

PELVIC FLOOR MUSCLE TRAINING IN THE TREATMENT OF WOMEN WITH SECONDARY ANORGASMIA: FUNCTIONAL AND ELECTROMYOGRAPHIC VALUATIONS.

Hypothesis/aims of study

Anorgasmia is the lack of sensation of orgasm during sexual intercourse. Considered secondary, when the discomfort sexual begins at a certain time without previous occurrence. Its cause is mainly psychological in origin, but problems physical may also cause, such as, the involvement of muscles that form the pelvic floor, especially of the pubococcygeus, which is considered the responsible for the neuromuscular interaction the orgasm. The aim of this study was to evaluate the effect of a supervised program of pelvic floor muscle training (PFMT), focused for strengthening, on the sexual dysfunction, in particular, on the dysfunction orgasmic, using validated questionnaire and calculated the orgasmic capacity, in groups of women with impairment in pelvic contractility, registered by functional and electromyography assessments of pelvic floor muscles. Also, verifying if there the correlation between the results of the contractility of the pelvic floor, with the sexual function and with the orgasmic capacity of the population studied.

Study design, materials and methods

Twenty patients (mean age: $26,6 \pm 6,1$) were included in clinical, prospective, randomized, controlled and blind study. The protocol for the research project was approved by the Ethics Committee and all patients have signed informed consent. The women were divided into two groups, according to the availability of time, which also would be the programming of individual therapy. Group 1 (G1- morning) were composed of 10 women (mean age: $26,3 \pm 6,1$ years), which performed a kinesitherapy protocol (12 individual sessions of 30 minutes, twice a week). Group 2 (G2 - afternoon) included other 10 women (mean age: $27,0 \pm 6,5$ years), which were assessed concomitantly, but only were treated, with the same protocol, after the end of the comparisons. All of them were fully continent, had impairment in the contractility of the pelvic floor muscles and orgasmic dysfunction. All evaluations were performed by second "blind" physiotherapist, and included pelvic floor functional assessment - AFA (bi-digital vaginal palpation, in degrees) and electromyography - EMG (objective record of electrical potentials generated by depolarization of muscle fibers during voluntary contraction, capitates by endovaginal probe, in microvolts - μV), for the measurement of the contractility the pelvic floor muscles. All patients answered the questionnaires Female Sexual Function Index (FSFI), instrument validated and reliable for the evaluation the women with orgasm dysfunction (1), before the treatment and one week after it ended, and International Consultation on Incontinence Short Form (ICIQ-SF), used to complement the anamnesis, before the treatment. The coefficient of orgasmic capacity (CCO), sum of the number of orgasms achieved with the partner per months with the number of orgasms achieved through masturbation alone per months divided by the number of sexual intercourse per month, was calculated for all patients before and after treatment. Statistical analysis was performed using the Student t test paread and not paread and the Pearson correlation test, both with a significance level of 5%. We calculated also the tendencies among the variables correlated where: $0 < r < 0,3$, weak correlation; $0,3 \leq r < 0,6$, moderate; $0,6 \leq r \leq 1$, strong.

Results

There were no significant differences in demographics between the 2 groups. Women who had carried out PFMT presented significant improvements in the contractility of the pelvic floor assessed by AFA and EMG, of the female sexual function index (score total of the FSFI), of the orgasmic function (domain of the FSFI) and orgasmic capacity (calculation of the CCO) as shown in Table 1. Also, the increased contractility of the pelvic floor muscles obtained positive correlations with improved function and orgasmic capacity. In G1, AFA versus orgasmic function ($p=0,02$) versus orgasmic capacity ($p=0,01$) and EMG versus orgasmic function, ($p=0,02$) versus orgasmic capacity ($p=0,03$). In G2, AFA versus orgasmic function ($p=0,03$) versus orgasmic capacity ($p=0,01$) and EMG versus orgasmic function ($p=0,01$) versus orgasmic capacity ($p=0,02$). The calculation of tendencies between these variables show that in G1 there were strong correlations ($r=0,8$), already in G2, correlations with AFA was moderate ($r=0,4$) and the EMG, strong ($r=0,8$).

