

Chronic pelvic pain in women

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Chronic pelvic pain in women is a debilitating condition that impairs quality of life. Studies using various definitions estimated that its prevalence ranges from 2.1% to 24% of the female population worldwide.¹ It is a common presentation in UK primary care, with 38 per 1000 women affected annually—a rate comparable to those of asthma (37 per 1000) and back pain (41 per 1000).² Because pelvic pain is associated with conditions such as endometriosis and interstitial cystitis, a diagnosis is often difficult to establish, leading to a delay in appropriate treatment. Social and psychological factors are strongly associated with chronic pelvic pain, so tailored, effective treatment can be challenging to provide.

What is chronic pelvic pain and who gets it?

Chronic pelvic pain is described in many ways.³ The most frequently cited definition is cyclical or non-cyclical pain in the lower abdomen or pelvis, of at least six months' duration, occurring continuously or intermittently, that causes functional disability or limits activities of daily living.^{w1} The condition is perhaps best seen from a biopsychosocial perspective; organic pathology, beliefs, coping skills, and social interactions all contribute to the woman's experience of pain.^{w2}

Chronic pelvic pain can be a symptom and also a syndrome in its own right when underlying pathology has been excluded. It may encompass dyspareunia (pain

SUMMARY POINTS

Chronic pelvic pain is a common and debilitating condition. Women with chronic pelvic pain want to be taken seriously and attach a high value to identifying a cause for their pain. No organic cause is found on laparoscopy in at least a third of women with chronic pelvic pain, and patients should be made aware of this before they consent to investigations. Psychological symptoms, such as anxiety and depression, are frequently present. Gynaecological treatment for chronic pelvic pain is often unsatisfactory even when directed by an identified cause. A multidisciplinary approach is essential for effective management.

during sexual intercourse), dyschesia (painful bowel motions), dysuria (painful micturition), or exacerbation of dysmenorrhoea (painful periods), but it can also be independent of these symptoms. Possible pathological causes include endometriosis, chronic pelvic inflammatory infection, adhesions,⁴ irritable bowel syndrome, interstitial cystitis, and pelvic congestion syndrome.^{w3} Pain may also arise from musculoskeletal conditions, from pelvic organ prolapse, or from adaptive posture as a result of lower back pain.

At diagnostic laparoscopy, a substantial proportion of women with chronic pelvic pain (55% in a recent study) have no obvious pathological cause for their pain⁵; this syndrome is also called idiopathic chronic pelvic pain. Several neural paths within the pelvis transmit pain from the reproductive organs,^{w4} but these nerve fibres may also refer pain to somatic receptors and manifest as chronic pelvic pain.⁶ Changes to inflammatory cytokines observed in patients with interstitial cystitis, irritable bowel syndrome, and vulvar vestibulitis might indicate neurogenic inflammation.⁷

A review of factors predisposing women to chronic pelvic pain identified that drug or alcohol misuse, miscarriage, heavy periods, previous caesarean section, pelvic pathology, abuse, and psychological comorbidities were associated with a higher risk of non-cyclical pain.⁴ Figure 1 summarises these findings using composite categories. Psychological factors affect how people react to and report pain, and they result in coping strategies that can have either a positive or negative effect on wellbeing. Twin studies indicate an aspect of heritability, although this can be accounted for by genetic variance underlying the related conditions of endometriosis, fibroids, dysmenorrhoea, and also somatic distress: no independent genetic factors were identified as unique to idiopathic chronic pelvic pain.^{w5}

SOURCES AND SELECTION CRITERIA

We searched EMBASE and Medline for articles with titles that included the keywords "chronic pelvic pain" with the limits "meta-analysis, review and randomised controlled trial". We restricted the search to articles published in English in the past five years. We identified all systematic reviews and trial citations in the Cochrane Library under the MeSH terms pelvic pain and dysmenorrhoea. Articles of interest cited in these papers were identified. Finally we reviewed published clinical guidelines from international pain associations and gynaecological societies and searched the National Guidelines Clearing House.

