

Handbook of Non-Cancer Chronic Pain Care

(Public Version)



衛生福利部
食品藥物管理署
Taiwan Food and Drug Administration



Preface

According to the definition provided by the International Association for the Study of Pain (IASP), pain is an unpleasant sensory and emotional experience. Generally, when pain persists for more than three months, it is categorized as chronic pain.

In order to enhance awareness among non-cancer chronic pain patients about pain treatment and the use of potentially narcotic drugs, Taiwan Food and Drug Administration (TFDA) has commissioned Chi Mei medical center, to collaborate with experts and scholars in pain medicine, anesthesiology, psychiatry, rehabilitation, surgery, urology, gastroenterology, radiology, palliative medicine, pharmacy, and nursing within the country to jointly compile this handbook. The handbook is organized into chapters covering various aspects of chronic pain, including its causes, assessment methods, care objectives and strategies, common pain relief management, rehabilitation treatment, psychological care, medication treatment (both addictive and non-addictive), patient's self-care, and caregiver education.

We hope that this handbook will serve as a reference for caregivers and individuals suffering from non-cancer chronic pain, allowing them to alleviate pain, improve quality of life, and ensure safety administration of medications.

Director-General of Taiwan Food and Drug Administration,
Ministry of Health and Welfare



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Chronic Pain Care** (Public Version)

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CONTENTS

Handbook of Non-Cancer Chronic Pain Care (Public Version)

1. Overview of Non-Cancer Chronic Pain Care.....	13
(1) Introduction	
(2) Goals of chronic pain care	
(3) Standard model of care	
(4) Self-care practices for patients	
(5) Use of non-opioid analgesics	
(6) Use of opioid analgesics	
(7) Information for family and caregivers	
2. Causes of Non-Cancer Chronic Pain	19
(1) Introduction	
(2) Classification of pain	
(3) Common types of chronic pain	
3. Pain Assessment.....	27
(1) Introduction	
(2) Common types of chronic pain	
(3) Explanation of terms related to neuropathic pain	
(4) Assessment of chronic pain	
(5) Assessment of pain characteristics	
(6) Understand past medical history	



CONTENTS
Handbook of Non-Cancer
Chronic Pain Care (Public Version)

- (7) Assessment of current medical condition
- (8) Assessment of activities of daily living
- (9) Assessment of psychological and mental status
- 4. Goals and Strategies for Non-Cancer Chronic Pain Care ... 35
 - (1) Introduction
 - (2) Goals for chronic pain care
 - (3) Strategies for chronic pain care
 - (4) Important concepts and therapies for chronic pain care
- 5. Common Methods for Non-Cancer Chronic Pain Care 43
 - (1) Introduction
 - (2) Common chronic pain
 - (3) Comorbidities that form a vicious cycle with chronic pain
 - (4) Examples of chronic pain care
- 6. Rehabilitation Treatment for Non-Cancer Chronic Pain51
 - (1) Introduction
 - (2) Goals of rehabilitation treatment
 - (3) Brief introduction of individual treatment options
- 7. Psychological Care for Non-Cancer Chronic Pain57
 - (1) Introduction
 - (2) Brief introduction of psychotherapy



CONTENTS
Handbook of Non-Cancer
Chronic Pain Care (Public Version)

(3) Cognitive-behavioral therapy	
(4) Acceptance and commitment therapy	
(5) Motivational interviewing	
(6) Mindfulness-based stress reduction meditation therapy	
(7) Relaxation training	
(8) Art and music therapy	
(9) Skillful use of reframing	
(10) Nourish the soul and seek support	
(11) Involvement of family members	
8. The Use of Non-Opioid Analgesics	65
(1) Introduction	
(2) Acetaminophen	
(3) Non-steroidal anti-inflammatory drugs	
(4) Antidepressants	
(5) Anticonvulsants	
(6) Muscle relaxants	
(7) Local anesthetic patches	
(8) Capsaicin cream or patches	
(9) Recommended dosage for medication use	



