JOURNAL OF COMPLEMENTARY MEDICINE RESEARCH

Journal of Complementary Medicine Research, ISSN: 2146-8397 Vol. 14, No. 2, 2023 (pp.170-173)

RESEARCH ARTICLE

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Urinary Incontinence, Kegel Exercises, Core Training and Collagen - A Systematic Review

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ABSTRACT

Urinary incontinence, with its scientific name, is the inability of the individual to control the urine. It is a common problem worldwide. This problem is twice as common in women as in men. This problem occurs more in old age. There are two types of muscle fibers in the pelvic diaphragm muscles. The first are slow-twitch type 1 fibers and are responsible for providing the tonic support of the pelvic structures. The second type of fibers are fast-twitch type 2 fibers and play a role in balancing intra-abdominal sudden pressure increases. It is absolutely inevitable that the pelvic floor anatomy should be well known, since the pelvic floor muscles undertake tasks such as holding urine and providing coordination by relaxing during voiding. Pelvic fascia is rich in elastic tissue and smooth muscle in addition to collagen. It plays an active role in the support of the pelvic organs and the functions of these organs. For this reason, it is thought that exercising the abdominal region muscles and pelvic region muscles in the problem of urinary incontinence will significantly support the prevention of the problem in individuals with this problem, and regular use of collagen will also benefit the individual in the fight against this ailment.

AIM: The purpose of this scientific review is to review the existing literature on related research on the relationship between urinary incontinence, Kegel exercises applied to prevent urinary incontinence, Core Training and Collagen use. In addition to Kegel exercises applied to individuals in urinary incontinence disorders, Core area training and collagen use is to provide scientific support and guide to positively change the course of the disease.

METHODS: The research was carried out with document analysis and scanning model. Document analysis involves the analysis of written materials containing information about the case or cases intended to be investigated. In the study, a literature review was conducted on urinary incontinence, Kegel exercises, Core training and Collagen. In the literature search, reliable science-based indexes such as Elseiver, Springer, Google Scholar, Pub Med, Med Gen, Tübitak, Yok National Thesis Center and Dergi Park were searched.

RESULTS: In this review, the causes of urinary incontinence, its types, which gender it is more effective and treatment methods are presented as a result of literature review. In addition, Kegel exercises, which are at the beginning of the treatment methods, and supporting Core exercises are given as examples.

CONCLUSION: In conclusion; Urinary incontinence, which is defined as urinary incontinence, is a disorder that is more common in women than in men. For this reason, it is important for women to take precautions especially in the face of situations that cause this ailment. Especially in the fight against this ailment, it can be recommended to apply Kegel exercises that strengthen the pelvic floor muscles, as well as to perform core training that provides the strength of the abdominal region to support this region and to work the internal balance muscles, and to use the collagen that is structurally in the pelvic fascia as a supportive nutrient.

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How to cite this article0: Turkay IK, Suna G.(2023) Urinary Incontinence, Kegel Exercises, Core Training and Collagen - A Systematic Review. Journal of Complementary Medicine Research, Vol. 14, No. 2, 2023 (pp. 170-173).

INTRODUCTION

Urinary incontinence

Urinary incontinence is a symptom, not a disease, and may be a precursor to a wide variety of pathologies. Urinary incontinence (UI) affects women more and its prevalence varies between 20% and 50%.[1, 8, 11] In scientific studies, it has been determined that the rate of urinary incontinence in men is less than in women. According to the report of the international urinary incontinence consultation, the prevalence rates of urinary incontinence in men vary between 1% and 39%.[25, 26] In various studies, the risk of incontinence in women aged 40-50 within 3 years is 8%, and it has been reported that age is an important risk factor for those over 65 years of age, approximately 28%. Although its incidence increases with age, it would be a mistake to view incontinence as a natural consequence of aging. Because urinary incontinence can be encountered at different rates at young ages.[8, 10, 11, 12] When the pelvic muscles contract to stop the urine flow during voiding, the intraurethral pressure increases and the urine flow stops.[2]

KEYWORDS:
Urinary incontinance, Kegel exercises, Core training, Collagen

ARTICLE HISTORY:
Received : Dec 20, 2022
Accepted : Jan 18, 2023
Published: Feb 25, 2023