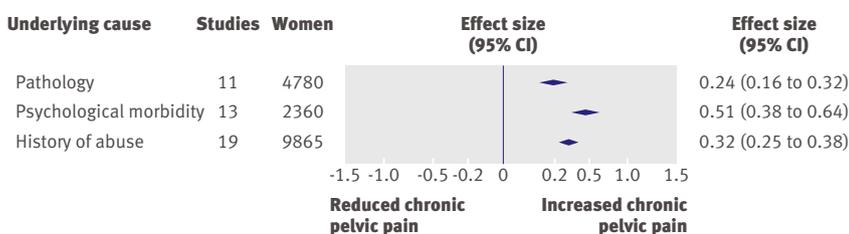


Fig 1 | Composite forest plot of data from studies of individual risk factors associated with dyspareunia, dysmenorrhoea, and non-cyclical pelvic pain⁴

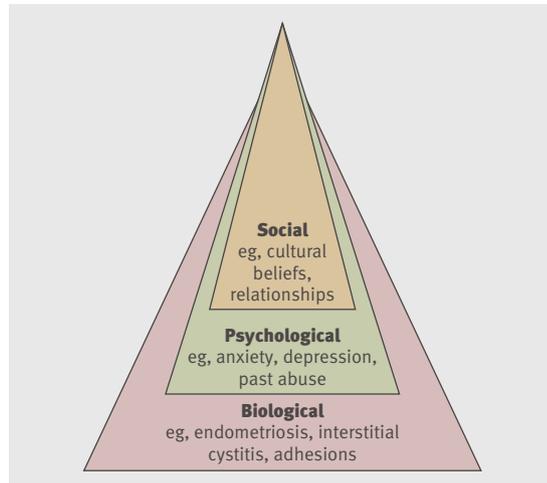


Fig 2 | Biopsychosocial model of chronic pelvic pain

What are the personal and societal costs of chronic pelvic pain?

The negative effect of chronic pelvic pain on women's general quality of life is substantial. Women with chronic pelvic pain tend to report lower general physical health scores than controls without pain.⁸⁻⁹ Women with chronic pelvic pain describe loss, social isolation, and effects on relationships. They have a high incidence of comorbidity, sleep disturbance, and fatigue. A community based study found that 41% of women with chronic pelvic pain had not seen a healthcare provider in the previous year,⁸ suggesting that most women are coping outside the system. Pain affects daily activities; around 18% of employed women in the UK take at least a day off work each year because of such pain.⁸ The economic burden to healthcare systems is difficult to establish, and no recent data are available. Hospital episode data estimated the direct cost of health care for chronic pelvic pain at £158m (€188m, \$237m) with a further £24m in indirect costs in 1992.^{w6}

How is chronic pelvic pain diagnosed?

Because the symptoms are varied and non-specific, a differential diagnosis can be hard to establish. The condition is chronic and women present repeatedly over several years. It is important to consider the whole range of possible causes at every new encounter in the general practice or gynaecology clinic, whether first or repeat, bearing in mind the biopsychosocial perspective (fig 2). A previously diagnosed condition may have recurred (for example, endometriosis) or a new condition may have developed (such as interstitial cystitis or depression in a woman previously diagnosed with endometriosis or idiopathic chronic pelvic pain). A multidisciplinary approach is ideal.

Women with chronic pelvic pain want to feel they are being taken seriously, desire reassurance, and attach importance to having an explanation for their pain.^{w7} Failure to address these concerns can mean a loss of opportunity to improve the patient's quality of life.^{w8} The International Pelvic Pain Society recommends the use of body charts, simple visual analogue scales, and the short form McGill questionnaire.^{w9} Although these measures may help women to articulate their experience of pain, qualitative research shows that the McGill pain questionnaire does

not capture the full range of descriptions women attribute to pain.^{w10-10} The clinician should explore descriptions and locations of pain with the patient.¹¹ Enabling the woman to tell her story and consider the causes of pain helps to improve the therapeutic relationship and serves as a positive experience for the woman.^{w11}