CONTENTS
Handbook of Non-Cancer
Chronic Pain Care (Public Version)

9. The Use of Opioid Analgesics73

- (1) Introduction
- (2) Principles of using opioid analgesics
- (3) Precautions when using opioid analgesics
- (4) Precautions for individual opioid analgesics for home use

10. Self-Care Practices for Patients95

- (1) Introduction
- (2) Self-care practices for chronic pain
- (3) Cultivate exercise habits
- (4) Balance work and rest
- (5) Maintain good sleep quality
- (6) Maintain a balanced and healthy diet
- (7) Release stress or enhance resilience
- (8) Use meditation and maintain a positive mindset
- (9) Skillful use of reframing
- (10) Nourish the soul and seek support

11. Information for Family Members and Caregivers 105

- (1) Introduction
- (2) Understand the patient's condition and the treatment he/she will receive
- (3) Assist the patient in receiving treatment



CONTENTS
Handbook of Non-Cancer
Chronic Pain Care (Public Version)

- (4) Pay attention to the patient's medication safety
- (5) Assist the patient in promoting physical and mental health and relieving stress
- (6) Caregivers' self-relief and resilience enhancement
- 12. Comorbidity of Non-Cancer Chronic Pain and Mental Disorders 111
 - (1) Introduction
 - (2) Chronic pain and depression
 - (3) Chronic pain and anxiety disorders
 - (4) Chronic pain and bipolar affective disorder
 - (5) Chronic pain and post-traumatic stress disorder
 - (6) Chronic pain and sleep disorders
 - (7) Chronic pain and substance use disorders
 - (8) Chronic pain and suicide
 - (9) Chronic pain and sexual abuse
 - (10) Chronic pain and smoking
 - (11) Chronic pain and alcohol abuse
- 13. Neuropathic Pain and Treatment 117
 - (1) Introduction
 - (2) Clinical manifestations of neuropathic pain
 - (3) Explanation of common terms related to neuropathic pain



CONTENTS
Handbook of Non-Cancer
Chronic Pain Care (Public Version)

- (4) Impact of neuropathic pain on physical function and emotions
- (5) Common neuropathic pain and their clinical characteristics
- (6) Treatment of neuropathic pain
- 14. Myofascial Pain and Treatment125
 - (1) Introduction
 - (2) Explanation of common terms
 - (3) Characteristics of myofascial pain
 - (4) Assessment of myofascial pain
 - (5) Treatment of myofascial pain
- 15. Chronic Pancreatitis Pain and Treatment133
 - (1) Introduction
 - (2) Etiology of chronic pancreatitis
 - (3) Treatment recommendations for chronic pancreatitis pain
- 16. Treatment of Non-Cancer Chronic Pain in the Elderly ..137
 - (1) Introduction
 - (2) Common pain-related problems in the elderly
 - (3) Decrease in organ function in the elderly
 - (4) Understanding of relevant care knowledge by caregivers



CONTENTS
Handbook of Non-Cancer
Chronic Pain Care (Public Version)

- (5) Medication treatment
- (6) Exercise and rehabilitation therapy
- (7) Other treatments
- (8) Strengthening family and social support
- (9) Evaluation of treatment effectiveness
- 17. Lower Back Pain and Treatment.....145
 - (1) Introduction
 - (2) Causes of lower back pain
 - (3) Treatment strategies for chronic lower back pain
- 18. Fibromyalgia and Treatment151
 - (1) Introduction
 - (2) Clinical symptoms of fibromyalgia
 - (3) Common treatment methods for fibromyalgia
- 19. Headache (Including Migraine) and Treatment159
 - (1) Introduction
 - (2) Treatment methods

Chapter 1

Overview of Non-Cancer Chronic Pain Care



1. Introduction

- 1.1. The definition of non-cancer chronic pain (referred to as chronic pain below) is pain caused by non-cancer origin and lasts for more than three months. The causes of pain are often complex. At the beginning, it may be due to physical, visceral, or neural damage. However, many other factors contribute to the chronicization of pain, including physical factors (pre-existing diseases and other comorbidities), psychological factors (mental, emotional, and spiritual), and insufficient social (family, friends, and community) support.
- 1.2. The strategy for treating chronic pain should target the causes and use a multidimensional care approach that includes physical care, psychological care, and strengthening of social (family, friends, and community) support to achieve the best therapeutic effect.

