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## ASSESSMENT OF PELVIC FLOOR MUSCLES FUNCTION WITH PERFECT AND ORTIZ METHODS: ARE THEY ACTUALLY ABLE TO DETECT DIFFERENCES IN PELVIC FLOOR DYSFUNCTION?

### Hypothesis / aims of study

The objective of this study is to evaluate pelvic floor muscle function (PFMF) using the PERFECT assessment scheme and Ortiz method assessment in postmenopausal women with or without symptoms of pelvic floor disfunction (PFD). Secondly, to assess whether these methods can be correlated with changes in overall quality of life of these women.

### Study design, materials and methods

The research was conducted at the Department of Gynecology of two referral hospitals in the period from October 2011 to July 2013. Women were referred from Primary Care for evaluation in the Urogynecology Department. Only postmenopausal women were included in the study. They were divided in two groups: with complaints of PFD, stress urinary incontinence (SUI) and pelvic organ prolapse (POP) or without (Control group). Women who were taking hormone therapy for the last six months or who had non-inhibited contraction of the detrusor in urodynamic were excluded from the study. The control group was confirmed by clinical history and gynecological examination, all from the general gynecology outpatient clinic. PFMF evaluation were performed by bidigital examination using the classification of Ortiz and schema PERFECT Oxford. PERFECT is an acronym with P representing power (or pressure, a measure of strength using a manometric perineometer), E = endurance, R = repetitions, F = fast contractions, and finally ECT = every contraction timed. Ortiz assessment constitutes the responses obtained by the force of contraction of the perineum in opposition to the fingers of the examiner assigns the degree of force, which can vary from 1 to 4. Data were obtained by means of visual inspection and palpation of voluntary muscle contraction and effective involuntary muscle contraction during coughing (that should prevent the perineum from moving in the caudal direction) and muscle relaxation during straining. The criteria and verbal instructions used were conforming to ICS terminology. Two different physiotherapists performed the vaginal examinations, in different times. Additionally, Medical Outcomes Study 36-item short-form (SF-36) was applied to evaluate the differences in general quality of life between groups and attempt to correlate these differences with changes in PFMF assessed. Statistical analyses were performed with the *Statistical Package Social Science* (SPSS), version 20.0. Sample size calculation was performed to determine the number of women in study and it was established that 96 women would be needed, in each group. Non-parametric Mann-Whitney U, Kruskal-Wallis H test and Spearman correlation coefficient were used to evaluate the statistical significance considering  $p < 0.05$ .

### Results

Were evaluated 233 women with mean age of 58 years ( $\pm 9.0$ years). In the control group there were 96 women against 137 in the PFD group. There was not statistical difference in age, body mass index and income, and they were predominantly in the same economic class. Among those women with PFD, 33.6% had only symptoms of SUI (confirmed by urodynamics), 17.5% had only POP and 48.9% had both disorders. According Pelvic Organ Prolapse with Quantification (POP-Q) 35% of women had prolapse IIBA, followed by 15.3% with prolapse IIBp; 13.9% in IIBa stage, 7.3% in stage IIIC, 4.4% in stage IVC; 3.6% in IIBp stage, 1.5% in stage IV Ba and IVD. We found a general prevalence of stage II prolapse in 51.8%, followed by 24.8% stage III and 7.2% in stage IV. The PFMF evaluation performed using the classification of Ortiz found the same average of  $2.0 \pm 1.1$  for the control group and the group with PFD. The pelvic floor functional evaluation performed by PERFECT assessment scheme had average values with no significant statistical differences for all parameters POWER, ENDURANCE, REPETITION and FAST for the control group and the group with PFD (table 2). Scores of all SF-36 domains were statically different between groups. Women with PFD have a worse general QoL than control group (table 3). However we did not find correlation between SF-36 and the PFMF evaluation performed by PERFECT assessment scheme neither Ortiz.

