How to effectively manage chronic pelvic pain syndrome in cis-gender men presenting to sexual health services using a holistic biopsychosocial approach

Paddy J Horner ,[1,2] Megan Crofts ,[2] Jessica Butterly[3]

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[1]Population Health Sciences, Bristol Medical School, University of Bristol, Bristol, UK
[2]Unity Sexual Health, University Hospitals Bristol and Weston NHS Foundation Trust, Bristol, UK
[3]Physiotherapy Department, St Michael's Hospital, University Hospitals Bristol and Weston NHS Foundation Trust, Bristol, UK

Correspondence to
Dr Paddy J Horner, Population Health Sciences, Bristol Medical School, Bristol, BS8 1QU, UK; paddy.horner@bristol.ac.uk

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BACKGROUND

Chronic pelvic pain syndrome (CPPS) in men is an important, but uncommon, multifactorial condition managed in specialist sexual health services (SSHS) which can have a significant impact on a patients' quality of life.[1–3] CPPS is part of the chronic prostatitis/CPPS symptom complex with a prevalence of 8.2% (range 2.2%–9.7%).[2,A1] CPPS is defined as pelvic pain, often associated with urinary symptoms and/or sexual dysfunction, lasting for at least 3 of the previous 6 months and is a diagnosis of exclusion.[1 2] Due to the nature of CPPS pain, including dysuria, penile tip, perineal, testicular and ejaculatory pain, as well as other commonly associated symptoms such as urinary frequency, patients often present to SSHS.[3] Clinically, it presents as either a complication in men treated for acute non-gonococcal urethritis (NGU) or as persistent pelvic pain in the absence of urethritis. An infective aetiology is uncommon as per current British Association for Sexual Health and HIV (BASHH) NGU guidelines.[A2]

The aetiology is complex and a wide range of underlying causes of CPPS have been proposed including inflammation, neurological damage, the lower urinary tract microbiome and increased pelvic floor tone.[2 4–6, A3] Pelvic floor/prostate tenderness is common (50%–90%) in men with CPPS but depends on the population studied.[3 7, A3–A6] Some men may subconsciously tense their pelvic floor muscles when stressed.[1 3] It is likely that pain from increased pelvic floor muscle tone and/or intraprostatic urinary reflux can be experienced as referred pain throughout the pelvis.[1 3 4] Underlying anxiety about the cause of pain may worsen symptoms further. This can create a positive feedback loop in susceptible men, with anxiety about their CPPS leading to increasing symptoms, which then further increases their anxiety.[1 3 5]

A range of treatment options, which usually include alpha blockers and/or antibiotics, are available which are often of limited benefit individually and more effective (as evaluated by patients) when combined as part of multimodal therapy.[2 3 6, A4 A5 A7] Although antibiotics have been shown to be of help in men with CPPS and are recommended in the early stages, the evidence is weak and the mechanism of action is unclear.[2 6, A7] Nickel *et al*[8] proposed that the traditional pharmacotherapeutic approach to managing patients would be enhanced by addition of a biopsychosocial approach tailored to an individual's presenting symptoms. PJH and MC in conjunction with JB updated the effective holistic biopsychosocial approach developed by PJH, published in 2014.[3 9 10] This reduced the use of antibiotics with a greater focus on pelvic floor relaxation with referral for pelvic floor physiotherapy if required with similar outcomes to our previous evaluations.[7] This is available at e-learning for Healthcare (eLfH) for NHS sexual health clinicians with an overview published in *Medicine*.[1, A8] This paper updates our previous 'How to…' article providing guidance on how to effectively engage patients with CPPS to take ownership of how they can reduce their pelvic floor tone and, thus, their pain.[3]

CPPS CLINIC REFERRAL CRITERIA AND PRE-REFERRAL MANAGEMENT

Men with persistent lower genital tract symptoms and/or pelvic pain despite investigation, diagnosis and/or treatment of NGU,[A2] in whom *Mycoplasma genitalium* (Mgen) has been excluded [A2 A9 A10] should be referred to a dedicated CPPS clinic (online supplemental appendix 1 figure 1). The potential role of anxiety and pelvic floor muscle tone should be briefly discussed (see below) prior to referral, supported with a more detailed explanatory CPPS leaflet (online supplemental appendix 2).