2. Goals of chronic pain care

- 2.1. Overall goal: Relieve pain, restore physical health, and enhance emotional well-being.
- 2.2. Sub-goals:
 - (1) Relieve physical pain and restore life function.
 - (2) Maintain good emotional well-being and improve quality of life.
 - (3) Strengthen social support (family, friends, and community).

3. Standard model of care

The standard treatment model for chronic pain internationally is divided into four stages based on the difficulty of curing the chronic pain condition:

Stage 1: Patients engage in self-pain management (promoting physical and mental health, such as self-rehabilitation through exercise, stress relief activities, yoga, tai chi, mindfulness, etc.) while also practicing self-care and managing pain-related comorbidities (such as self-care for chronic diseases).

Stage 2: When the treatment in Stage 1 is not effectively relieving the pain, additional non-pharmacological treatments provided by healthcare professionals are added (such as rehabilitation therapy, psychiatric consultations, and psychological therapy).

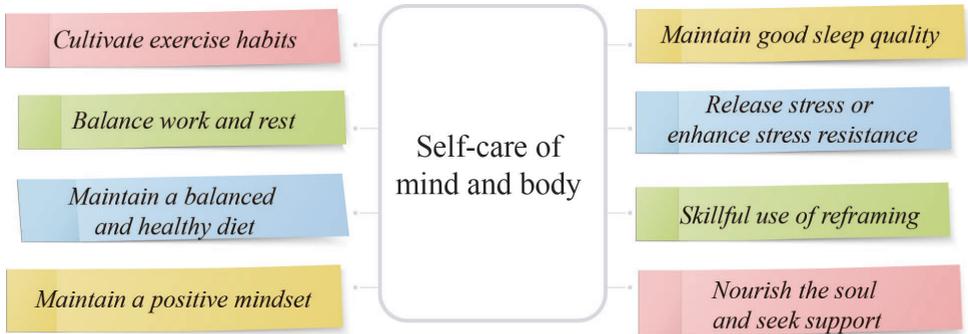
Stage 3: When the treatment in Stage 2 is not effectively relieving the pain, additional non-opioid pharmacological treatments provided by healthcare professionals are added (such as tricyclic antidepressants, anticonvulsants, and other analgesic drugs).

Stage 4: When the treatment in Stage 3 is not effectively relieving the pain, additional interdisciplinary team interventions are added, targeting the factors contributing to the pain (such as interventional treatments: nerve block procedures and surgery). In certain special circumstances (where the assessed treatment benefits outweigh the risk of addiction), intermittent use of opioid medications may be considered.

Note: (1) This is the four-stage chronic pain treatment model released by the U.S. Department of Veterans Affairs in 2017 and is currently the only international treatment guideline. (2) In the four-stage treatment model, stage 1 is the most important and is the basic treatment for non-cancer chronic pain. Stage 2 through stage 4 are sought at the hospital, but these treatments still require active participation and cooperation from patients.

4. Self-care practices for patients

- 4.1. In the treatment of chronic pain, self-care is particularly important. It is recommended that patients not only actively participate in various treatments provided by hospitals, such as medication, surgery, rehabilitation, etc., but also take appropriate care of their pre-existing chronic conditions.
- 4.2. Additionally, it is recommended to incorporate the following self-care practices (please see Chap.7 in for details)



5. Use of non-opioid analgesics

- 5.1. Non-opioid analgesics can be used in the treatment of non-cancer chronic pain, as the third and fourth stages in the four-stage treatment model for non-cancer chronic pain.
- 5.2. Non-opioid analgesics used in the treatment of non-cancer chronic pain include acetaminophen, non-steroidal anti-inflammatory drugs, antidepressants, anticonvulsants, muscle relaxants, local anesthetic patches, and other patch formulations.

