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Review Article

Management of Chronic Pelvic Pain in Females– A comprehensive Review

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Abstract

Chronic pelvic pain (CPP) is a complex and debilitating condition that affects many individuals, impacting their daily lives and overall well-being. Managing CPP effectively requires a holistic and multidisciplinary strategy due to its various causes, which can include issues related to gynecology, urology, gastrointestinal tract, and musculoskeletal system. This review aims to illustrate current approaches to treating CPP, focusing on the integration of thorough clinical assessments, accurate diagnostics, and various treatment options. It covers the roles of medications, physical therapy, psychological support, and surgical interventions, while also considering recent advancements such as minimally invasive techniques and complementary medicine approaches. By reviewing the latest research and clinical guidelines, this review aims to provide an updated framework for healthcare professionals to enhance patient care and achieve better outcomes for those with CPP.

Introduction

Chronic pelvic pain (CPP) is a disabling and persistent pain condition that occurs within the pelvic region in women. It is relatively common and is often linked with comorbid conditions such as irritable bowel syndrome (IBS), major depressive disorder, and pelvic inflammatory disease. In the United States, approximately one in seven women is affected by CPP, making its prevalence comparable to that of migraine headaches, asthma, and chronic back pain [1]. CPP is classified as a form of chronic regional pain syndrome. The diagnosis is generally made after a woman has experienced pelvic pain for three to six months. This diagnosis is often based on a detailed history and physical examination, with the presence of various associated symptoms or contributing factors aiding in establishing the diagnosis. While imaging and laboratory tests frequently do not provide definitive results for CPP, they are often helpful in identifying comorbid conditions that may contribute to the development of CPP. Despite extensive evaluation, an estimated fifty percent of CPP cases remain undiagnosed [2].

CPP is characterized as a type of centralized pain, wherein the body develops a heightened sensitivity to pain, often due to the persistence of pain over time. For instance, if a woman develops endometriosis, the acute pain initially associated with this condition can become centralized over a three to six-month period, resulting in chronic pain [3]. In centralized pain, what was previously a mild to moderate pain may be perceived as severe (hyperalgesia), or non-painful stimuli may be experienced as painful (allodynia). CPP also has a significant association with past physical or emotional trauma, which suggests that the condition may be linked to functional somatic pain syndromes [4]. The treatment of CPP is complex and often challenging, with limited evidence-based options available. Treatment is typically focused on addressing the underlying cause of the pain, whether it be a comorbid mood disorder, neuropathy, or uterine dysfunction. CPP affects an estimated four to sixteen percent of women, underscoring the need for high clinical suspicion in patients presenting with chronic pelvic pain. Effective management of CPP requires a collaborative, interprofessional team approach, involving multiple specialties to achieve adequate pain relief. Some patients may benefit from cognitive behavioral therapy and hormone replacement therapy, while others may require more invasive interventions such as spinal cord stimulation or a total hysterectomy [5].

Investigating Chronic Pelvic Pain – History and Physical Examination

When gathering a history from a patient with suspected chronic pelvic pain (CPP), it is important to identify any coexisting chronic pain conditions. Additionally, signs and symptoms such as allodynia or hyperalgesia, which suggest central sensitization as demonstrated in Figure 1, should be noted. The cause of CPP can often be determined by reviewing the patient's complete medical and surgical history, along with their gynecological and obstetric history [6]. Chronic pelvic pain in women is typically defined as ongoing, noncyclic pain, although it can also manifest in a cyclical manner. This pain is located in the pelvic region and must have persisted for more than six months. Importantly, it should not be related to pregnancy. The pain may be constant or occur in episodes. Some definitions exclude cyclical pain from the category of CPP, instead classifying it as dysmenorrhea [7].

