

Chronic Pelvic Pain: How effective are current diagnostic and treatment guidelines in the field of chronic pelvic pain?

Introduction

Chronic pelvic pain (CPP) , as defined by the Royal College of Obstetrics and Gynaecology (RCOG), is pain in the lower region of the abdomen or pelvis, lasting greater than six months (1). CPP affects one in six women in the UK, and is a common presentation in primary care (1). Being a complex condition, a broad range of biological, psychological and social risk factors are implicated. Symptoms can be debilitating, resulting in withdrawal from work, sexual dysfunction, psychosomatic symptoms and a greatly reduced quality of life [QofL] (2). Furthermore, inappropriate or narrow unimodal treatment approaches can lead to prolonged suffering, increased frequency of appointments , unnecessary surgical interventions and greater strain on healthcare services (3, 4). CPP should therefore be management by a multidisciplinary team (MDT) with the shared goal of providing holistic, ongoing care.

The aetiology of CPP is broad. Biological causes include pelvic inflammatory disease (PID), endometriosis, adhesions, uterine abnormalities and chronic inflammation (5). Psychological and social factors are extensive, including co-morbid depression and anxiety, prior traumatic childbirth and comorbid pain disorders (6, 7). Figure one displays a wide range of CPP-related symptoms and categorises those broadly by underlying pathology. Yet, there is widespread overlap and many of the more generalised symptoms can also be identified in other chronic pain syndromes, such as fibromyalgia and chronic back pain (8, 9).

Diagnosis is frequently delayed, with individuals describing the process as distressing and drawn-out (10). An empathetic approach from the investigating clinician is key for effective long-term management, in addition to early involvement from the MDT (11). Often, a specific underlying pathology is not found despite diagnostic testing (12). Diagnosis is further complicated by the broad spectrum of symptoms caused by multiple pelvic organs, including the uterus, bladder, pelvic floor and rectum (13).

There are currently two sets of guidelines laying out a framework for diagnosis and management of CPP in the UK and Europe. The first being the RCOG's, 'Initial management of chronic pelvic pain', which lays out a basis for diagnosis and treatment of individual pathologies which causing CPP (1). The second major guideline was developed by the European association of Urology (EAU) 'Guidelines on chronic pelvic pain', providing a broader scope on the multiple causes of CPP in both males and females, with consideration of a wider range of treatment options (14). Both sets of guidelines were published in 2012. Throughout this essay these two guidelines will be referenced in relation to current diagnostic and treatment recommendations. The National Institute for Health and Care Excellence (NICE) guidelines in the UK are more broadly based upon treatment of other chronic pain

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syndromes. For instance, NICE guidelines currently refer to generic chronic pain syndromes for those over sixteen years of age, only providing CPP guidelines in the context of endometriosis (15, 16).

| Pathology | Predominant symptoms | Overlap conditions |
|----------------------------------|---|--|
| Irritable Bowel syndrome | <ul style="list-style-type: none"> Tenesmus Abdominal/pelvic pain Chronic headaches Constipation/diarrhoea Bloating | <ul style="list-style-type: none"> Endometriosis PCS |
| Adenomyosis | <ul style="list-style-type: none"> Pelvic pain (predominantly cyclical) Dysmenorrhoea Menorrhagia Backache Dyspareunia | <ul style="list-style-type: none"> Endometriosis Primary CPP PID PCS |
| Pelvic congestion syndrome (PCS) | <ul style="list-style-type: none"> Dyspareunia Bloating Dull/aching pelvic pain exacerbated by long periods of standing, walking or sitting | <ul style="list-style-type: none"> IBS MSK-related CPP Adenomyosis Primary CPP |
| Pelvic inflammatory disease | <ul style="list-style-type: none"> Sudden onset pelvic/lower abdominal pain PV discharge Pyrexia Liver capsule pain (uncommon) | <ul style="list-style-type: none"> Endometriosis Primary CPP Adenomyosis IBS |
| Endometriosis | <ul style="list-style-type: none"> Pelvic pain Dyspareunia Abnormal PV bleeding Menorrhagia Extra-peritoneal symptoms (lungs, eyes, rectum bleeding) | <ul style="list-style-type: none"> Adenomyosis Endometriosis |
| Musculoskeletal-related CPP | <ul style="list-style-type: none"> Pelvic spasm Pelvic pain worse on sitting or lying down Dyspareunia Lower back pain | <ul style="list-style-type: none"> IBS PCS |

Figure one: Table adapted from multiple sources, demonstrating the symptoms of chronic pelvic pain categorised by pathology (see Reference section for individual references).

