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Genitourinary Disorders – Urinary Incontinence

One major issue that affects the United Sates (US) population is genitourinary disorders. The biggest reason why these disorders are such an issue to our patients stems mainly from how many disorders fall under this category. For example, acute kidney injury, chronic kidney disease, bladder cancer, ovarian cancer, sexual dysfunction, obstructive uropathy, benign prostatic hyperplasia (BPH), overactive bladder, urinary tract infections, or any infection of the parts can all be classified as genitourinary disorders. It would be a monumental task to do an overview of all disorders, so this article will focus on urinary incontinence which affects approximately 33 million Americans[1] (roughly 10%), with a large portion of them being older and women. Urinary incontinence occurs quite frequently in adults as they age.

Etiology of Urinary Incontinence

The cause of urinary incontinence is labeled as transient, (cases such as stool impaction, delirium, infection, or medications) meaning the problem can easily be reversed by fixing the root of the disorder, or established (tumors, Alzheimer, spinal cord injury, or surgeries) which would leave long-lasting symptoms that can't be easily reversed. The major anatomical players for this disorder include the bladder which contains urine, the detrusor muscle which, when contracted, leads to the urge to void and voiding, and finally the bladder sphincter which can be loose or tight depending on the type of incontinence. Urinary incontinence can be separated into five different subtypes: urge, stress, overflow, functional, or mixed incontinence.

- Urge incontinence is defined by an uncontrollable need to void the bladder followed by a moderate to large volume depletion. This subtype can be induced by several medications, but mainly diuretics. It is also much more of an issue with elderly patients and is the most common subtype for women. Nocturia (night urination) falls into this category as well.
- Stress incontinence is generally when some catalyst causes a release of a small volume of urine. The catalyst can be a quick jolt such as a laugh, cough, or sneeze; but it could also be an increase in strain or pressure to the abdomen such as bending over or lifting a heavy object. While this is the second most common subtype in women, men may also experience stress incontinence more frequently after surgeries such as a

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prostatectomy. In addition, because of the increased abdominal pressure, obese patients may suffer from this as well.

- Overflow incontinence occurs when a full bladder leaks a small amount of urine; these patients can have troubles completely voiding their bladder which leads to this leakage. The leakage, while small in volume, could be constant. This subtype is more common in men than women and the major cause being BPH. BPH causes men to not be able to void fully (obstructing the out-flow) which can then lead to an overflow over time.
- Functional incontinence occurs when there is a loss of control over the ability to control the urge to void the bladder or when other issues may prevent the patient from voiding. Disease states such as dementia may cause patients to forget where the bathroom is or that they even need to go. Stroke or spinal injuries could result in patients being unable to transmit these urges to the brain leading to them not being able to know they have to go (or they could be physically unable to get to the bathroom). This could even be caused by diseases such as arthritis or extreme pain which could slow the patient down too much to make it to the bathroom in time.
- Finally, there is mixed incontinence which is simply more than one of the previously listed causes leading to incontinence.

Treatment of Incontinence

There are a wide variety of medications that can be used depending on the root of the issue. For example, overflow incontinence caused by BPH can be treated with alpha-blockers such as tamsulosin or doxazosin. 5α-reductase inhibitors such as dutasteride might also be used to treat BPH. While overactive bladders caused by inappropriate detrusor contraction or spasms of the urinary tract can be treated with oxybutynin or other antimuscarinics. Other medications that have been used include duloxetine, imipramine, hyoscyamine, or mirabegron. There are several non-pharmacologic treatments that patients may use as well. Patients can try bladder training which involves setting a schedule to void leading to decreased urges in the times which they are not scheduled to go (of course this may take a while to achieve). Most patients also restrict their fluid intake before sleeping or going for longer car trips to prevent any impulses resulting from normal water intake. Pelvic muscle exercises or Kegels may also be

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helpful. If used consistently, these exercises may result in curing their incontinence, as many as 10-25% of women < 75 reported a cure.[2] Adult diapers may be an option in certain patients who can't control their urges or cannot make it to the bathroom in time. As a last line, generally reserved for younger patients who have recurrent incontinence, are surgeries such as placing a bladder neck sling to help stabilize the flow. Most of these surgeries are based entirely on the cause of the incontinence and the capability of the patient to undergo surgery. While treatment options may be limited to which subtype they have or what the cause is, to improve their quality of life it sometimes even involves telling them to do Kegel exercises and putting on adult diapers.

The Dispensary of Hope has the following medications available to treat genitourinary disorders:

- Duloxetine
- Sildenafil
- Tamsulosin
- Prazosin
- Doxazosin
- Oxybutynin
- Dutasteride

References

1. National association for continence. https://www.nafc.org/urinary-incontinence. Accessed August 2019.
2. Shenot PJ. Urinary Incontinence in Adults. Merck manual professional version. https://www.merckmanuals.com/professional/genitourinary-disorders/voiding-disorders/urinary-incontinence-in-adults#v1051893. Updated July 2018. Accessed August 2019.
3. Buckley BS, Lapitan MCM. Prevalence of urinary incontinence in men, women, and children—current evidence: findings of the fourth international consultation on incontinence. Urology. Vol 76(2);265-270.

https://www.sciencedirect.com/science/article/pii/S0090429510000191. Published August 2010. Accessed August 2019.

4. Milsom I, Gyhagen M. The prevalence of urinary incontinence. Climacteric. 22(3);217-222. https://www.tandfonline.com/doi/full/10.1080/13697137.2018.1543263?scroll=top&needAccess=true. Published December 2018. Accessed August 2019.

5. Continence Foundation UK. Types of incontinence. http://www.continence-foundation.org.uk/types-of-incontinence.html. Published 2011. Accessed 2019.