By taking a history of the patterns and intensity of pain and its association with gynaecological, urogenital, and bowel symptoms, a potential cause may be revealed.^{w12-w13} Women with endometriosis report throbbing pain and pain during defecation more frequently than those with idiopathic chronic pelvic pain.¹¹ Symptoms suspicious of pelvic inflammatory disease should prompt a cervical swab, although a negative culture does not always exclude the diagnosis.^{w14} Psychological history is equally important in view of the association between chronic pelvic pain and anxiety and depressive symptoms.⁴ Routine use of a simple screening questionnaire, such as the two question Patient Health Questionnaire-2, may help to identify depression.^{w15} A more sensitive subject to raise is that of physical and sexual abuse.⁴ Few valid tools exist to guide questioning^{w16} and such investigations should always be supported with appropriate counselling services. Physical examination can also inform further testing. For example, tenderness or nodularity of the cul-de-sac and uterosacral ligaments are highly predictive of deep endometriosis,^{w17-w18} and tenderness of the uterus to palpation is a non-specific marker for adenomyosis. Pelvic organ prolapse can be assessed and described with the POP-Q system.^{w19}

The accuracy of tests used for chronic pelvic pain is affected by the range of target conditions that have different diagnostic standards and criteria. Additionally, a woman may have more than one underlying cause for her symptoms. Women should be made aware that a substantial proportion of women with chronic pelvic pain do not have an identifiable organic cause before consenting to unpleasant and potentially risky investigations. Radiological tests including transvaginal ultrasound scanning and magnetic resonance imaging (MRI) can delineate normal pelvic organs. They can also identify many pathological conditions such as deep infiltrating endometriosis^{w18} and ovarian endometrioma,^{w20} adenomyosis,^{w21} adhesions,^{w22} dilated pelvic veins,^{w23} and other soft markers.^{w24}

Although its accuracy is not perfect, the use of MRI for the differential diagnosis of chronic pelvic pain has the potential to replace diagnostic laparoscopy in a proportion of women.^{12-w25} Laparoscopy is regarded as the "gold standard"¹³⁻¹⁴ although many target conditions cannot be diagnosed in this way (for example, adenomyosis). Laparoscopically diagnosable diseases are more common (65%) among women with chronic pelvic pain than in those without such pain (28%).¹⁴ Although diagnostic criteria such as perihepatic adhesions in pelvic inflammatory disease^{w26} or typical lesions seen in endometriosis^{w27} are easy to identify, subtle lesions and deep infiltrating endometriosis may be missed, possibly because of a lack of training in laparoscopic diagnosis. The relevant question is not so much whether MRI or laparoscopy is more accurate, but which of the two has a greater effect on treatment decisions. This issue will be the subject of research through our recently funded NIHR health technology assessment project (www.medal.bham.ac.uk).

QUESTIONS FOR FUTURE RESEARCH

- Analysis of distribution of the underlying causes of chronic pelvic pain
- Role of MRI in differential diagnosis of chronic pelvic pain
- Estimation of accuracy of individual and combinations of diagnostic tests
- High quality assessments of treatment packages, including psychological therapies
- Development of a new pain assessment tool to capture the multidimensional experience of pelvic pain
- Economic analysis to determine most cost effective diagnosis and management strategies

ADDITIONAL EDUCATIONAL RESOURCES

Resources for healthcare professionals

International Association for the Study of Pain (IASP) (www.iasp-pain.org)—IASP brings together scientists, clinicians, healthcare providers, and policy makers to stimulate and support the study of pain and to translate that knowledge into improved pain relief worldwide

International Pelvic Pain Society (www.pelvicpain.org)—United States educational society for healthcare providers. A pelvic pain assessment proforma can be downloaded from the website

Multidisciplinary Approach to the Study of Chronic Pelvic Pain (MAPP) Research Network (www.mappnetwork.org)—collaborative research on urological chronic pelvic pain disorders