Treatment of underlying cause is important; however it has been shown that holistic management of patients with CPP have far better outcomes than those treated only with biological-medical interventions for a single condition (17). In more recent years, guidelines have moved away from the biological, single organ approach, and embraced a more multifaceted treatment path. However, current evidence suggests fully holistic treatment guidelines have not yet been achieved (1, 14, 15).

This essay will outline the prevalence, aetiology and symptoms associated with CPP and consider the effectiveness of current diagnostic methods. The main aim of this essay is to assess how effective current treatments are in managing CPP.

Prevalence and aetiology

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A population based study by Ayorinde et al found 14.8% of women over the age of 25 years had CPP (18). CPP was more likely to be experienced by women of childbearing age, and interestingly, by those with university degrees or other higher education qualifications (12, 18). Although prevalence varies by country around the world, this essay focuses on CPP in the UK, USA and Europe.

Pathological conditions causing CPP include endometriosis, interstitial cystitis, PID, pelvic adhesions, musculoskeletal disorders and irritable bowel syndrome (IBS) (5, 19). A study conducted by Shoukat et al found that the two most common identifiable pathologies causing CPP were endometriosis, followed by adenomyosis (13). However, more psycho-social factors tie into the aetiology of CPP, including post-traumatic stress disorder, depressive disorders and prior adult or childhood sexual trauma (6, 20). The long term pathology of CPP is complex, and suggested to be influenced by biological factors persisting after acute injury, such as the immune system, type-C nervous fibres (implicated in delayed secondary pain) and ascending and descending pain pathways (21, 22). Often, more than one underlying cause of CPP is implicated.

Diagnostic methods:

The RCOG guidelines suggest diagnosis starts at initial appointment, in which women are able to describe their symptoms in length and voice concerns (1). An empathetic clinician is essential, and it has been demonstrated that when a clinician listens and responds to concerns, efficacy of diagnosis and treatment is greater (23). This aspect of diagnosis should not be overlooked, and with an in-depth clinical assessment and examination, unnecessary and uncomfortable investigations can be avoided. The EAU highlights the importance of assessing concerns at first appointment, as underlying beliefs about symptom causation can be approached with either reassurance or further investigation (14).

A thorough history may be sufficient to diagnose an underlying cause, such as IBS. Pain diaries may also be useful in identifying patterns which align with specific conditions (1). The EAU also stresses the importance of assessing psychological distress and mood disorders in the initial consultation, in order to ascertain how pain is affecting day to day life (14).

Further examinations include abdominal and pelvic examination. This may be followed by swabs for sexually transmitted infections if appropriate. The effectiveness of scans in the field of CPP varies according to pathology. Transvaginal ultrasound, transabdominal ultrasound and MRI may be used where appropriate, and can be effective in reducing the need for diagnostic laparoscopy if conditions such as endometriosis or adenomyosis are suspected (24). Furthermore, when

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considering effectiveness from a psycho-social angle, ultrasound-scans are relatively non-invasive, efficient and can provide immediate reassurance (24). They have also been shown to be effective for diagnosis of pelvic venous congestion, a condition leading to increased venous pressure in the abdomen (25, 26).

Diagnosis of CPP, especially in the context of endometriosis or intra-pelvic abdominal pathology used to consider laparoscopy the gold standard, however both RCOG and EAU recommend it is used more sparingly, as surgery has associated risks (1, 14). A study investigating pathology associated with CPP found that 65% of women had a diagnosable condition upon carrying out the procedure (27). However, over one third of women- within a subgroup selected for an appropriate diagnostic laparoscopy- had no pathology identified (27). Not only is it expensive, but it can frequently lead to no conclusive diagnosis. Furthermore, unrealistic expectations can arise with assumptions that discovering an underlying cause will lead to a 'cure' or the most effective treatment, when this is not always the case. Therefore, laparoscopy should only be considered after thorough non-invasive testing and a detailed history and examination.

As suggested by both the RCOG and EAU, as CPP is often a condition of multiple causations and pathologies, one diagnostic test is insufficient. Rather, a full assessment by the clinician, appropriate bedside tests and early referral to specialist care centres for in depth assessment is the most effective, multidisciplinary approach to diagnosis CPP.

Long-term management of Chronic pelvic pain:

As CPP is a multifaceted condition, effective treatments must be multidimensional, and address the bio-psycho-social needs of the patient. In this essay, criteria for effectiveness include addressing risk factors and consequences, utilising a holistic, multidisciplinary team approach and where possible, showing an overall improvement of symptoms.