DOI:
10.5455/jcmr.2023.14.02.26

It is absolutely inevitable that the pelvic floor anatomy should be well known, since the pelvic floor muscles undertake tasks such as holding urine and providing coordination by relaxing during voiding. Pelvic fascia (a connective tissue layer under the skin that connects, stabilizes, surrounds and separates muscles and other internal organs, primarily composed of collagen) are structures rich in elastic tissue and smooth muscle, apart from collagen. It plays an active role in the support of the pelvic organs and the functions of these organs.[3] The factors that cause urinary incontinence to be seen more frequently in women and men can be listed as follows: Pregnancy, estrogen deficiency, obesity, constipation, high-intensity exercises, diabetes, stress, menopause, old age, depression, heredity, smoking, wrong diets.[17-22]

Classification of urinary incontinence

- **Stress:** It is the type of urinary incontinence that occurs involuntarily during movements that increase intra-abdominal pressure, such as coughing, sneezing, and exercise.
- **Urge:** It is the type of involuntary urinary incontinence before reaching the toilet during the sudden and urgent need to go to the toilet.
- **Mixed:** It is the type of urinary incontinence that occurs when stress and urge types are seen at the same time.
- **Overflow:** It is the type of urinary incontinence that occurs as involuntary leakage of excess urine into the bladder in the form of leakage and not feeling any urge to urinate despite the bladder's capacity being full.

Detection Methods in Urinary Incontinence

- **Cystometry:** It is the measurement of the pressure in the bladder. Water is given to the bladder at a certain pressure and the person is asked to perform certain maneuvers.
- **(EMG) test:** It is a method of detecting whether the nerves that support the muscles that provide voluntary urine retention are contracted in a healthy way.
- **Pelvic Ultrasound:** It is a radiological method used to detect the current position and shape of the organs in the pelvis with sound waves.
- **Post-Void Residual Application:** It is the method used to measure the amount of urine remaining in the bladder after urination.
- **Urinalysis:** It is the method used to detect urinary tract infections.
- Cystoscopy: It is the method used to examine the internal structure of the bladder and the urethra that connects the bladder to the outside.23 İdrar Kaçırmada Tedavi

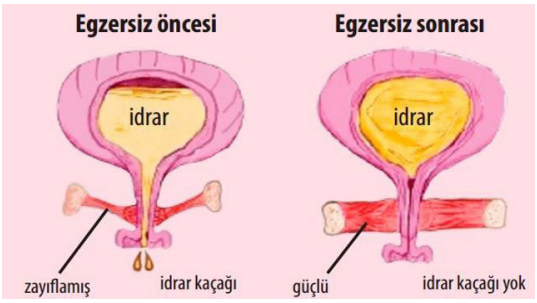

Fig. 1: Condition of pelvic floor muscles before and after exercise

Treatment Methods in Urinary Incontinence

* Surgical intervention (Applied in stress type)

- Drug treatment (It is applied especially in the compression type.)
- Kegel exercises (Especially applied in compression type.)

The Importance of Kegel Exercises

Kegel exercises are the recommended exercises for the treatment of urinary incontinence, which is applied in urinary incontinence, can be easily performed by women and men, and is also described as pelvic floor exercises.

Areas where Kegel exercises are effective (Pelvic floor muscles)

- Uterus
- Bladder
- Small intestine
- Rectum (the part of the large intestine close to the anus)

Core exercises

The core is also described as the "power zone" or "power house". It is also characterized as the starting point of the body's movement mechanism and the center of balance. The core region is very important for the movement capacity of the individual in physical activity. Because it is the region that gives the right movement. The spine has an important role in the work and strengthening of the back and abdominal muscles, which allow the hip muscles to remain in balance.