### Interpretation of results

Our data suggest that the measures of PFMF in postmenopausal women with PFD are no different from women without this condition when used the PERFECT schema or classification of Ortiz. Our finding suggests that these two methods do not have sufficient sensitivity to detect such obvious differences in our postmenopausal population. Despite of many findings in the literature that consolidated these PFMF assessment methods. PERFECT and Ortiz also do not reflect the significative changes in overall quality of life of those women assessed by SF-36 questionnaire. Some peculiar aspects to our population as poor body awareness, low schooling, difficulty understanding and respond appropriately to verbal physiotherapist command can directly influence our results. The fact that they had very low average in PERFECT and in Ortiz scales, for the two groups, confirms this inference.

### Concluding message

Evaluation of PFMF with PERFECT scheme and Ortiz seems to have no sensitivity to detect differences between postmenopausal Brazilian women with PFD those without PFD. These findings generate questions in our population about the validity of these two assessments of PFMF, as often used in clinical trials and especially in everyday physiotherapists.

Table 1- Sociodemographic Characteristics the population postmenopausal women with or without symptoms of PFD (\*Mann-Whitney U)

	<b>Control Group (n: 96)</b> <b>Average + SD</b>	<b>PFD Group (n: 137)</b> <b>Average + SD</b>	<b>p*</b>
<b>Age</b>	55.2 ±6.9	60.9 ±9.6	0.000
<b>BMI</b>	27.3 ± 5.0	28.4 ±4.6	0.023
<b>Pregnancy</b>	3.1 ±2.4	5.5 ±4.1	0.000
<b>Cesarian</b>	0.5 ± 1.0	0.3 ±0.7	0.014
<b>Vaginal delivery</b>	2.8 ±2.3	4.2 ±3.9	0.000
<b>Abortion</b>	0.4 ±0.7	0.7 ±0.9	0.003
<b>Forcipes</b>	0.0 ±0.2	0.2 ±1.1	0.158
<b>Income (\$R - BRL)</b>	1,038.00 ±706.2	1,109.7 ±933.2	0.717
<b>years of study</b>	7.2 ±3.8	5.6 ±3.9	0.004

Table 2- Analyses of PFMF assessment with PERFECT scheme and Ortiz method postmenopausal women with or without symptoms of PFD (\*Mann-Whitney U)

<b>PFMF assessment</b>		<b>Control Group (n: 96)</b> <b>Average + SD</b>	<b>PFD Group (n: 137)</b> <b>Average + SD</b>	<b>p*</b>
<b>PERFECT</b>	<b>POWER</b>	2.0 ±1.2	2.1 ±1.2	0.452
	<b>ENDURANCE</b>	2.5 ±2.2	2.2 ±2.0	0.361
	<b>REPETITION</b>	1.6 ±2.6	1.1 ±2.3	0.149
	<b>FAST</b>	5.5 ±4.2	5.4 ±4.4	0.799
<b>Ortiz</b>		2.0 ±1.1	2.0 ±1.1	0.640

Table 3- Analyses of SF-36 scores postmenopausal women with or without symptoms of PFD (\*Mann-Whitney U)

<b>Variable</b>	<b>Control Group (n: 96)</b> <b>Average + SD</b>	<b>PFD Group (n: 137)</b> <b>Average + SD</b>	<b>p*</b>
<b>Functional Capacity</b>	75.4 ±21.6	51.0 ±24.4	0.000
<b>Physical limitation</b>	65.1 ±40.1	32.7 ±36.8	0.000
<b>Pain</b>	61.2 ±24.2	47.4 ±24.8	0.000
<b>General Health Status</b>	65.9 ±25.0	52.0 ±23.6	0.000
<b>Vitality</b>	61.3 ±22.9	46.7 ±23.3	0.000
<b>Social Aspects</b>	72.3 ±28.3	61.5 ±30.8	0.008
<b>Emotional Aspects</b>	70.8 ±39.3	40.9 ±43.6	0.000
<b>Mental health</b>	65.8 ±22.8	55.9 ±23.6	0.002

#### Disclosures

**Funding:** No disclosure **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Comitê de ética em Pesquisa (CEP) do Hospital geral de Fortaleza e do Hospital Geral César calcs **Helsinki:** Yes **Informed Consent:** Yes