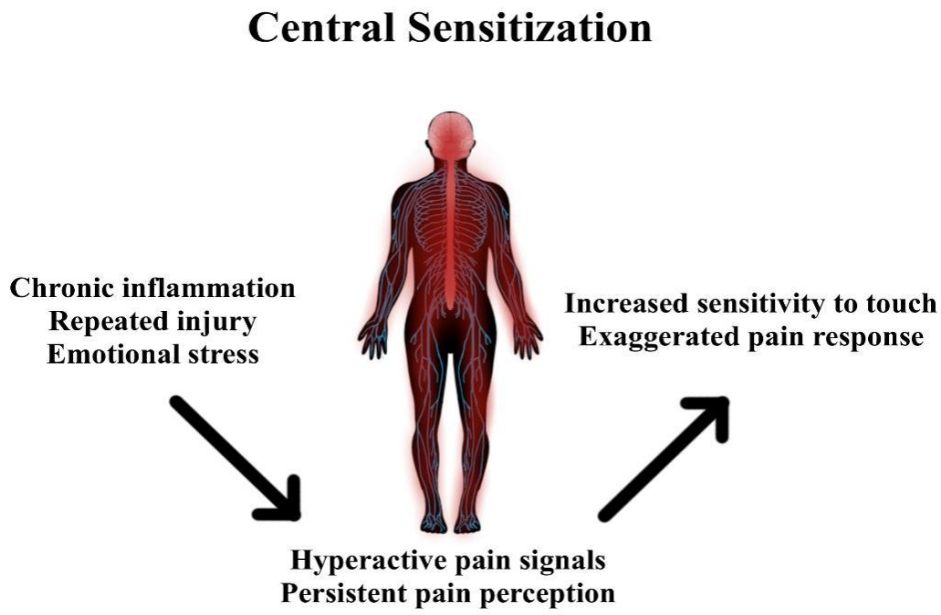

Figure 1: Central Sensitization

When taking the patient's history, it is essential to ask about factors that trigger or relieve the pain, including its relationship to menstruation, urination, sexual activity, and bowel movements, as well as the patient's response to previous treatments. Understanding the pattern of pain may also help identify other areas of pain or suggest a dermatomal distribution, indicating a non-visceral origin. It is equally important to assess for mental health disorders, as these can be associated with CPP. Common symptoms accompanying CPP include gastrointestinal, urinary, sexual, psychological, and menstrual issues, all of which can lead to a diminished quality of life [8]. Patients with CPP may also experience motor or autonomic dysfunction. The history should differentiate between cramping, burning, or electrical-type pain and sharp or dull pain, as well as distinguish between pain that fluctuates with the menstrual cycle and pain that remains constant. Additional factors to consider include pain during urination or defecation, postcoital bleeding, postmenopausal bleeding, pain onset after menopause, history of prior abdominal surgery or infection, and unexplained weight loss [9]. Certain red flags may indicate a systemic disease, such as postcoital bleeding, postmenopausal bleeding or new onset of pain, unexplained weight loss, the presence of a pelvic mass, or hematuria. A thorough physical examination, including a gynecological speculum and bimanual exam, as well as a full abdominal exam, is essential. The external genitalia should be inspected, and the pelvic floor muscles should be examined for tenderness or hypertonicity. During the physical exam, it is important to check for adnexal masses, an enlarged or tender uterus, or reduced uterine mobility during the bimanual exam. Pain elicited by palpation of the lumbar spine, sacroiliac joint, or pelvis should also be recorded. The Carnett test is recommended to determine if the abdominal wall is a source of the pain [10].

In the Carnett test as demonstrated in Figure 2, the patient lies supine and is asked to raise both legs off the exam table. The provider places a finger on the painful area of the patient's abdomen to assess whether the pain increases as the patient flexes their legs and contracts their abdominal muscles. Myofascial pain typically intensifies with leg flexion, whereas visceral pain tends to improve. Women with CPP have also been found to have significantly more asymmetry in their iliac crest height and

symphyseal levels [11].

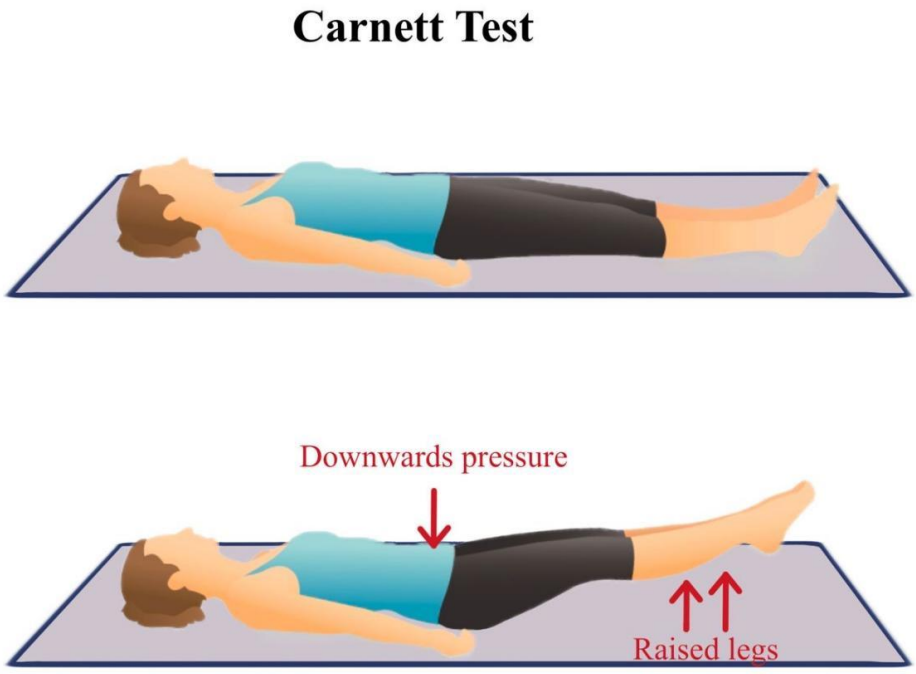

Figure 2: Carnett Test

Diagnosing Chronic Pelvic Pain

Diagnosis of chronic pelvic pain (CPP) primarily relies on a thorough history and physical examination. If these findings point to a specific condition underlying the pain, further steps should be taken to confirm the diagnosis. To identify whether the pain originates from the skin, a cotton swab test can be performed on the abdominal area. This test is highly specific for detecting cutaneous allodynia in patients with CPP. Additionally, assessing the impact of CPP on a patient's quality of life and daily functioning is crucial, and this can be done using standardized questionnaires [12].

