



COMPREHENSIVE LITERATURE REVIEW ON THE DIAGNOSIS AND MANAGEMENT OF STRESS URINARY INCONTINENCE

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Introduction. Detrusor overactivity, which may clinically mimic stress urinary incontinence (SUI) or coexist with it, complicates the recognition of this form of urinary incontinence and often leads to inappropriate surgical correction—an outcome that could frequently be avoided [1, 3, 4, 9, 10, 21, 24]. Diagnostic challenges arise from the fact that detrusor hyperreactivity may be asymptomatic, presenting without urgency episodes and manifesting solely as symptoms typical of stress incontinence [6, 8, 14, 17]. Recent clinical experience has demonstrated that detrusor overactivity may serve not only as an independent cause of SUI but also as a factor that closely resembles its clinical presentation [2, 5, 7, 11, 12, 15].

Study objective: To provide an analytical review of the literature on the diagnosis and treatment of stress urinary incontinence.

Discussion. Diagnosis of any disease begins with a properly collected medical history and an accurate assessment of patient complaints, followed by appropriate instrumental diagnostic methods [2, 9, 12, 18, 19, 21, 24]. Symptoms associated with stress urinary incontinence are highly intimate and may cause embarrassment during discussion. Therefore, clinicians must ask sensitive questions in a trustworthy manner to reveal complaints characteristic of SUI and direct the diagnostic pathway appropriately. Failure or reluctance to recognize typical symptoms often leads to misdiagnosis—most commonly chronic cystitis—which results in long-term and unnecessary antibiotic therapy [13, 17, 20, 22]. The absence of a standardized diagnostic algorithm complicates understanding of SUI etiology and subsequently makes therapeutic decision-making more difficult [2, 3, 4, 5].

According to the literature, the traditional diagnostic workup for female urinary incontinence should include: assessment of symptoms and medical history, bladder diary, laboratory tests, vaginal examination, cystourethroscopy, excretory urography, retrograde cystography, ultrasound evaluation, multichannel urodynamics, ambulatory urodynamic monitoring, and magnetic resonance imaging [4, 5, 20, 22].

Historically, SUI was considered easy to diagnose. Many authors argued that diagnosis could be made solely on the basis of a meticulously collected history and a gynecological examination. This approach remains widely accepted among American researchers [2, 3, 12, 19].

A clear anamnesis is crucial, as it determines the direction and extent of further assessment [3, 5, 7, 9, 18]. Symptom evaluation is most effectively performed using a voiding diary, documenting voiding frequency, volume, incontinence episodes, pad use, daily fluid intake, and any associated pain [2, 4, 9, 10, 11, 12, 16]. Numerous validated questionnaires are available to differentiate between stress and urge incontinence.

Until recently, diagnosis of SUI relied mainly on endoscopic and radiological methods. However, due to the complexity of lower urinary tract physiology, comprehensive urological, gynecological, and neurological evaluation is often necessary to identify underlying causes, especially in mixed urinary incontinence, where conventional methods may be insufficient [2, 5, 9, 11, 13, 22].

Urodynamic testing is currently considered the most objective tool for assessing voiding dysfunction and plays a key role in selecting the optimal therapeutic strategy [7, 8, 16, 18, 23, 24]. Nonetheless, the literature contains differing opinions on the value of urodynamics in the assessment of urethral function among SUI patients [2, 3, 5, 9, 11, 12, 24].

Beginning in the 1980s–1990s, urologists worldwide actively sought simpler and more effective surgical approaches for SUI. Over 250 surgical techniques have been proposed and modified, grouped into four main categories [18, 20, 21, 22, 23, 24]:

1. Procedures restoring bladder–urethral anatomy through vaginal access;
2. Retropubic urethrocystocervicopexies (in various modifications);
3. Procedures correcting bladder–urethral anatomy with fixation of the musculo-ligamentous structures;
4. Slings (suburethral tape) procedures in multiple variations.

Periurethral injectable therapies represent an alternative for patients with comorbidities that contraindicate anesthesia. The choice of surgical method must consider the type and severity of SUI and any degree of cystocele [1, 7, 21, 24].

Among all existing surgical techniques, minimally invasive procedures using free-floating polypropylene mid-urethral slings are currently preferred [1, 14, 16, 19, 20]. After more than ten years of clinical use, the tension-free vaginal tape (TVT) procedure has become the “gold standard” for SUI surgery, showing clinical success rates of 82–96% according to numerous studies [1, 17, 23, 24]. Subsequently, hundreds of publications have confirmed the high efficacy of this technique [18, 19, 22, 23].

Recently, shorter versions of slings –“mini-slings”- have been introduced [16, 22, 23, 24]. These methods avoid skin exit points and bladder wall contact, reducing invasiveness. The first commercial system, TVT-Secur (Gynecare/Ethicon), appeared in 2005. Early clinical data were inconsistent, with reported success rates ranging from 47% to 83.3% [1, 17, 18, 23, 24].

A meta-analysis conducted by several authors [1, 4, 16, 18, 22, 23, 24] summarized randomized controlled trials comparing TVT with other surgical techniques. Reported cure rates varied widely, from 20% to 93%, despite overall progress in SUI surgery.

Complication rates after TVT remain low. Bladder perforation occurs in 2.5–11.7% of cases; significant bleeding in 0.5–2.5%. Postoperative complications include urinary tract infections (0.4–31.5%), de novo urgency (3.1–29%), transient or persistent voiding dysfunction (2.8–38%), and vaginal erosion (0.6–5.4%) [1, 23, 24].