Table 1: Evolution of the female sexual function index, of the function and orgasmic capacity and of the muscle contractility, pre and post pelvic floor muscle training.

	G1 n=10 (mean/dp)			G2 n=10 (mean/dp)				
	Pre therapy 1	Post therapy	p	Pre therapy 1	Pre therapy 2	p	Post therapy	p
Score FSFI *	23,2±2,3	27,9±0,8	0,0000009	22,4±3,5	23,2±2,5	0,1	28,7±1,1	0,00001
Orgasmic function **	2,0±0,7	4,8±0,6	0,0000003	2,1±0,5	2,3± 0,4	0,3	4,5±0,4	0,000009
Orgasmic	0,3±0,2	0,8±0,3	0,000003	0,2±0,9	0,3± 0,1	0,2	1,1±0,3	0,00005

capacity ***

AFA	3,2±0,6	4,5±0,5	0,00001	3,5±0,5	3,7±0,4	0,1	4,9±0,1	0,000008
EMG	37,8±10	58,2±8	0,00004	41,6±9,3	43,2±5,5	0,3	61,5±4,3	0,000004

p-value<0,05 (test t paread);

* FSFI ≤ 26,5, index committed, according to the instrument;

** domain orgasm of FSFI ≤ 3, orgasmic dysfunction, according to the instrument;

*** calculation of the CCO: > 1 high capacity orgasmic and < 1 low capacity orgasmic.

Interpretation of results

In general, the number of activated motor units is lower when the strength is low, while the firing frequency of motor units increases in strength levels higher. So it is reasonable to expect that the electrical activity may represent the level of force developed by the muscle (2). In our study this was evident, since in both groups, there were electromyographic signals in pre therapy that have evolved to signals of higher intensity in post therapy. With the women in the group G2 which had no therapy, in the first time, there was no significant increase in muscle activity in their pre therapy 2, as demonstrated in Table 1. Women with orgasmic function adequate have electrical potential, analyzed by EMG, around 120 µV, while the anorgasmia has potential of about 40 µV (3). The current study did not corroborate this data, because in the analysis the G1 was obtained median of 37.8 ± 10 µV and in G2, median of 41, 6 ± 9,3 µV, before therapy, that corresponded to the values low of the function and of the orgasmic capacity, in both groups. After therapy, resulted in electromyography values of 58,2 ± 8 µV for G1 and 61,5 ± 4,3 µV for G2 that were positively correlated with improves of the function and orgasmic capacity (p<0,05), of these groups. In the assessing the contractility of the pelvic floor muscles by AFA, in our study, were obtained significant gains after training (in G1 of 3,2 ± 0,6 for 4,5 ± 0,4, p= 0,00001 and G2 of 3,5 ± 0,5 for 4,9 ± 0,1, p= 0,000008), values that correlated positively with improved of the function and orgasmic capacity (p<0,05). These results confirm the electromyographic findings of our study and provide further evidence that the increased contractility in the pelvic floor muscles is positively correlated with improved function and orgasmic capacity in the population studied. To date, there are no studies that correlate these variables with sexual dysfunction.

Concluding message

The pelvic floor muscle training is an effective therapy in the treatment of women with secondary anorgasmia. This study showed significant improvement in muscle contractility of the pelvic floor, in sexual function and in orgasmic capacity, after strengthening these muscles. The result of an increase in contractility of the pelvic floor muscles was positively correlated with the concomitant improvements in sexual function and orgasmic capacity of the population studied.

References

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Is this a Randomised Controlled Trial (RCT)?	Yes
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Specify Name of Ethics Committee	Comitê de Ética em Pesquisa da Pontifícia Universidade Católica de Minas Gerais - PUC/Minas, Brasil
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes