

Pelvic Physical Therapy Distance Journal Club

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Pelvic floor physical therapy for pelvic floor hypertonicity: a systematic review of treatment efficacy. Van Reijn-Baggen DA, Han-Guerts IJM, Voorham-van der Zalm PJ, et al. Sexual Medicine Reviews 2022; 10: 209-230. Doi: 10.1016/j.sxmr.2021.03.002.

Introduction: 2022 still using incorrect terminology ☹ Many assumptions as to cause of increased PFM tone and the aim of Pelvic floor PT.

Primary Aim: Appraise the current literature on the efficacy of Pelvic floor PT on increased PFM tone

Study Format: Systematic review of studies published between 2000 and 2019 using Pelvic floor PT to treat increased PFM tone.

Methods:

- 10 studies met inclusion criterion 4 RCT, 1 case study, 5 prospective cohorts, Including females with PVD and IC/PBS, males with CP/CPPS.
- Table one (pg 211) lists outcomes: 22 questionnaires, 6 palpation, rest sEMG, vulvalgesiometer (pressure pain threshold).
- Table 2 - Increased PFM tone was assessed by palpation or un-normalized sEMG in 4 studies
- Can you say you are treating increased PFM tone if you did not measure it?
- Can you say PT had an effect on tone if the only outcome is a questionnaire or a measure of pain?
- What does the diagnosis pelvic floor hypertonicity mean? Increased tone, pain, decreased function
- Should the name of the paper be “Pelvic floor PT for CPP: a systematic review of treatment efficacy”?
- See below for more studies on this topic

PFM resting tone and function – page 225

Ref 48 Schvartzman (medium quality)	RCT / dyspareunia	No significant decreased resting sEMG	Biofeedback, hold / relax, PFM MFR, infrared thermotherapy	Sig decrease dyspareunia
Ref 44 Cornel (low quality)	Prospective / CP/CPPS	Significant decrease resting sEMG	Biofeedback training, hold / relax, bladder training	Significant decrease pain
Ref 45 Gentilcore-Saulnier (low quality) (Worman SR lists as convincing)	Prospective / PVD	No significant change in resting sEMG palpation: decreased tone, increased flexibility, increased ability to relax	Biofeedback training, dilators, EGS	Sig decrease pain on vulvalgesiometer
Ref 50 Oyama (low quality)	Prospective/ IC	Sig improvement in PFM tone using Modified Oxford tone scale	PFM massage	Sig decrease pain

Discussion:

Caution in interpreting sEMG due to great variability – which is solved with normalization (see below)

Use sEMG in conjunction with other muscle resting tone measures

Conclusion: The review suggested Pelvic floor PT can be beneficial “for CPP”. More good research needed

Clinical application:

- We do not have causality studies - does pain causes increased tone or increased tone causes pain.
- What is the interaction between tone, pain, and function?
- We need to use valid and reliable tone measurements - palpation and investigations (sEMG and others)
- We should be considering tone, pain, and function separately in assessment, diagnosis, and treatment

Evidence for Treatment of Pelvic Pain

Clinical Guidelines on chronic pelvic pain (EAU) (Engeler, 2010)

- Prostate pain - grade B second line treatments - biofeedback, relaxation, lifestyle changes, massage
- IC / BPS - grade B - bladder training, manual and physical therapy
- CPP - grade A - relaxation training with or without biofeedback, physical therapy, multi-disciplinary team approach
- PFM dysfunction - grade A - overactive PFM use biofeedback adjuvant to muscle exercises, pressure or needling recommended for myofascial trigger points
- PFM dysfunction - grade B - PFM treatment is first line treatment in CPPS

Systematic review of physiotherapy treatment for female CPP (Loving 2012)

- 10 studies – 6 RCT, 1 cohort, 3 case series
- Included studies of bladder pain syndrome but excluded endometriosis and vulvodynia
- Heterogeneity (participants, interventions, outcomes) prevented meta-analysis
- Unable to report value of PT as a stand-alone intervention
- Some evidence to support the effect of multi-disciplinary interventions and Mensendieck therapy (a hybrid of PT and cognitive behavioral therapy)
- Primary outcome based on pain reduction – this may not be the best measure of change in patients with chronic pain of any type

Systematic review of therapies for noncyclic CPP in women (Yunker 2012)

- 17 non surgical, 7 surgical studies
- Insufficient evidence to conclude that one surgical technique is better
- 2 studies of poor quality compared surgical to non surgical treatments (including PT) - no significant difference between the groups
- Poor quality study compared PT to counseling and found significant benefit for PT
- “Management of pelvic pain is most effective when a multidisciplinary team of physician, physical therapist, and psychologist is concurrently involved in patient treatment from the outset.” RCT (Peters 1991)
- Conclusion – not enough evidence to know which treatments work.

Cochrane Review Non-surgical interventions for the management of CPP (Cheong 2014)

- 13 studies included
- Most on medication and psychological treatment
- Some evidence that "distention therapy" (Intra-rectal stretching of PFM and sacrotuberous ligament) significantly decreased VAS and pain during intercourse (Heyman 2006)
- Multidisciplinary team approach recommended

Systematic review and meta-analysis of treatment for CP/CPPS (Cohen 2012)

- 35 articles
- Significant placebo effect for all outcomes
- In some cases the placebo effect was higher for control group than treatment group which blunts treatment effect.
- Efficacy of treatment for all modalities increased over time - should have at least 32 weeks of treatment to see effect
- Some evidence of improvement of symptoms over time without treatment " prostatitis burning itself out".

References

Cheong YC, et al. Non-surgical interventions in the management of chronic pelvic pain. Cochrane review 2014.

Cohen JM, et al. Therapeutic intervention for chronic prostatitis / chronic pelvic pain syndrome (CP/CPPS): a systematic review and meta-analysis. PLoS One 7(8):e41941.

Engeler D, et al Guidelines on chronic pelvic pain Eur Urol 2010;57(1):35-48

Loving S, Nordling J, Jaszczak P, Thomsen T. Does evidence support physiotherapy management of adult female chronic pelvic pain? A systematic review. Scand J of Pain 2012;3:70-81.

Yunker A, et al. Systematic review of therapies for noncyclic chronic pelvic pain in women. Ob and Gyn Survey. 2012;67(7):417-425.

Normalization

Halaki M, Ginn K. Normalization of EMG Signals: To Normalize or Not to Normalize and What to Normalize to? Chapter 7 in Computational Intelligence in Electromyography Analysis – A Perspective on Current Applications and Future Challenges. 2012.

OK not to normalize

- Assessment of recruitment and de recruitment time
- “Amplitude comparisons of signals from a given muscle between short term interventions/movements within an individual in the same session under the same experimental conditions without changes to the EMG electrode set-up” for example 5 second hold compared to 10 second hold or supine versus standing ON THE SAME DAY!!

Must normalize

- Comparing PFM activity in the same patient on different days
- Comparing the PFM activity in different individuals

There are several methods and each has plus and minus, some machines calculate it for you (Noraxon)

- “The most common method of normalizing EMG signals from a given muscle uses to the EMG recorded from the same muscle during a maximal voluntary isometric contraction (MVIC) as the reference value”
- Assuming the patient can generate MVIC (there are alternatives if this is not possible)
- How to calculate MVIC – 3 reps of # seconds hold with adequate rest between (30 second to 2 minutes). Max value during all reps is the reference value.
- “Normalization of EMG signals is usually performed by dividing the EMG signals during a task by a reference EMG value (MVIC) obtained from the same muscle.”
 - $\text{Task EMG value} / \text{reference EMG value} = \text{normalized value}$
 - 10 second hold on Jan 3 - 5 uV / MVIC - 15 uV = .33
 - 10 second hold on Feb 13 – 10 uV / 15 uV = .66