The initial evaluation of a patient suspected of having CPP should begin with ruling out any alarm symptoms, signs of acute abdomen, or potential malignancy. In the absence of these concerns, laboratory tests and imaging studies are warranted. The initial workup typically includes a complete blood count (CBC), erythrocyte sedimentation rate (ESR), urinalysis, a urine pregnancy test, and tests for gonorrhea and chlamydia. A pelvic ultrasound is also recommended to detect any anatomical abnormalities. Transvaginal ultrasonography is particularly useful in identifying conditions like cysts, masses, and adenomyosis, as well as hydrosalpinx, which can indicate pelvic inflammatory disease—a common comorbidity in CPP. If abnormalities are detected on ultrasound, magnetic resonance imaging (MRI) may be necessary for further evaluation [13].

In cases where the patient experiences severe, uncontrolled pain, or if there is concern for an acute abdomen, immediate referral for laparoscopic surgery or transfer to the

emergency department is advised. If laparoscopy fails to reveal a clear cause, the CPP may be attributed to chronic regional pain syndrome. Diagnostic nerve blocks can help determine if the pain is neuropathic in origin. For example, if a sacral nerve root is anesthetized and the patient's pain subsides, this indicates that peripheral nerve dysfunction is contributing to the CPP. Additionally, pain mapping can be performed during laparoscopic surgery while the patient is under local sedation. During this procedure, the surgeon probes various tissues, and the patient reports the severity of pain in each area. This method can help target treatment more precisely to the specific source of the pain [14].

Differential Diagnosis of Chronic Pelvic Pain

Chronic pelvic pain (CPP) is a multifaceted condition that can arise from various underlying causes, often making it challenging to pinpoint the exact source of the pain. As the pain transitions from an acute to a chronic state, it often centralizes, meaning that the nervous system becomes more sensitive to pain signals, leading to persistent discomfort. This centralized pain can be linked to several different systems within the body, each contributing its own set of potential etiologies as demonstrated in Figure 3. Gynecological conditions are among the most common causes of CPP. One such condition is endometriosis, where tissue similar to the lining inside the uterus grows outside the uterus, leading to chronic inflammation, pain, and often infertility. Pelvic inflammatory disease (PID), an infection of the female reproductive organs, can cause chronic pain due to scarring and adhesions formed as a result of the infection. Pelvic adhesions, which are bands of scar tissue that bind organs together, can also cause significant pain by restricting the movement of pelvic organs. Recurrent ovarian cysts, which are fluid-filled sacs that develop on the ovaries, can cause sharp, intermittent pain that may become chronic if not managed properly. Leiomyomas, or uterine fibroids, are noncancerous growths in the uterus that can cause heavy menstrual bleeding and chronic pelvic pain. Adenomyosis, a condition where the inner lining of the uterus breaks through the muscle wall of the uterus, can also lead to severe menstrual cramps, lower abdominal pressure, and bloating, contributing to CPP. Hydrosalpinx, which is the accumulation of fluid in the fallopian tubes, often results from chronic PID and can lead to pain and infertility. Lastly, post-tubal ligation pain syndrome is a condition that some women experience after undergoing tubal ligation (surgical sterilization), characterized by chronic pelvic pain due to the formation of adhesions or nerve damage during the procedure [15].

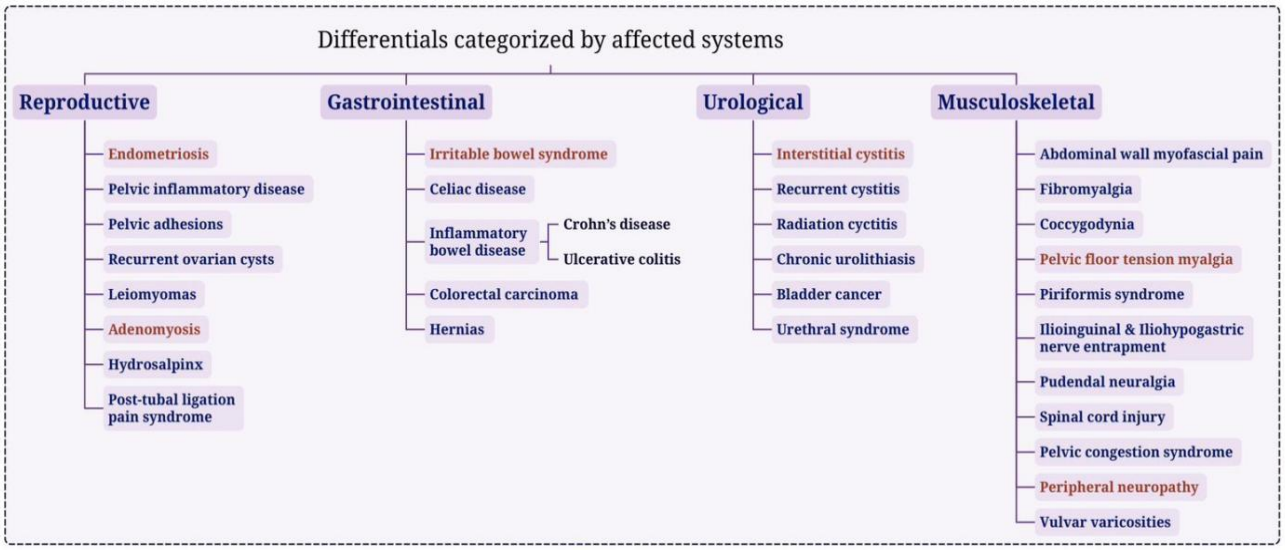

Figure 3: Differential Diagnosis categorized by affected systems

The gastrointestinal system can also be a significant contributor to CPP. Irritable bowel syndrome (IBS) is a common condition affecting the large intestine, characterized by symptoms such as cramping, abdominal pain, bloating, gas, and diarrhea or constipation. The chronic discomfort associated with IBS can overlap with pelvic pain, making it a key consideration in the differential diagnosis of CPP. Celiac disease, an autoimmune disorder where the ingestion of gluten leads to damage in the small intestine, can cause chronic abdominal pain and other gastrointestinal symptoms that may be interpreted as pelvic pain. Inflammatory bowel disease (IBD), which includes Crohn's disease and ulcerative colitis, causes chronic inflammation of the digestive tract and can lead to abdominal pain, diarrhea, fatigue, and weight loss, contributing to CPP. Colorectal carcinoma, or cancer of the colon or rectum, can present with abdominal pain that may be perceived as pelvic pain, particularly in advanced stages of

Urological conditions are another important category of CPP etiologies. Interstitial cystitis, also known as painful bladder syndrome, is a chronic condition causing bladder pressure, bladder pain, and sometimes pelvic pain, often with a strong, persistent urge to urinate. This condition can be debilitating and significantly impact the quality of life. Recurrent cystitis, or frequent bladder infections, can lead to chronic pain due to inflammation and irritation of the bladder lining. Radiation cystitis, which can occur after radiation therapy to the pelvic area, causes inflammation of the bladder that leads to pain and discomfort. Chronic urolithiasis, or recurrent kidney stones, can cause persistent flank or pelvic pain as the stones pass through the urinary tract. Bladder cancer is another serious condition that can present with pelvic pain, particularly if the tumor invades nearby tissues. Urethral syndrome, characterized by chronic inflammation of the urethra, can cause symptoms similar to those of a urinary tract infection, including pain and discomfort in the pelvic region [17].

The musculoskeletal system can also contribute to CPP through various conditions. Abdominal wall myofascial pain is caused by the irritation of the muscles and fascia of the abdominal wall, leading to chronic, localized pain that can mimic pelvic pain. Fibromyalgia, a condition characterized by widespread musculoskeletal pain, fatigue, and tenderness in localized areas, can contribute to chronic pelvic discomfort as part of its overall symptomatology. Coccygodynia, or tailbone pain, can result from trauma or prolonged pressure on the coccyx and lead to persistent pain that radiates to the pelvic area. Pelvic floor tension myalgia refers to the chronic contraction and tightness of the pelvic floor muscles, which can cause pain and discomfort in the pelvis, lower back, and genital area. Piriformis syndrome, caused by the compression of the sciatic nerve by the piriformis muscle in the buttocks, can lead to pain that radiates from the lower back to the pelvis and legs, often mistaken for pelvic pain. Neurological and vascular issues also play a significant role in CPP. Ilioinguinal and iliohypogastric nerve entrapment occur when these nerves are compressed or irritated, leading to chronic pain in the lower abdomen and pelvis. Pudendal neuralgia, a condition caused by the compression or damage of the pudendal nerve, results in chronic pelvic pain, particularly when sitting, as well as urinary and bowel symptoms. Spinal cord injury can lead to chronic pain in various parts of the body, including the pelvis, depending on the level and severity of the injury. Pelvic congestion syndrome is caused by varicose veins in the pelvis, leading to chronic, dull, and aching pain that worsens with prolonged standing or during menstruation. Peripheral neuropathy, which involves damage to the peripheral nerves, can cause chronic pain, tingling, and numbness in the pelvis and lower extremities. Vulvar varicosities, or varicose veins of the vulva, can also contribute to chronic pelvic discomfort, particularly during pregnancy or after prolonged standing [18].

Among the several stated causes of CPP, certain conditions are more commonly encountered. These include irritable bowel syndrome (IBS), which is frequently associated with pelvic pain due to the close proximity of the intestines to the pelvic organs. Musculoskeletal pelvic floor pain, often resulting from chronic tension or dysfunction of the pelvic floor muscles, is another common cause of CPP. Painful bladder syndrome, or interstitial cystitis, is also a frequent contributor to chronic pelvic discomfort. Peripheral neuropathy, which can arise from various causes including diabetes and nerve compression, often leads to chronic pain in the pelvic region. Lastly, chronic uterine pain disorders, such as endometriosis and adenomyosis, are significant contributors to CPP in women, often leading to severe, persistent pain that is challenging to manage [19].

Treatment of Chronic Pelvic Pain

The evidence supporting the use of analgesics in chronic pelvic pain (CPP) is relatively limited, particularly regarding their effectiveness in women compared to men or mixed-sex groups. Despite the lack of robust data, it is common for women with CPP to request adequate pain relief. Therefore, it is crucial to encourage consistent and prescribed use of analgesics while also recognizing their limitations and emphasizing the importance of integrating other treatment strategies as demonstrated in Figure 4. Many conditions associated with CPP are linked to increased inflammation or elevated inflammatory mediators, even if these have not been directly correlated with pain symptoms. This provides a rationale for prioritizing non-steroidal anti-inflammatory drugs (NSAIDs) in treatment plans. The efficacy of NSAIDs in various forms of CPP has been reviewed elsewhere. For women attempting to

conceive, it is essential to remember that NSAIDs can inhibit ovulation and should perhaps be reserved for managing pain specifically associated with menstruation. Some women may find rectal formulations of NSAIDs particularly helpful, though side effects such as diarrhea and rectal irritation can be deterrents, and many women may prefer to avoid this administration route. Although there is insufficient evidence to recommend COX-2 inhibitors universally, the risk-benefit profile might differ in young, otherwise healthy women, suggesting the need for further research in this demographic [20].

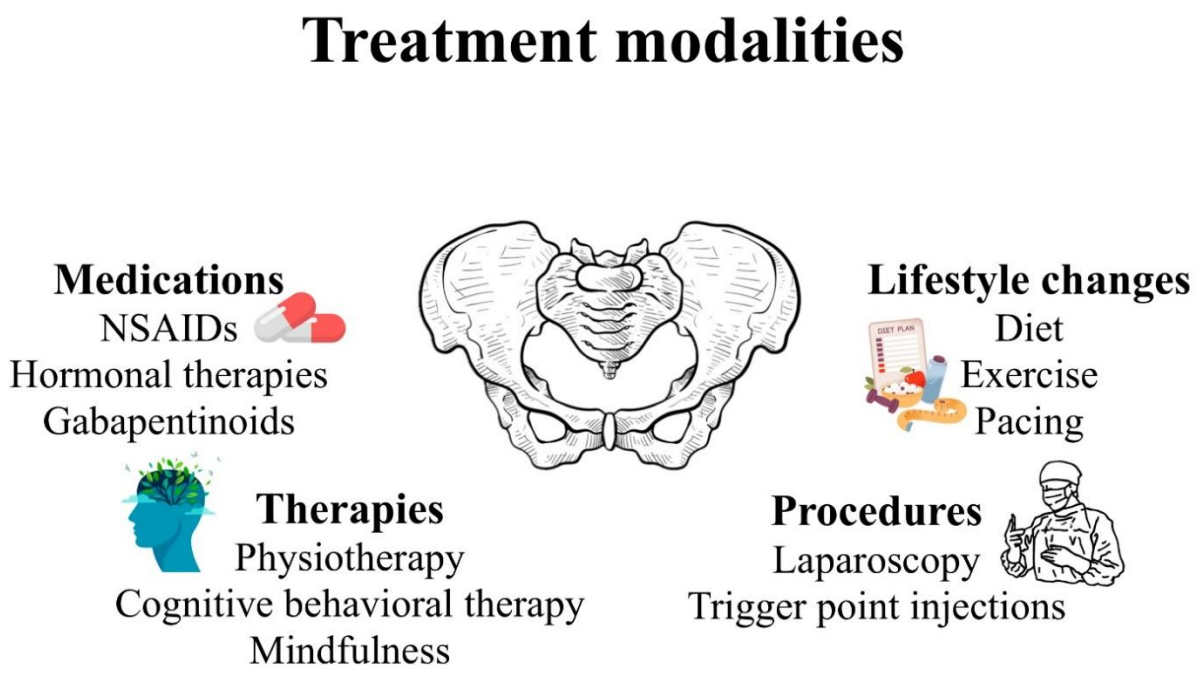

Figure 4: Treatment Modalities

The risks associated with opioid use are extensive and beyond the scope of this discussion. However, it is generally advised to avoid initiating opioid therapy for CPP, except for short-term use following surgery or during acute pain flares. Despite this, many women with CPP may already be using opioids, ranging from occasional mild formulations to long-term strong opioids. Tapering off long-term opioids should be managed by experienced healthcare teams, typically outside the scope of a specialized CPP clinic. It is important to discuss with patients the additional reasons to avoid opioids in the context of CPP, particularly the risk of constipation and its subsequent impact on pain. Constipation can exacerbate visceral pain and lead to secondary viscero-visceral referral, further increasing the symptom burden. Additionally, it can strain the pelvic floor muscles, worsening pelvic tension. For women of reproductive age who have not completed their families, the potential for opioid-induced endocrinopathy is a critical consideration, as it could affect fertility [21].