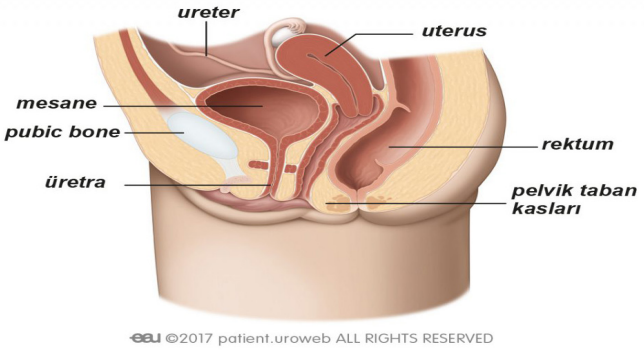

Fig. 2: Pelvic floor muscles

Fig. 3: Kegel exercises

A good application of the power created during the application of the movement from the leg to the trunk or from the trunk to the leg is possible by increasing the strength of these muscles working as a whole. The most important task of the core region is to provide body balance. The concept of balance is that all muscles are in coordination with each other. Basic muscles worked in core area training; The waist and abdomen, the entire hip region, is the back region. Strengthening the core area is important not only for sports performance, but also for maintaining proper body posture.[27, 28] Core balance exercises are used in many different areas such as medical rehabilitation, training and health. This type of exercise improves dynamic balance, functional anatomy, static balance and flexibility.[29, 30] Because core training causes both structural changes in muscles and neural adaptation.[31] In addition, core exercises used as dynamic and static training improve core balance and strength by improving proprioceptive senses and providing muscular recovery and body control.[32-34] Core exercises should be planned as flexibility exercises, self-weight exercises (stable ground movements), balance exercises (rubber band) exercises, respectively.[35] Core exercises can be applied as a support to Kegel exercises, which strengthen the pelvic floor muscles in terms of the muscles it works, and can help the treatment of urinary incontinence by providing further strengthening of the abdominal region, hip muscles and muscles that provide internal balance.

Collagen

Collagen is an important protein that makes up about 25% of the proteins in our body and makes up 75% of our skin.[36] The matrix in collagen tissues is a complex structure located between cells, filling the cell spaces and supporting them. It also retains water and minerals and adjusts tissue tension.[37] It is mostly found in skin, tendons, internal organs, bone, cartilage and connective tissue and is produced naturally by fibroblast cells by the body.[38] If we are to be evaluated in terms of urinary incontinence, Pelvic fascia (a connective tissue layer under the skin that connects, stabilizes, surrounds and separates muscles and other internal organs, consisting primarily of collagen), is also rich in elastic tissue and smooth muscle, apart from collagen. For this reason, regular use of collagen in individuals with this disorder can play an important role in the treatment of the disease. Collagen is divided into 7 classes according to the differences in their molecular structures.[39] Within these classes, there are 19 different types of collagen that perform specific functions in various tissues.[40]

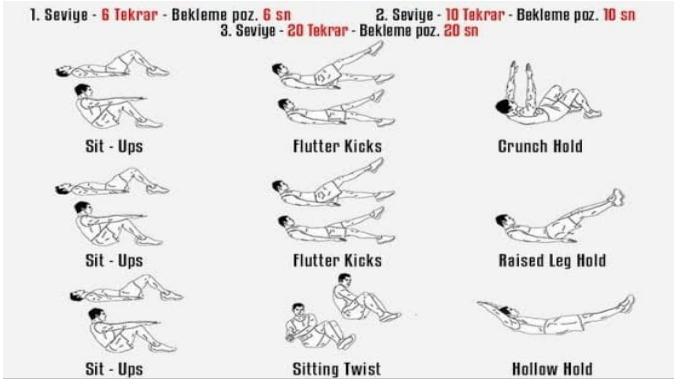

Fig. 4: Core exercise examples

Fibrous collagens are classified because type I, II, III, V and XI collagens are composed of fibers (41). It is stated that the most commonly used collagen types in this classification are Type 1,2,3.

CONCLUSION

In conclusion; Urinary incontinence, which is defined as urinary incontinence, is a disorder that is more common in women than in men. For this reason, it is important for women to take precautions especially in the face of situations that cause this ailment. Especially in the fight against this ailment, it can be recommended to apply Kegel exercises that strengthen the pelvic floor muscles, as well as to perform core training that provides the strength of the abdominal region to support this region and to work the internal balance muscles, and to use the collagen that is structurally in the pelvic fascia as a supportive nutrient.

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