Resources for patients

Pelvic Pain Support Network (www.pelvicpain.org.uk)—charity that provides support, information, and advocacy for people with chronic pelvic pain, and promotes education and research in chronic pelvic pain among health professionals

Endometriosis UK (www.endometriosis-uk.org)—provides information and support and works to increase understanding and awareness

The Gut Trust (www.theguttrust.org)—has a telephone helpline and a web based self management programme for people with irritable bowel syndrome

Consumers, and some professionals, may see diagnostic laparoscopy as an invasive, expensive, and overused, and risky procedure.^{w1} Rates of its use vary greatly across regions^{w28} and its use as the initial test in secondary care is by no means universal.¹⁵ The procedure is associated with about a 3% risk of minor complications (for example, nausea and vomiting, shoulder tip pain), a 0.24% risk of unanticipated injury causing major complications (such as bowel perforation)—of which two thirds require laparotomy—and an estimated risk of death of 3.3–8 per 100 000.^{w29 w30} Consent for laparoscopic procedures is often poor, with women being confused as to whether the procedure is diagnostic or therapeutic, and complications are a frequent cause for medical negligence claims.^{w31}

What is the initial therapeutic approach for chronic pelvic pain?

Analgesics are often the first line of management, and women often try to manage their pain with over the counter painkillers before consulting with their general practitioner. As diagnoses emerge, so do treatment strategies. These strategies should be tailored to the needs of individual patients, since chronic symptoms, whatever the cause, need long term management and a multimodal approach. The combined oral contraceptive pill is frequently used with good results, despite no direct evidence for efficacy in chronic pelvic pain and limited evidence in dysmenorrhoea.¹⁶ The contraceptive pill can be used in the usual way with monthly cycles or continuously to avoid monthly periods and associated pain.^{w31} Two small randomised controlled trials have assessed use of medroxyprogesterone for women with a diagnosis of pelvic

congestion syndrome; one factorial trial comparing this treatment with psychotherapy and placebo, and one trial against placebo alone. Medroxyprogesterone alone improved pain scores (odds ratio 2.64, 95% confidence interval 1.33 to 5.25, n=146) and self reported improvement (6.81, 1.83 to 25.3, n=44) at the end of the four month treatment period, but the benefit was not sustained to nine months later.^{w33 w34} For many women, progestogens have side effects, such as weight gain and acne, that may lead to discontinuation. The orally vasoactive lofexidine hydrochloride, which was postulated to affect pain by reducing vasospasms associated with pelvic venous congestion, did not show a benefit in a small placebo controlled trial.^{w35}

Tricyclic antidepressants and venlafaxine provide benefit for neuropathic pain^{w36} but not lower back pain.^{w37} Only one small randomised controlled trial of sertraline compared with placebo has been reported for chronic pelvic pain, with no evidence of improvement in pain scores.^{w38} One randomised controlled trial of gabapentin, which is frequently used for neuropathic pain, assessed this drug either alone or in combination with amitriptyline. Fifty six women with pain refractory to the non-opioid drug metamizol together with weak opioid tramadol were followed up for 24 months of treatment. All women reported improvements in pain, but gabapentin alone or with amitriptyline was better than amitriptyline alone in the reduction of pelvic pain reported on a visual analogue scale.^{w39} The method of randomisation was unstated and the trial was not blinded, to allow careful titration of drugs to minimise adverse events, so ideally this result should be substantiated in a larger, higher quality trial.

Women with chronic pelvic pain tend to be referred to gynaecology clinics. A multidisciplinary approach has been advocated¹⁷ and fits with the biopsychosocial model of pain, but such clinics are few and far between, leading to lack of a holistic approach. One Dutch randomised controlled trial lends support to this approach.¹⁸ In the group randomised to

A PATIENT'S PERSPECTIVE

I have suffered with period pain since I was fifteen. I had taken various oral contraceptive pills over the years. Sixteen years later, by chance, a retired doctor noticed that I was using a hot water bottle to ease my period pain, which was unbearable. He told me this was not normal and that it could be endometriosis. Two months later, I was diagnosed with severe endometriosis via laparoscopy. Last September I had laser surgery by laparoscopy and a levonorgestrel intrauterine device was inserted. This procedure did not alleviate the pain but the hormonal treatment has reduced the bleeding.