Although there is growing recognition of neuropathic-like pain and central pain mechanisms in many women with CPP, few studies have specifically examined the effectiveness of medications targeting these mechanisms, such as tricyclic antidepressants, gabapentinoids, and selective norepinephrine and serotonin reuptake inhibitors (SNRIs). There is some evidence that gabapentin can be beneficial for vulvar pain syndrome. However, a recent well-powered trial found no significant benefit of gabapentin over placebo for women with CPP without identifiable pelvic pathology. Notably, about 50% of women in the trial experienced significant side effects from gabapentin, much higher than those associated with placebo. Given the addictive potential of gabapentinoids, their use in women with CPP should be carefully considered, and a thorough discussion of the treatment's limitations and side effects is necessary. Recent UK guidelines suggest that antidepressants, including amitriptyline and duloxetine, may be considered for chronic primary pain conditions, although their application in CPP still requires careful consideration [22].

Many women with chronic pelvic pain (CPP) experience cyclical symptom flares regardless of the underlying condition, and dysmenorrhea is commonly comorbid. Menstrual products such as tampons, pads, and menstrual cups can exacerbate symptoms by irritating the perineum and pelvic floor muscles. Consequently, hormonal therapies aimed at achieving amenorrhea are often a key component of management plans. These therapies can alleviate cyclical mood changes and facilitate daily engagement with physiotherapy by preventing interruptions for menstrual bleeding. However, some women may choose to avoid hormonal treatments due to previous negative experiences or because they are currently trying to conceive. No single hormonal regimen has been proven superior, so choices should be tailored to individual needs, including past experiences with hormonal treatments, contraception requirements, comorbid conditions such as migraine with aura, and personal or family history of venous thromboembolic events [23].

The combined oral contraceptive pill (monophasic variety) can be tailored to avoid regular pill-free weeks, potentially helping with mood and symptom management. It is used for contraception and should be avoided in cases of migraine with aura, a history of venous thromboembolism (VTE), liver disease, raised BMI, advanced age, or a history of breast or gynecological cancer. The progesterone-only pill, administered continuously, is also a contraceptive option and can be beneficial if there is a history of breast or gynecological cancer. Provera, available in oral, intramuscular

(IM), and subcutaneous (SC) forms, is used for contraception, but should be avoided if there is a bleeding diathesis or history of breast or gynecological cancer. For women with mood disturbances from oral forms, a trial of the oral formulation before switching to IM/SC might be considered. Norethisterone, taken orally, is no longer a first-line option for delaying menstruation due to its associated VTE risk; alternatives should be considered first. The Levonorgestrel intrauterine system, effective for 3–5 years, may require earlier replacement if bleeding returns. It does not reliably inhibit ovulation, so other cyclical symptoms might persist. GnRH agonists, available in 28-day or 3-monthly preparations, are not used for contraception and are contraindicated in cases of known low bone density. They are typically licensed for 6 months, with off-label use often combined with low-dose continuous combined hormone replacement therapy (HRT) after 3 months. For extended use beyond 2 years, periodic bone mineral density assessments and annual reviews of the need for continued therapy are recommended. Hormonal therapy selection for managing chronic pelvic pain should be personalized based on the individual's specific needs, prior experiences, and medical history [24].

Surgical interventions for chronic pelvic pain encompass a range of procedures tailored to specific conditions. Resection or vaporization of vulvar or vestibular tissue is performed for HPV-induced or chronic vulvodynia and vestibulitis. Trigger point injection therapy targets myofascial pain in the pelvic and abdominal muscles. Cervical dilation is used to alleviate cervix stenosis, while hysteroscopic resection addresses intracavitary or submucous myomas and polyps. Myomectomy or myolysis is indicated for symptomatic intramural, subserosal, or pedunculated myomas. Adhesiolysis is carried out to remove peritubular and periovarian adhesions, and enterolysis is used for bowel adhesions, focusing on both thick and thin adhesions in pain-sensitive areas, including those affecting the ovaries and tubes. For symptomatic hydrosalpinx, salpingectomy or neosalpingostomy may be performed. Ovarian treatment addresses symptomatic ovarian pain, while uterosacral nerve vaporization helps with dysmenorrhea. Presacral neurectomy is indicated for disabling central pain primarily from uterine origins but may also address bladder-related pain. Complete resection of endometriosis from all surfaces, including the bladder, bowel, and rectovaginal septal space, is crucial in a debulking operation. Appendectomy may be necessary for chronic appendicitis or right lower quadrant pain. Uterine suspension is considered for symptoms related to collision dyspareunia, pelvic congestion, severe dysmenorrhea, or cul-de-sac endometriosis. Repairing hernia defects—whether sciatic, inguinal, femoral, Spigelian, ventral, or incisional—can be required. If organ-preserving surgeries like endometriosis resection or presacral neurectomy do not provide relief, a hysterectomy might be considered, especially if an MRI confirms adenomyosis. If surgical interventions fail to alleviate pain, it is essential to explore other potential sources of pain from gastrointestinal, myofascial, musculoskeletal, neurologic, and urologic systems, while also addressing any associated depression. Somatization should not be diagnosed until all other potential pain sources have been thoroughly investigated. When a definitive diagnosis remains elusive, patient-assisted or conscious laparoscopy can be valuable. This method allows for real-time interaction between the patient and surgeon, providing a clear view of the inner and outer surfaces, muscles, and organs, and enabling precise identification of the pain source through stimulus-response techniques [25].

