

PREVALENCE STUDY OF STRESS URINARY INCONTINENCE AMONG WOMEN ON HIGH IMPACT REGULAR EXERCISES

Introduction: Urinary continence depends on a complex coordination between bladder, urethra, pelvic floor muscles and ligaments, mainly during exercises, when the abdominal pressure rises (1). Intensity and frequency of high impact and repetitive exercises might determine pelvic floor muscles fatigue and as a consequence, urinary incontinence.

Objective: Evaluate the prevalence of stress urinary incontinence among women on high impact regular exercises and woman with no physical activity or low impact exercises.

Material and Methods: 488 healthy nulliparous women 19 to 45 years old were interviewed in Campinas, São Paulo. The study group (SG) included 244 women on high impact regular exercises for at least 4 weeks. Control Group (CG) included 244 women with no physical activity or low impact exercises. All women responded the *International Consultation on Incontinence Questionnaire - Short Form* (ICIQ-SF) for the evaluation of the prevalence of stress urinary incontinence and a specific questionnaire to register the type and frequency of the exercises. All women signed a consent term and data was confidential. For statistical analysis a SPSS program version 17.0 was used.

Results: Mean age was 25, 68 years old ($\pm 5,32$) on SG and 24,45 years old ($\pm 4,97$) on CG. BMI was 22,03 ($\pm 3,21$) on SG and 21,87 ($\pm 2,85$) on CG. The groups were similar in relation to race and number of years at school. ICIQ-SF demonstrated significant difference among the groups ($p=0,009$). In the SG 24.6% referred urine loss, while in CG only 14.8% suffered from stress urinary in continence ($p=0,006$). When asked about urine loss during exercise 5.7% of women in the SG and 0,4% of women on CG referred the symptom ($p= 0,001$). The questionnaire on physical exercises showed that women in SG practiced the exercises for 39,65 months ($\pm 47,08$) with a frequency of 3,74 days per week ($\pm 1,36$). Regarding the type of exercise 40,6% walked, 17,8% were runners, 67,6% did exercises for muscular strength, 29,9% did localized exercises, 35,7 % abdominal exercises, 32,8% "jump", 17,6% "step", 36,5% "bike", 27,9% elongating exercises, 15,2% Pilates, 2,9% exercised on the water, 5,7% swimming and 13,5% other exercises. Among those women 14,3% referred urine loss during exercise and 57,4% urinate before exercise to prevent leakage. Comparing women on the SG who declared no urine loss on ICIQ-SF with those who declared at least one leakage episode, no statistical difference was observed among them regarding the length or frequency of physical activity. Regarding the type of exercise, those who exercised "capoeira", dancing, fights or tennis presented a significantly higher prevalence of urinary leakage ($p<0.001$).

Comments –These study included Young, healthy and nulliparous women, consequently not at risk for urinary incontinence. The inclusion of a control group supports better the results, with few studies in the literature doing so. In a study of elite athletes at the same age (2), the prevalence of urinary incontinence was higher in the elite group. Our study demonstrated a higher prevalence of urinary incontinence among women who were on high impact exercises when compared to those with no exercises or on low impact activities, as walking, swimming or exercising in the water.

Fisher (1999) correlating BMI with stress urinary incontinence states that the effect of weight occurs only when superior to 30. Our study excluded women with BMI above 30. Among women on physical exercises, 14,3 % referred urinary leakage during exercise. A study observes that 54% of elite athletes leaked urine during exercises. Thyssen (3) found that 4% of the athletes leaked urine during exercises stating that "jumping" is the activity more prone to determine leakage. In our study, exercises like "capoeira", dancing, fights or tennis demonstrated o high prevalence of urinary incontinence. The situation of incontinence during exercises leads to preventive urination before exercises, as mentioned by Thyssen. Among the women interviewed in our study, 57.4% used this practice.

Conclusion – This study demonstrated that women who exercise regularly with high impact exercises have a higher prevalence of urinary incontinence, independently of the exercise performed. Low impact exercises seem to offer less risk for stress urinary incontinence. More studies are necessary the study the correlation between high impact exercises and SUI and which mechanism could explain the effect on pelvic structures that lead to urinary incontinence. By doing so, exercises should be oriented adequately to protect pelvic floor muscles.

References

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What were the subjects in the study?	HUMAN
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Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes