

ASSESSMENT OF URINARY INCONTINENCE IN CLIMACTERIC WOMEN USING THE 1-HOUR PAD TEST.

Hypothesis / aims of study

Urinary incontinence (IU), defined as the inability to control urination, often affects middle-aged and elderly women (1). This condition is characterized as mild in 60% of the cases, moderate in 15% and severe in 10% (2). A number of factors can contribute to the emergence and/or worsening of urinary incontinence. The following are risk factors: advanced age, vaginal deliveries, intestinal constipation, chronic pulmonary disease, obesity, collagen diseases, hysterectomy, physical exercises that increase intra-abdominal pressure and estrogen deficiency (1). The pad test is a simple method for assessing urinary continence. Accordingly, the purpose of this study is to evaluate urinary continence in climacteric women using the 1-hour pad test.

Study design, materials and methods

This is a descriptive cross-sectional study of 30 climacteric women enrolled at basic health units in Northeast Brazil, divided equally into 2 groups, according to type of delivery. Group 1 (G1) was composed of women who had normal delivery and group 2 (G2) of women who had undergone cesarean section. All the women were submitted to hormone assessment and the 1-hour pad test. In this test, the patients are instructed to use a previously weighed sanitary napkin and drink 500 mL of water in the first 15 minutes. They were then instructed to perform a number of exercises such as: climb up and down stairs equivalent to one floor, sit down/stand up 10 times, cough vigorously 10 times, run on the spot for one minute, pick up objects from the floor five times and wash their hands for one minute under running water. The sanitary napkin was then removed and weighed, considering the test positive when losses exceeded one gram. Hormone status was assessed based on estradiol levels (E2), thyroid-stimulating hormone (TSH) and testosterone (T). All the hormones were measured using the chemiluminescence method. Multiple multiparous women (more than 5 deliveries) were excluded, as well as those submitted to perineoplasty or hysterectomy, individuals with endocrine or pelvic diseases (such as diabetes mellitus and myoma), those who experienced premature menopause (< 40 years of age) and those who had undergone hormone treatment.

Results

The results showed group homogeneity in terms of mean age (G1= 54.93 ±3.19 years and G2= 54.80 ±4.47 years, $p=0.9259$). In relation to parity, the mean number of children was 3.53±1.30 (G1) and 1.93±1.16 (G2) and the mean body mass index (BMI) was 26.43±3.98 (G1) and 28.35±3.11. All the patients (100%) showed natural menopause and time after menopause of 6.76±3.67 years in G1 and 6.93±4.46 years in G2 ($p=0.9119$). No cases of thyropathy were detected in G1 (TSH=1.736±0.90) or G2 (TSH=1.66±0.88). The pad test showed no significant difference in urinary losses between the two groups ($p=0.0987$). The reduced concentration of E2 was proportional to the amount of urinary loss ($p<0.05$), a finding not observed between T concentrations and urinary losses.

Interpretation of results

IU is a common infection in postmenopausal women; however, it is believed to be underdiagnosed, given that many women do not report urine loss, owing to embarrassment or for considering it part of the natural aging process. (1,2).

In our study, it was observed that all the women showed urinary losses during the 1-hour pad test. This examination is a validated and accurate tool for diagnosing and assessing IU (3).

The 1-hour pad test revealed that urinary losses occur irrespective of type of delivery (cesarean section or normal delivery). Corroborating these data, some authors state that elective cesarean surgery is not recommended as a way of preventing IU (4).

Among the risk factors for developing IU are damage to pelvic floor muscles, nerves and fascia during labor. However, there's reports that this damage is not totally understood and that cesarean section does not reduce trauma in the pelvic floor region. Accordingly, there is a need for studies about the influence of pregnancy on this region and consequent emergence of symptoms (5).

The decrease in blood estradiol levels was statistically significant and showed a relationship with urinary loss. In the climacteric period, IU is considered a symptom arising from alterations in female sex steroid levels (1). In the postmenopause, studies aimed at investigating stress urinary incontinence (SUI) show the existence of pelvic floor muscle atrophy and weakness resulting from the decreased amount of estrogen receptors in the perineal muscles (6-8). Brown (2008) describes the action of female sex hormones and the maintenance of pelvic floor muscle functionality, reporting that the influence of estrogen on muscle metabolism was demonstrated in both humans (young women) and experimental studies (rats). These hormones act as perineal muscle protector agents, thereby favoring better performance during endurance activity (9).

Concluding message

The data obtained suggest that the hormonal factor is important in the emergence of urinary incontinence, as well as the existence of a correlation between reduced estrogen and urinary loss in the women studied. On the other hand, type of delivery does not seem to be a predisposing factor for urinary incontinence.

References

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| <i>Specify source of funding or grant</i> | CAPES - Coordination of Improvement of Higher Education Personnel |
| <i>Is this a clinical trial?</i> | No |
| <i>What were the subjects in the study?</i> | HUMAN |
| <i>Was this study approved by an ethics committee?</i> | Yes |
| <i>Specify Name of Ethics Committee</i> | Comitê de Ética em Pesquisa da Universidade Federal do Rio Grande do Norte |
| <i>Was the Declaration of Helsinki followed?</i> | Yes |
| <i>Was informed consent obtained from the patients?</i> | Yes |