Physiotherapy plays a crucial role in managing chronic pain, and a specialist physiotherapist is an integral part of our multidisciplinary team. However, there is limited evidence supporting the use of physiotherapy specifically for chronic pelvic pain (CPP). This lack of evidence is not necessarily due to the ineffectiveness of physiotherapy, but rather the absence of robust definitions and comprehensive published data. Chronic pelvic pain often involves viscero-somatic referral, where pain from the internal organs leads to altered muscle sensitivity, contributing to musculoskeletal dysfunction. Emerging evidence suggests that these dysfunctions often occur alongside other pelvic pathologies, such as endometriosis, and within pelvic pain syndromes, like vulvar pain syndrome. However, the variability in musculoskeletal issues and the psychological factors influencing each patient mean that a standardized physiotherapy program is unlikely to be effective for all cases of CPP. Instead, it is essential that physiotherapists working with CPP patients have specialized knowledge in chronic pain and women's health. This expertise allows them to tailor a physiotherapy strategy that addresses the unique needs and challenges of each patient, optimizing their overall management and improving outcomes [26].

Psychological factors play a central role in the experience of pain, making psychological interventions a critical aspect of chronic pain management. Common psychological strategies used in managing chronic pain, such as addressing fear, behavioral avoidance, and catastrophizing, are particularly relevant for individuals suffering from chronic pelvic pain (CPP). Research indicates that pain catastrophizing is widespread among women with CPP, often leading to increased pain perception and reduced quality of life. Cognitive Behavioral Therapy (CBT) is a structured, time-limited approach where the therapist and patient collaborate to identify and modify unhelpful thought patterns and behaviors. CBT employs various techniques, including activity scheduling and graded exposure for behavioral changes, alongside cognitive restructuring and problem-solving for cognitive modifications. Evidence suggests that CBT, while offering modest benefits, can effectively reduce pain, disability, and distress in chronic pain conditions. Emerging studies also support its efficacy in managing CPP specifically [27]. Additionally, there is limited evidence supporting other psychological approaches, such as Acceptance and Commitment Therapy (ACT) and mindfulness-based interventions, for chronic pain management. ACT emphasizes psychological flexibility through various strategies, while mindfulness-based interventions focus on cultivating present-moment awareness, emotional decentering, and fostering qualities like compassion and self-regulation. Furthermore, Compassion Focused Therapy, initially developed to treat depression with high levels of shame, may be particularly beneficial for individuals with chronic pain compounded by significant psychological factors. It is crucial to acknowledge the unique challenges faced by those living with CPP, as these can impact the effectiveness of psychological interventions. The normalization or dismissal of CPP experiences during early help-seeking can lead to confusion between 'pathological' and 'normal' pain, often resulting in a quest for validation through diagnosis. Consequently, therapeutic approaches must prioritize patient engagement, pain education, and cognitive strategies to address unhelpful or inaccurate health beliefs. Moreover, many individuals with CPP experience shame and secrecy, suggesting that psychological therapies effective in addressing shame may be particularly useful. Communication challenges often arise in these contexts, necessitating a stronger focus on developing communication skills, which are integral to pain management interventions. Additionally, healthy body

awareness can be difficult for individuals with CPP due to hypervigilance, self-criticism, or a sense of disconnection from their bodies. Since CPP symptoms often relate to sensitive issues such as sexual function and toileting, psychological approaches that promote interoceptive awareness with acceptance and non-judgment may enhance engagement with physiotherapy [28].

Research consistently shows that individuals with CPP experience high levels of psychological distress, with common impairments in daily functioning. The presence of comorbid mental health conditions alongside chronic physical health issues often leads to poorer outcomes. Thus, it is essential to identify, assess, and manage these comorbid mental health conditions to effectively treat CPP. Healthcare providers must determine whether psychological difficulties, such as anxiety around medication, depression-induced inactivity, or post-traumatic stress disorder (PTSD) symptoms, could hinder treatment engagement. Depending on the severity of these issues and the resources available, these conditions may need to be addressed before or alongside CPP treatment. When comorbid mental health problems are mild to moderate and closely linked to CPP, offering psychological interventions in conjunction with other CPP treatments is often ideal. Ignoring these issues can lead to frustration and failure for both patients and healthcare teams, potentially increasing healthcare costs [29].

