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WHICH OF THE RECUMBENT POSITIONS PROMOVES BETTER PELVIC FLOOR MUSCLE RELAXATION?

Hypothesis / aims of study

To evaluate the myoelectrical activity of the pelvic floor muscle resting tone in different recumbent positions.

Study design, materials and methods

Observational study with 29 women consecutively included. Inclusion criteria was the ability to adopt the proposed postures and didn´t complaint of any pelvic floor dysfunction . Exclusion criteria was women with pathologies that could interfere on pelvic floor function such as neuromuscular degeneration, and previous urogynaecology surgery. For electromyographic evaluating, it was used the equipment EMG System of Brazil® model 400C with eight-channels. The vaginal probe with two opposing parts of metal (Chatanooga Group ®), responsible for obtaining the myoelectrical signal, was introduced by the physiotherapist in the middle third of the vaginal canal with KY lubricating gel (Johnson's & Johnson's). After the probe was positioned with metal parts placed in contact with vagina side walls (lateral-laterally position), subjects were instructed to adopt the lithotomy position. On the second part of the evaluation, subjects were instructed to adopt supine position with feet supported on the bed (supine position). On third evaluation part, subjects were instructed to adopt lateral position recumbent (lateral position). In each positions adopted, the subjects were instructed to relax pelvic floor muscles and the myoelectrical activity were then registered for data analysis.
After measuring of pelvic floor rest myoelectrical activity, were evaluated 5 seconds of that activity using the software EMGLab, with subsequent analysis of Root-mean-square (RMS). For statistical analysis the SPSS (Statistical Package for Social Sciences) version 17® was used, and to analyse the possible differences in MVC between positions the Wilcoxon Test and Pós Bonferroni test were used with a significance level of 5% (0.05).

Results

The 29 women enrolled in study were 28.1 (±6.7) years old with a body mass index (BMI) of 23.86 (±3.5) kg/m^2.
The lateral position presented a significantly greater myoelectrical signal of pelvic floor resting tone (Table 1 and Table 2).

Table1- Resting tone of pelvic floor muscles in different recumbent positions.

Positions (µV)	n	Min.	Max.	Mean	Standard Deviation	Median	P-Value*
Lithotomy	29	9,40	43,10	25,11	10,77	22,50	
Lateral	29	10,30	65,30	31,02	11,85	32,10	0,01
Supine	29	7,80	43,10	21,44	10,76	18,10	

*Wilcoxon Test

Table 2- Comparison of the electrical signal of resting tone in different positions.

Pairs	P- Value*
Lateral - Lithotomy	0,01
Supine- Lithotomy	0,1
Supine- Lateral	0,001

*($alfa_{BONFERRONI}$ = 0,050/6 = 0,008)

Interpretation of results

Women should be encouraged to give birth in the position they find most comfortable. Until such time as the benefits and risks of various delivery positions are not well documented, women should be allowed to make informed choices about the birth positions in which they might wish to assume for delivery of their babies[1].
The supine position for birth is widely used in contemporary obstetric practice. The main advantage cited is easy access of the caregiver to the woman's abdomen to monitor the fetal heart rate. Caregivers are comfortable with the dorsal position as it is the position in which they have usually been trained to conduct deliveries, including assisted vaginal deliveries, and is the conventional reference position for textbook descriptions of the mechanisms of vaginal delivery. The lithotomy position with the woman's legs fixed in stirrups is used in many institutions both for spontaneous and particularly for assisted vaginal deliveries. The lateral recumbent position is also used for both spontaneous and assisted deliveries, with the advantage of avoiding uterine compression of the aorta and/or the inferior vena cava[1].

Currently, surface electromyography (EMG) is being used as a differential method for assessing pelvic floor muscles (PFM). This tool captures the electrical activity of skeletal muscles and voluntary responses to reflex contraction via surface electrodes or vaginal probes[2].
Our results showed that supine position presented greater relaxation of the pelvic floor muscles. But, the parturient comfort should be respected during childbirth.
We suggest more studies involving positions during pregnancy period, which could present different results.

Concluding message

Eletromyographic evaluation showed that supine position presents greater relaxation of the pelvic floor muscles.

References

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