 7.5–25% [3]. Another report has demonstrated an increasing prevalence of incontinence with age, with only 0.7% of men in their 50 s reporting UUI versus 3.4% of men aged $\geq$70 yr [4]. Although less reliably studied, SUI also appears to increase with age, with one group reporting 0.9% in men aged 35–44 yr versus 4.9% in men aged 65 yr and older [5]. While nocturia is well studied, enuresis is less so. Bladder dysfunction such as detrusor hyper-reflexia with impaired contractility (DHIC), a condition described by Resnick and Yalla, is less well studied in male patients [6].

An aging patient presents with contributing comorbid medical problems that have to be sorted through when evaluating incontinence. While it has often been assumed that incontinence is just "part of aging," this has largely been debunked as a myth, and the importance of understanding the etiology of the condition cannot be stressed enough. Reversible causes described under DIAPPERS by Resnick and Yalla [7], should be addressed before embarking on the workup; these include delirium, infection, atrophic urethritis, pharmacology, psychological disorders, endocrine disorders, restricted mobility, and stool impaction. Elderly patients are faced with problems such as stroke, surgical injuries, radiation changes, as well as concomitant medical problems such as congestive heart failure and diabetes. Outlet obstruction and bladder over- or underactivity add to the mix. With a broad spectrum of etiologies that all come with a variety of presentations, simplifying the differential and workup of incontinence in male patients is critical. Through this narrative review, we will categorize the etiologies by neuropathic versus non-neuropathic sources. We will finish with our algorithm of assessing an incontinent patient.

2. Evidence acquisition

In September 2017, a nonsystematic PubMed search was performed to review the available and most up-to-date literature regarding incontinence in the elderly. Our primary search terms included *elderly male* and *urinary incontinence* (Medical Subject Headings). However, we also incorporated further terminologies in order to explore a differential diagnosis of incontinence in the elderly. This included terms such as epidemiology, post-prostatectomy, cerebrovascular accident, spinal cord injury, traumatic brain injury, urinary sphincter injury, Parkinson's disease, benign prostatic hyperplasia, bladder neck contracture, radiation, urethral stricture, and constipation. We limited our search to English-language literature. Additionally, the fifth International Consultation on Incontinence [3] was heavily referenced. Figure 1 summarizes our acquisition process.

3. Evidence synthesis

3.1. Neuropathic etiologies

In general, the neuropathic insult may be subdivided into suprasacral, sacral, and peripheral injuries. Understanding the pathophysiology of micturition and insults to the process are key to understanding the neurogenic bladder. The suprapontine micturition control is largely inhibitory, focusing primarily in the cerebellum, basal ganglia, and

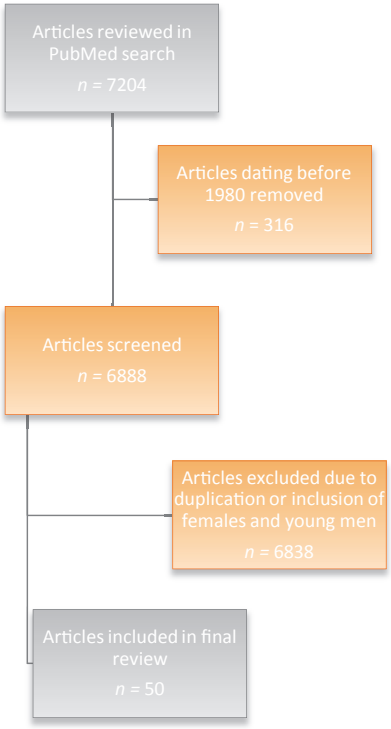

Fig. 1 – Summary of evidence acquisition.

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