It is important to recognize that most patients with CPP are women of reproductive age, often balancing various aspects of their lives, including work or study, social relationships, sexual health, and family planning. Encouraging women to reflect on how their lifestyle choices impact their pain is essential. While some women may already be aware of the issues contributing to their pain and need validation and encouragement to make changes, others may benefit from keeping a diary to identify problem areas. In such cases, the physiotherapist or psychologist may need to collaborate with the patient to implement lifestyle changes effectively [30]. Interestingly, the COVID-19 pandemic has shifted the focus towards self-management, even for conditions traditionally managed medically or surgically, such as endometriosis. Although there is limited evidence specifically linking lifestyle changes to CPP, general chronic pain literature supports the positive impact of sleep, pacing, and stress reduction on pain management. Exercise is widely recognized as beneficial for chronic pain, but it may also trigger or exacerbate pain in some cases, so it is usually guided by physiotherapists, particularly when a musculoskeletal component is identified [31].

Dietary factors are more complex, as many women with CPP also have overlapping conditions like irritable bowel syndrome (IBS) and bladder pain syndrome, which often require specific dietary modifications. While some women experience significant benefits from these changes, others may struggle to combine multiple dietary strategies, such as the FODMAP diet or an anti-inflammatory diet for endometriosis, leading to a nutritionally poor diet and reduced quality of life. In such cases, involving a dietitian as part of the multidisciplinary team becomes essential. Diet has a clear impact on bowel and bladder function, and many women's health physiotherapists are skilled in discussing and advising on these areas. Toileting behavior also warrants attention, as some women may limit their fluid intake during the day to avoid needing to use the toilet at work or school, or to prevent incontinence, particularly common among adolescents. Modifying these behaviors can positively affect symptoms related to bladder irritation and pelvic floor tension. Overall, addressing lifestyle factors, in

conjunction with other treatments, can significantly enhance the management of chronic pelvic pain [32].

Complications

When addressing chronic pelvic pain, it is crucial to consider the patient's history of trauma, as many women with chronic pelvic pain also have a background of abuse and may suffer from comorbid posttraumatic stress disorder (PTSD). This trauma history can significantly influence the experience and management of their pain. For patients with gynecological causes of chronic pelvic pain who choose to undergo elective hysterectomy, it is important to note that postoperative pelvic pain may persist despite the surgery [33].

Additionally, opioid analgesics, often used to manage chronic pelvic pain, can lead to tolerance over time, necessitating increased dosages to achieve adequate pain relief. Insomnia is a common issue in patients with centralized pain disorders and should be appropriately addressed to improve overall management and quality of life. In cases of chronic pelvic pain, laparoscopic surgery often yields inconclusive results, with about forty percent of procedures failing to identify a definitive source of the patient's pain. Furthermore, complications such as infection and bleeding are potential risks associated with both laparoscopic surgery and hysterectomy [34].

Future directions

Managing chronic pelvic pain effectively requires a multidisciplinary team of healthcare professionals, including physical therapists, psychologists, pharmacists, and specialists from various fields. The high morbidity associated with chronic pelvic pain underscores the need for comprehensive management. Clinicians should maintain a high level of suspicion for chronic pelvic pain, particularly in patients with a history of chronic pain or ongoing chronic conditions. Typically, the primary clinician is responsible for diagnosing and treating the primary source of chronic pelvic pain. Addressing comorbid conditions, such as irritable bowel syndrome or major depressive disorder, is also crucial for managing chronic pain. Referrals may be necessary to gynecological surgeons for diagnostic exploratory laparotomies or elective laparoscopic hysterectomies [35]. If the bladder is suspected to be the source of pain, consultation with a urologist might be needed for further evaluation. Pain management specialists can offer a range of interventions, including trigger point injections, nerve blocks, radiofrequency ablation, spinal cord stimulation, biofeedback therapy, and relaxation exercises. Depending on the severity of the pain, prescription pain medications may be required. Pharmacists play a key role in coordinating care, ensuring patients understand their medications, and providing guidance on usage and side effects. Physical therapists contribute by providing stretching exercises, relaxation techniques, and pelvic floor muscle strengthening. Cognitive-behavioral therapists assist patients in coping with and understanding their pain, often utilizing biofeedback techniques. Pain management nurses are essential for patient assessment and education. Chronic pelvic pain often necessitates ongoing treatment and management throughout a patient's life. Effective reduction of morbidity can only be achieved through a collaborative, interprofessional approach, employing a variety of diagnostic and therapeutic strategies [36].

Conclusion

Managing chronic pelvic pain requires a comprehensive strategy that addresses each patient's unique needs. While medications can provide relief, it is important to also address the root causes of pain through physical therapy, psychological support, and, if needed, surgical

options. New developments in minimally invasive procedures and integrative medicine offer promising alternatives. Future research must focus on improving diagnostic methods, exploring new treatment options, and fostering collaboration across specialties to advance CPP management. A patient-focused approach that acknowledges the various causes and the impact on quality of life is crucial for achieving effective management and enhancing patient satisfaction.

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