MANAGING PATIENTS WITH CHRONIC PELVIC PAIN

The first consultation

At first visit, an in-depth review of symptoms is vital.

- Review of symptoms, including a detailed history of any urinary voiding problems.
- Any precipitating factors to symptoms.
- Any relieving factors, including any therapeutic interventions.
- Past medical, sexual, drug and social history including details of their support network should also be recorded.
- Specific anxieties or concerns, including persistent unidentified infection, cancer or infertility.
- Detailed explanation of how increased pelvic floor tone can cause referred pain elsewhere in the pelvis and affect urinary flow and cause dysuria and pain on ejaculation (see below).

This requires an 'active' listening technique and an ability to empathise with the patient's often-manifest distress. Finally, one should enquire as to whether they have the ability to focus on solving problems for longer than the majority of their peers

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but with a tendency for circular trains of thought to occur if no solution is evident—'driven problem-solver' and/or they have an anxious persona as, in our experience, both personas are associated with CPPS secondary to increased pelvic floor tone. If the patient is a problem-solver, this should be acknowledged as a positive characteristic which can sometimes have a negative impact when no solution to the problem can be found.[3] This helps the patient to actively engage with the detailed explanation about the likely cause of their symptoms as detailed below and what they can do to make their symptoms better.

Patients should also complete the National Institutes of Health – Chronic Prostatitis Symptom Index score (NIH-CPSI) (online supplemental appendix 1, figure 2) to evaluate their symptoms, which should be undertaken at each subsequent visit.[A11] This allows objective assessment of the severity of their symptoms and evaluation of their response to therapy.[6 7 9 10]

Examination should include:

- Lower abdominal region and hernial orifices.
- Genital examination including testicles, penis and perineum.
- Digital rectal examination (DRE) to assess pelvic floor muscle tone and tenderness, prostate size, shape and tenderness.

Investigation should include:

- Urethral smear.[A2]
- Repeat chlamydia nucleic acid amplification test (NAAT) if initially chlamydia NAAT-positive and >5 weeks post treatment.[A2]
- Test for Mgen and possibly trichomoniasis using a NAAT if urethritis is detected and if not already undertaken.[A2 A9 A12]
- We have not found the four glass urine test of clinical value if there is no evidence of urinary tract infection (UTI).[2]

Management

The primary aim is to exclude all potential and treatable causes and in so doing address the patients underlying anxieties which often centre on unknown (potentially transmissible) infection or cancer. The goal is not to cure the patient but to improve their symptoms so that they become manageable—it is important to be realistic. In our experience, patients understand that most people have intermittent aches or pains.

The basic pelvic floor anatomy should be discussed using online supplemental appendix 1 figure 3 in conjunction with its innervation using online supplemental appendix 1, figure 4 and introducing the concept of referred pain using the analogy of angina and/or having a heart attack (online supplemental appendix 1, figure 4). The analogy with the heart and how pain can be experienced (referred) elsewhere is very helpful for patients in enabling them to understand and accept that referred pain is 'real' and is not psychological. There should then be a discussion about how increased pelvic tone can result in (1) back flow/pressure of urine (and/or semen during ejaculation) into the prostate, resulting in referred pelvic pain and may cause non-infective prostatitis which may explain why some men with CPPS have urethritis detectable on urethral smear; (2) muscle spasm resulting in referred pain experienced elsewhere in the pelvic area, for example, tip of the penis, testicles, perineum (area behind the testicles), lower abdomen and may also cause difficulties/pain when passing water and ejaculating.[1 3 4]

The increased pelvic floor tone often arises as a result of anxiety which can unconsciously cause some men to increase their pelvic floor muscle tone (they do not realise they are doing this as normally we cannot 'feel' our pelvic floor). The CPPS reinforcement feedback loop[A8] detailed in online supplemental appendix 2, figure 2 is a helpful visual educational tool for explaining this. It should be explained that often the precipitating factor has resolved, as indicated by the history and/or specific investigations which are/have been carried out and/or treatment given. As the men are not aware that they are tensing their pelvic floor, the symptoms they experience are attributed to disease in those parts of the pelvis where they are experiencing the pain. This often exacerbates their anxiety, particularly if no cause can be found, further increasing their pelvic floor tone and therefore their symptoms. Conversely, when they are relaxed and not thinking about their symptoms the pain is much improved. Patients often describe good and bad 'days' which patients on gentle prompting often map to being on holiday (low stress) or stressful situations respectively. This facilitates patients (1) accepting the above concept as the cause of their pain in the absence of no other causes being identified; (2) taking ownership of the central role they need to play in reducing their symptoms.