6. Use of opioid analgesics

- 6.1. Opioid analgesics are addictive narcotic drugs. Misuse or abuse of these drugs can lead to addiction. Please use them under medical guidance.
- 6.2. Opioid analgesics can be used to treat non-cancer chronic refractory pain, as the fourth stage in the treatment.

7. Information for family and caregivers

- 7.1. Understand the patient's condition and the treatment they will receive.
- 7.2. Assist the patient in receiving treatment.
- 7.3. Pay attention to the patient's medication safety.
- 7.4. Assist the patient in maintaining physical and mental health and releasing stress.
- 7.5. Caregivers should also practice relaxation and improve stress resistance.

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Chapter 2

Causes of Non-Cancer Chronic Pain

1. Introduction

1.1. The definition of non-cancer chronic pain (hereinafter referred to as chronic pain) is pain of non-cancer origin and lasts more than 3 months. The causes of pain are often complex. At the beginning, it may be caused by physical, visceral or nerve damage, but later many other factors contribute to the chronicity of pain, as explained below:

(1) Physical (physiological) factors

- The original injury persists.
- Persistent pain has caused central nervous system sensitization.
- Nerve damage, whether peripheral or central nervous system.
- Co-existing chronic diseases (such as diabetes, joint diseases, immune system diseases) or poor physical health status, etc.

(2) Psychological factors

- When there are coexisting mental disorders such as anxiety, depression, sleep disorders, substance use disorders (such as sedative-hypnotics, alcohol, opioid-like drugs, and drugs), and other mental disorders.
- Past adverse pain experiences and adverse emotional reactions.

(3) Social factors

- When family, economic conditions, medical resources, and social support are insufficient, such as disabilities, living alone, elderly, poverty, and inconvenience in seeking medical treatment.
- Other factors.

1.2. When pain persists for a long time, it will change people's sleep, emotions, personality, and then affect work, hobbies, sexual life, social relationships, and lifestyle. When pain is not properly treated, the above aspects will interact with pain and worsen the overall condition, making it more difficult to treat.

1.3. Acute (short-term) pain has the following warning and protective functions:

- (1) Identify and locate harmful stimuli.
- (2) Activate escape response to reduce injury.
- (3) Inhibit activity at the injured site to facilitate wound healing and reduce inflammation.
- (4) Activate thinking and emotional responses to change the behavior of the injured person when facing potential harm in the future.

1.4. If pain cannot be cured for a long time and becomes chronic pain:

- (1) Its protective or warning function will be lost.
- (2) It can cause multi-dimensional effects on the body, mind, and interpersonal relationships, thereby aggravating pain.
- (3) Factors that induce pain will become increasingly complex over time, causing pain to become fixed and difficult to treat.

2. Classification of pain

Pain can generally be divided into two categories: tissue injury pain and neuropathic pain. However, it can also be classified into the following six types:

- 2.1. Tissue injury pain(nociceptive pain): Pain caused by damage to non-neuronal tissue.
 - (1) Pain receptors in the local area send pain signals to the central nervous system.
 - (2) Pain has a warning and protective function.
 - (3) Usually acute pain, but if not treated for an extended period, it may develop into chronic pain.
- 2.2. Neuropathic pain: Pain caused by damage to the nervous system, resulting in neuropathic disease or functional disorders.
 - (1) The response to harmful or harmless stimuli is enhanced, and spontaneous pain may occur even in the absence of stimulation.
 - (2) It does not have a warning and protective function and does not promote tissue healing.
 - (3) It is chronic pain, with complex causes and difficult to treat.