Pharmacological approach

Medical approaches are usually pharmacologically based and target symptom control. For example, if the pain is IBS-related in nature, antispasmodics, laxatives or other agents may be used for symptomatic relief (28, 29). In conjunction to this, RCOG guidelines advise dietary modifications to control symptoms, which suggests greater effectiveness when different management methods are used together. Furthermore, up to one third of women experiencing CPP have IBS, so considering this during diagnostics and management should make for more effective treatment of women within that subgroup (29).

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The RCOG suggests that women with any form of cyclical pelvic pain should be offered a trial of hormonal-based treatment for at least three to six months before considering diagnostic laparoscopy (1). Oral contraceptives (OC's) are usually first line, particularly for cyclical pain and endometriosis-type symptoms. A recent 2020 study showed that over a six month period, women with CPP taking an OC had an 87.7% decrease in chronic pelvic pain, compared to 12.1% in the group receiving only non-steroid anti-inflammatory (NSAID) therapy (30). This supports OC's being effective for alleviation of pain-related symptoms.

Further hormonal medications include Gonadotrophin releasing hormone (GnRH). Robert et al. conducted a randomised control trial in which 100 women received either a Gonadotrophin releasing hormone (GnRH) drug or placebo for symptomatic relief of CPP. Women receiving the GnRH analogue experienced significantly fewer symptoms than those receiving the placebo drug (31). This could prove a useful alternative when OC's are contraindicated or deemed unsuitable for specific patients.

Other forms of treatment include Progestogens. A Cochrane review concludes that women being treated with progestogens compared to a placebo tended to have greater improvements in their CPP after nine months of treatment (32). However, one included study demonstrated that goserelin (a GnRH analogue) was actually more effective in improving women's pelvic pain score at one year, compared to those taking progesterone (33). In conjunction, mood and sexual function were also reported to have improved to a greater extent than those taking progesterone (32). This suggests that although targeting CPP from a medical perspective, the secondary effects of improving symptoms can better psychological outcomes, leading to an increased QoL.

These and multiple other trials provide a bank of evidence in supporting efficacy of hormonal based medications for symptomatic relief of CPP. These medications can be particularly effective when used for cyclical pelvic pain. However, care should be taken when prescribing hormonal medications due to the risk of side-effects such as bloating and mood swings which could worsen symptoms. In addition, oestrogen-based medications can increase the risk of thrombosis (34). Co-morbid conditions and mood disorders should be considered when prescribing hormone-based medications, to support women holistically whilst on treatment. Hence, the EAU strongly suggests these medications should be gynaecologist initiated in order to provide the most appropriate therapy (14).

Analgesia-based methods are part of a combined approach to managing CPP, aiming at symptom control in the context of either more long-term management or further diagnostics. Since many cases of CPP are accountable to conditions involving inflammation, it would follow that NSAIDs would reduce inflammation and therefore improve pain-related symptoms (35). However, this

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should be done after assessing individuals for risks factors which may lead to gastric irritation and bleeding (36). Furthermore, it would be ineffective to use analgesia as a single treatment method, as this does not consider underlying pathology, nor psycho-social risk factors and co-morbidities.

Surgical approaches

Surgical methods double as both diagnostic and management of CPP. They can be effective for treating some forms of CPP, however are not effective for treating all symptom groups.

Laparoscopy is the most common form of surgical intervention in the field of CPP. It is predominantly used as a diagnostic method, however, can also be used to administer treatments, such as cysts aspiration and adhesiolysis (27, 37). Although seen as an effective method for diagnosing intra-abdominal pelvic pathology, it is important to note that in clinical trials, only 50% of women are found to have diagnostic abnormalities during the procedure (38). However, other smaller-scale studies have found it can prove diagnostic in up to 66% of women presenting with symptoms, and guide treatment for specific pathologies, leading to more effective symptom management (37).

CPP can be caused by adhesions, however these are often asymptomatic in individuals not experiencing CPP. The RCOG does not support the use of surgery for division of fine adhesions, but considers it to be useful when thick vascular adhesions are identified (1). A systematic review of trials using adhesion removal for treatment of CPP concludes there is no compelling evidence to suggest long-term symptom management (39). Furthermore, due to the nature of surgery and scar formation, there is a risk that adhesions may re-form and cause worsening pain (39).

Surgeries such as laparoscopic uterine nerve ablation (LUNA) have been trialled as a method of achieving symptom control. A double-blind RCT of women who were grouped according to being endometriosis positive and negative used LUNA in an attempt to improve CPP (40). Although there was a significant improvement in dysmenorrhoea, there was no improvement in any other form of CPP symptoms. This may be linked to a unimodal approach not fully manging the underlying causes of pelvic pain, nor the pyscho-social impacts of the condition.