The majority (>90%) of men at Unity have increased pelvic floor tone[7] and pelvic floor relaxation through relaxation exercises with or without the use of an alpha blocker[2] with identification and discussion about reducing stressors[3 8] and the biological principles and evidence informing their use is the main stay treatment.[1] The observation of a tense and tender/painful pelvic floor on DRE in the absence of other causes in our experience is important in getting the patient to accept that this may indeed be the cause of their symptoms. A leaflet on pelvic floor relaxation should be provided and discussed (online supplemental appendix 3) and advice about distraction techniques when the pain is present. Mindfulness may also have a role here.[2] In our experience, exercise can be an effective distraction technique and may have other beneficial properties.[A13 A14] Accurate and concise written information in the form of a patient leaflet, with online resources and references should also be provided (online supplemental appendices 2 and 3).

The role of the urethral smear for detecting urethritis in the absence of chlamydia, gonorrhoea, Mgen and trichomonas is to guide treatment strategies. Antibiotics have been demonstrated to be of benefit in men with CPPS but the mechanism is unclear in the absence of infection.[2 6, A13 A14] Possible aetiologies of urethritis include intra-prostatic urinary reflux[4] or a proinflammatory urethral mucosa secondary to persistent epithelial to mesenchymal transition as a result of epigenetic changes following chlamydia infection.[A15–A17] Macrolides have an anti-inflammatory immunomodulatory action and 3 weeks of a macrolide have been demonstrated to be effective in chronic NGU and CPPS.[3, A18 A19] With the increasing focus on antimicrobial stewardship,[A20] we now restrict the use of clarithromycin 500 mg twice daily for 3 weeks to men with infection-negative urethritis. The proposed mechanism of action should be discussed with the patient.

In our experience men can be divided into four broad categories based on the initial clinical findings.

- Category 1. Increased pelvic floor tone and/or tender; urethral smear-positive.
- Category 2. Increased pelvic floor tone and/or tender; urethral smear-negative.
- Category 3. Pelvic floor tone normal and not tender; urethral smear-positive.
- Category 4. Pelvic floor tone normal and not tender; urethral smear-negative.

See figure 1 for management pathways. Many patients improve after the first session which, in our experience, is associated with a good understanding of the underlying mechanism with subconscious tensing of the pelvic floor resulting in a positive feedback loop (see above). MC now undertakes first follow-up

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Referral to CPPS clinic

All patients:

- Undertake a CPPS-directed history
- Complete NIH-CPSI score
- Establish a positive therapeutic relationship using active listening skills and empathy
- Determine personality trait: obsessive traits should be discussed in a positive light i.e. a problem-solver who is driven
- Genital and lower abdomen examination, urethral smear and digital rectal examination (DRE) for pelvic floor tone and prostate assessment
- Ensure a UTI has been excluded; consider testicular ultrasound and prostatic specific antigen (PSA) if clinically indicated [1,2,A8]
- Address anxieties around infection, cancer and infertility
- Discuss how increased pelvic floor tone can cause referred pain, urinary flow dysfunction, dysuria, pain on ejaculation and possible role of anxiety perpetuating symptoms (see main text)
- Go through leaflets on CPPS and pelvic floor relaxation exercises (Appendices 2 and 3)
- Discuss support and coping strategies

Pelvic floor tone increased +/- tender

Pelvic floor tone not increased

Urethritis present

1. Has BASHH NGU guideline been followed?

Ensure:

- *M. genitalium NAAT* testing has been undertaken and if positive follow BASHH guideline

Consider:

- Re-infection - efficacy of partner notification and sex during treatment – is patient worried about re-infection?
- Treatment adherence
- Trichomonas NAAT testing if prevalent in local population.