However, long-term postoperative data (over 10 years) are still lacking. Approximately 10% of women undergo pelvic floor surgery during their lifetime, and up to 30% of these procedures are performed for recurrent disease. Recurrence and unsatisfactory long-term outcomes remain significant despite improved diagnostic methods and advanced surgical techniques [4, 6, 17, 18, 19, 20].

Conclusion. Review of contemporary literature confirms that SUI remains a relevant interdisciplinary issue. The adoption of standardized questionnaires and unified diagnostic

algorithms can significantly improve the quality of care for affected women. Modern evidence supports the effectiveness of combined conservative and surgical approaches. Non-invasive methods such as biofeedback and electrical stimulation should be considered first-line therapy. Mid-urethral slings continue to provide durable clinical benefits with low complication rates. At the same time, attention to psychosocial factors, quality of life, and microbiological changes offers promising directions for personalized treatment strategies.

Literature:

- 1.Abrams P., Cardozo L., Fall M. The standardization of terminology of lower urinary tract function: Report from the standardization sub-committee of the International Continence Society//Neurol. Urol. - 1999.-№ 21.-P. 167-178.
- 2.Choe J.H., Choo M.S., Lee K.S. The impact of tension-free vaginal tape on overactive bladder symptoms in women with stress urinary incontinence: significance of detrusor overactivity // J. Urol. - 2018. - Vol. 179, № 3. - P. 214-219.
- 3.De Laval J. Novel surgical technique for the treatment of female stress urinary incontinence: transobturator vaginal tape inside-out // Eur. Urol. - 2013. - Vol. 44, № 6. - P. 724-730.
- 4.Delorme E. Transobturator urethral suspension: mini-invasive procedure in treatment of SUI in women//Prog. Urol. - 2011.-Vol. 11.-P. 1306-1313.
- 5.Keegan P.E., Atiemo K., Cody J. Periurethral injection therapy for urinary incontinence in women // Cochrane Database of Syst. Rev. - 2017. - № 3. - P. 196-203.
- 6.Raz S. Modified bladder neck suspension for female stress incontinence // J. Urologi. - 1981.- № 17.-P. 82-85.
- 7.Sadikova D.I. et all Features of treatment of leukoplakia of the bladder// Academicia. An International Multidisciplinary Research Journal. ISSN: 2249-7137, Vol. 11, 2, 2021.
- 8.Sadikova D.I., Isroilov M. Minimally invasive interventions for ureteral stones in extragenital pathologies//IBMSCR, 2025, Vol.5, Issue 2, P.33-35
- 9.Willson P.D., Herbison R.M., Herbison G.P. Obstetric practice and the prevalence of urinary incontinence three month after delivery / Br . J. Obstet Gynaecol. - 2006. - Vol.103, №2.
- 10.Yu-Lung Chang, Alex T.L. Lin, Kuang-Kuo Chen. Experience with TVT-Secur* for Female Stress Urinary Incontinence / LUTS. - 2019. - № 1. - P. 74-77.
- 11.Zambrano T.G., Galán L.M., Garcia M.C. TVT and TOT for surgical correction of female stress urinary incontinence. Comparison between techniques // Arch. Esp. Urol. - 2018. - Vol. 61.-P. 861-865.
- 12.Адамян И.В., Козаченко И.Ф. Операция с использованием свободной синтетической петли (TVT) в лечении стрессового недержания мочи // Акушерство и гинекология. - 2013.-№ 5.-С. 10-13.
- 13.Айламазян Э.К., Горелов А.И., Ниаури А.И. Алгоритм обследования и лечения женщин со смешанным недержанием мочи// Урология. - 2007. - № 1. - С. 27-33.
- 14.Александров В.П., Куренков А.В., Николаева Е.В. Стрессовое недержание мочи у женщин. - СПб: СПбМАПО, 2006. - 92 с.
- 15.Буянова С.Н., Попов А.А., Петрова М.А. Недержание мочи у женщин клиника, диагностика, лечение (клиническая лекция)// -М., 2006. - 19 с.
- 16.Гаджиева З.К. Уродинамические исследования в диагностике и лечении нарушений мочеиспускания : дис. ... д-ра мед. наук: 14.00.40. - М., 2009. - 319 с.



- 17.Дубрович В.Н. Малоинвазивная кольпосуспензия при стрессовом недержании мочи у женщин // Урология. - 2004. - № 3. - С. 16-18.
- 18.Касян Г.Р. Недержание мочи: современные стандарты лечения и новые перспективы // Урология. -2013. - № 6. - С. 111-117
- 19.Краснопольский В.И. и др., Патогенетические подходы к лечению мочевого инконтиненции у женщин // Патогенез. -2011. - Т. 9,- № 1.- С. 50-54.
- 20.Кучкаров Ж., Садилова Д.И., Шадманов М.А. Недержание мочи у женщин – социальная проблема// «Экономика и социум», 2023, №7(110).
- 21.Садилова Д.И., Косимхожиев М.И. Профилактика рецидивов хронического цистита// Спец. выпуск журнала «Вестник ТМА», Ташкент, 2022, С.167-169.
- 22.Садилова Д.И., Ибрагимов М. Влияние эстрогенного дефицита на недержание мочи у женщин// «Экономика и социум», 2023, №5(108).
- 23.Садилова Д.И., Зайнобитдинова Ф.Т. Ожирение – неинфекционная «эпидемия» у женщин с недержанием мочи//Экономика и социум, 2024, №2(117)
- 24.Шадманов М.А., Садилова Д.И., Зайнобитдинова Ф.Т. Факторы риска развития недержания мочи у женщин//Экономика и социум, 2024, 1(116)