It is important to touch upon hysterectomies, both as a surgical treatment and a reminder that CPP can effective QoL to such an extent that major surgery is necessary. The EAU highlights that patients suitable for hysterectomy must be selected carefully, as pelvic pain can continue post-operatively (14). In one study, 11.6% of women who underwent hysterectomy reported pain after the procedure (41). Another China-based study reported that 27.7% of women that underwent the procedure for CPP reported post-operative chronic pain (42). Although for the majority of women in these studies

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hysterectomy has been effective for symptom control, it is notable that up to a quarter of women post-surgery may have worsening symptoms.

Surgical intervention comes with inevitable risks, including side-effects from anaesthetic agents, prolonged recovery times and increased risk of deep vein thrombosis (43). Therefore, it would be more appropriate to consider the effectiveness again in terms of a more multi-modal approach, alongside psychological techniques and trials of hormonal or analgesia-based treatment prior to surgical intervention.

Psychosocial approach and complimentary therapies

Psychological disorders such as anxiety and depression are both a risk factor for, and consequence of CPP. An Australian study based used a cross-sectional analysis method to assess women with CPP for anxiety and depression symptoms. Up to 53% of women were found to have moderate to severe anxiety and 26.7% experienced moderate to severe depression (44). Beliefs surrounding pain and catastrophising were also linked to higher levels of pain. This is not to suggest that CPP is purely psychological, rather that mood constitutes a part of the complex interplay of factors which manifest as CPP. Hence, psycho-social factors must be addressed to effectively manage the condition.

Cognitive behavioural therapy (CBT) is commonly used in chronic pain syndromes, and hence under NICE guidelines it can be used in the psycho-social management of CPP. There appear to be few studies investigating the effectiveness and long-term outcomes of CBT in the field of pelvic pain. One trial showed improvement of sexual function after women with CPP underwent a CBT programme, however no other symptoms were evaluated (45). Yet, since CBT has been shown to improve chronic pain syndromes such as fibromyalgia and chronic back pain, it is likely to be useful in the field of CPP (46). Pelvic pain specific psychotherapy may be more effective since CPP has unique symptoms and features.

The RCOG and EAU do not currently suggest many alternative therapies. Emerging evidence suggests complementary therapies and exercises may help to improve both QoL and symptoms. One RCT investigates using yogic interventions in women with CPP and measured pain score outcomes and QoL indicators, as opposed to standard management with analgesia (47). The group which completed eight weeks of yoga therapy and relaxation experienced a significant decreased in pain related scores, compared to women being treated with NSAIDs alone. Although, further studies are needed before this could be adopted as part of an integrated management plan for women suffering

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from CPP. However, since there are few contraindications, yoga or gentle exercise programmes could form a part of a holistic treatment plan for CPP.

Further adjuncts include pelvic therapy, acupuncture, and exercise programmes. Results are overall beneficial, however the use of these methods is uncommon, and rarely used for CPP in the UK (48, 49). Consequently, it is challenging to assess how effective these are for CPP management, but could provide an area for further study and evaluation.

Summary:

Current NICE guidelines do not address CPP-specific treatments. The RCOG and EAU map-out a range of different options for treatment of CPP and conditions which cause pelvic pain symptoms, although some have limited evidence to suggest ongoing effectiveness. More emphasis needs to be placed on using a combination of treatment methods to optimise symptom control and an update of both 2012 guidelines would be appropriate due to emerging evidence for new therapies. Alternative therapies could provide symptom relief to appropriate groups of patients, whilst also providing holistic, enjoyable activities to improve chronic pain. Further innovation might focus on making these combined treatments available to patients in developing countries and more rural communities, to improve access to CPP treatments.

Conclusion

Chronic pelvic pain is common, and distressing for those affected. Management must consider the wide range of symptoms caused by CPP, from the pain and discomfort to secondary mood disorders. Consequently, there are few situations in which management of CPP with one treatment alone is effective. Each individual should have a thorough assessment, and where necessary, early referral to specialist services should be sought in order to receive specific further assessment or treatment. Although the RCOG and EAU promote an integrated approach to management, greater emphasis should be placed on alternative therapies, which seem to provide real relief for patients experiencing CPP at both low risk and low cost. Further research is needed on the most effective analgesia for managing CPP, as well as psychological therapies such as CBT. Overall chronic pelvic pain treatment guidelines should be updated to place greater emphasis on integrated approaches to diagnosis and management of CPP, in order to provide the most effective long-term management.

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