Discuss

- Feedback loop, pelvic floor tone and referred pain/symptoms
- Non-infective causes of urethritis including urinary Intra-prostatic reflux. Mechanism of action macrolides

Explore

- Stresses in patients' life and explore potential ways to reduce these.

Rx. Pelvic floor relaxation advice Clarithromycin 500mgs BD 3/52 plus +/- Alpha blocker e.g. Tamsulosin 400 mcg OD

No urethritis present

2. Is a STI still a concern?

Yes

- Has an early morning smear been undertaken?
- Are they worried about re-infection from an untreated partner

Discuss

- Feedback loop etc see 1.

Explore

- Stresses etc see 1.

Rx. Pelvic floor relaxation advice. +/-Alpha blocker e.g. Tamsulosin 400 mcg OD

Urethritis present

3. Is a STI still a concern?

Yes

- See 1. “Ensure” and “Consider”

Pelvic floor dysfunction less likely to be causal. Is his personality trait consistent with pelvic floor tone being potentially causal? Are his symptoms consistent with increased pelvic floor tone?

Discuss

- See 2.

Explore

- See 2.

Rx. Pelvic floor relaxation advice. Rx. Clarithromycin 500mg BD 3/52 +/- Alpha blocker e.g. Tamsulosin 400 mcg OD

No urethritis present

4. Is a STI still a concern?

Yes

- See 2.

Pelvic floor dysfunction less likely to be causal. Is his personality trait consistent with pelvic floor tone being potentially causal? Are his symptoms consistent with increased pelvic floor tone?

Discuss

- See 2.

Explore

- See 2.

Rx. Pelvic floor relaxation advice. +/- Alpha blocker e.g. Tamsulosin 400 mcg OD

- Further treatment should be based on response to initial therapy – use NIH-CPSI to monitor.
- If poor response:
- has the patient understood how increased pelvic floor tone can cause symptoms, how to undertake pelvic floor relaxation exercises properly? Is this the diagnosis correct?
- Consider additional treatment options e.g. low dose amitriptyline and or referral to pain clinic; if no urethritis present initially and not previously received antibiotics consider trial of clarithromycin 500mgs BD 3/52. [1,2,3,A8]
- Remember to consider the effect of symptoms and how patient is interpreting them, upon their intimate relationship with their partner(s) and ensure these have been addressed.
- If urinary symptoms persist or there is evidence of persistent bladder outflow obstruction unresponsive to above interventions or bladder pathology consider urinary flow studies +/- imaging with referral to Urology depending on the results.[1,3,10,A8,A12]
- For men with refractory pain despite the aforementioned, referral to a pain clinic may be of benefit. [1,2,3,A8]

Figure 1 Structured management approach to men attending a chronic pelvic pain syndrome (CPPS) clinic. NAAT, nucleic acid amplification test; NIH-CPSI, National Institutes of Health – Chronic Prostatitis Symptom Index score; NGU, non-gonococcal urethritis.

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consultation at 6 weeks by telephone for many patients, if clinically appropriate, due to the high success rate of the initial consultation.[7]

For those with a poor response, as judged by the NIH-CPSI score[A11] (figure 1), having reviewed the diagnosis to ensure other causes have been excluded, it is important to check they understand (1) that there is no evidence of other pathology, (2) the underlying principles of why pelvic floor relaxation is likely to be of benefit and (3) how to correctly relax their pelvic floor muscles. Are there complicating factors in the persons' persona, social history and/or medical history which may be contributing to their increased pelvic floor tension and lack of response? Can these be addressed more effectively? Consider additional pharmacological treatment options, see figure 1.[1–3, A8] Referral for pelvic floor physiotherapy should also be considered, as some patients have difficulty with undertaking pelvic floor relaxation exercises and benefit from specialist input. Further follow-up whether by telephone or in clinic is dependent on the clinical assessment and patient discussion at the first follow-up appointment.

CONCLUSION

Male patients with CPPS attending SSHS can be effectively managed using a structured biopsychosocial, holistic management strategy incorporating a detailed explanation of why their symptoms are occurring and how stress/anxiety can exacerbate these, pelvic floor relaxation exercises and evidence-based pharmacotherapy.

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ORCID iDs
Paddy J Horner http://orcid.org/0000-0003-0411-8332
Megan Crofts http://orcid.org/0000-0003-0411-8332

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