Living with endometriosis is extremely frustrating, especially because the path of diagnosis has been so long. I have always been determined to take charge of my life, but the lack of good quality information has hindered me in being able to do this. Recently I was lucky to be able to attend an international congress on endometriosis, a source of reliable information that has given me some directions in which to exert my efforts: finding the best treatments to manage pain and the best options to boost my emotional wellbeing. Although I am scared, now I am in a better position to manage pain and my whole life, which is being affected at all levels by the severity of my condition.

From a member of the Pelvic Pain Support Network

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TIPS FOR NON-SPECIALISTS

- Let the woman tell her story—taking a good history is important.
- Consider gynaecological, urological, bowel, and psychological symptoms
- Refer to a gynaecological pain specialist or gynaecologist with access to a multidisciplinary pain team

standard management, diagnostic laparoscopy was routinely done to exclude organic pelvic pain, which was treated appropriately. If no somatic cause could be found psychological therapies were considered. In the group randomised to integrated management, somatic, psychological, dietary, environmental, and physiotherapeutic factors were addressed equally and laparoscopy was not routinely done. The latter group had greater self reported improvement (odds ratio 4.15, 95% confidence interval 1.91 to 8.99), better activities of daily living scores (3.53, 1.65 to 7.58), and improved non-pain symptoms (6.99, 3.26 to 14.96), but no difference compared with the standard group in improvement in the McGill pain score (1.52, 0.71 to 3.27). It is difficult to identify which components of the integrated approach are responsible, but trials of cognitive behavioural therapy—which aims to influence dysfunctional emotions, behaviours, and cognitions through a goal oriented, systematic procedure—have been favourable in other chronic pain conditions. The role of counselling and psychological therapy is not widely appreciated by gynaecologists, general practitioners, and patients. Meta-analysis of two small randomised controlled trials including 142 women with chronic pelvic pain gave a mean difference in pain scores at least six months after intervention of -1.57 (95% confidence interval -2.53 to -0.61 , $P < 0.00001$) in favour of the psychological intervention group.^{w40 w41}

Surgical treatments tend to focus on the organic causes of pelvic pain. Laparoscopic vaporisation or excision of endometriotic lesions is effective in reducing pain.^{w42} Division of intraperitoneal adhesions is of unclear benefit.^{19 w43} Interruption of the Lee-Frankenhauser sensory nerve plexuses by laparoscopic uterosacral nerve ablation was thought to alleviate pain. However, considerable evidence,⁵ including an individual patient data meta-analysis,²⁰ now shows that the procedure is not effective in reducing dysmenorrhoea, dyspareunia, or non-cyclical pain. Presacral neurectomy has been assessed in primary and secondary dysmenorrhoea^{w44} and seems to be more effective than uterosacral nerve ablation, but it is associated with a high incidence of later constipation and is not widely practised.

What are the recommendations from clinical guidelines?

The UK Royal College of Obstetricians and Gynaecologists has produced an algorithm for assessment and initial treatment of chronic pain, which was the basis of the information in this review.¹⁵ Further guidelines recommend that, if no pathology is seen at laparoscopy, a letter of reassurance should be offered and the woman contacted for review a year later.²¹ Guidelines from the European Association of Urology also recommend assessment and treatment of nerve entrapment and pelvic floor dysfunction through nerve blocks and transcutaneous electrical nerve stimulation for interstitial cystitis.²² Both UK and American guidelines encourage an empirical

trial of gonadotropin releasing hormone agonists for women suspected of endometriosis who do not desire a definitive diagnosis or wish to defer surgical investigation.^{23 24 w45}

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