- (4) Examples include neuropathic pain caused by long-term diabetes, post-herpetic neuralgia, trigeminal neuralgia, central neuropathic pain caused by stroke, and neuropathic pain after peripheral nerve damage.
- 2.3. Inflammatory pain: Reactive pain caused by tissue inflammation, often classified as tissue injury pain.
- (1) The purpose is to accelerate tissue healing.
 - (2) It is easy to cause pain hypersensitivity in the skin and tissues of the injured area.
 - (3) There is no neuropathic disease or functional disorders.
 - (4) Usually acute pain, but if not treated appropriately, it may become chronic pain.
- 2.4. Central nervous system sensitization pain: When harmful or inflammatory pain exists for a long time, it may cause sensitization of the central nervous system such as the spinal cord or brain, forming central nervous system chronic pain.
- 2.5. Pain related to psychological/psychiatric factors: Usually related to long-term strong inner pressure, such as fibromyalgia, irritable bowel syndrome, psychosomatic pain, and other visceral or organ dysfunction pain. This type of pain belongs to central nervous system chronic pain.



2.6. Pain induced by excessive use of opioid-like drugs: When opioid-like drugs are excessively used for a long time, it may induce changes in the central nervous system's regulation of pain, making the patient more sensitive to pain stimuli, thus aggravating the severity of the patient's pain. In addition, when gradually stopping the use of opioid-like drugs, the severity of the patient's pain will also gradually decrease. This pain belongs to central nervous system chronic pain.

3. Common types of chronic pain

3.1. Pain caused by non-neural tissue injury to the body and internal organs:

- (1) Head and neck pain (myofascial pain, cervical degenerative disease).
- (2) Spine-related diseases (degenerative diseases of the spine or intervertebral discs, spinal stenosis, and others).
- (3) Joint and myofascial pain (osteoarthritis, rheumatoid arthritis, myofascial pain).
- (4) Visceral pain (pancreatitis, inflammatory bowel disease, endometriosis, interstitial cystitis).

3.2. Pain caused by damage or sensitization of the nervous system:

- (1) Brain injury or damage: Such as hemorrhagic or ischemic stroke, car accident trauma, etc.

- (2) Spinal cord injury or damage: Such as spinal cord injury, syringomyelia, spinal cord vascular hemorrhage or infarction, tumor compression or invasion, multiple sclerosis, neural tube defects, etc.
- (3) Peripheral nerve damage: Such as diabetic neuropathy, HIV-induced neuropathy, postherpetic neuralgia, carpal tunnel syndrome, trigeminal neuralgia, phantom limb pain, post-mastectomy pain syndrome, spinal nerve root lesion pain, nerve laceration injury, tumor compression or invasion, nerve damage caused by limb amputation.
- (4) Dysfunction of the sympathetic nervous system: Complex regional pain syndrome (type I and type II).
- (5) Sensitization of the nervous system: Such as fibromyalgia, irritable bowel syndrome, and other psychosomatic disorders caused by long-term painful or inflammatory pain psychological stress.

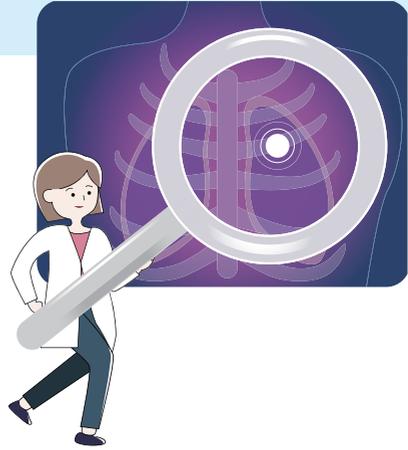
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Chapter 3

Pain Assessment



1. Introduction

- 1.1. The causes of chronic non-cancer pain (referred to as chronic pain hereafter) are often complex. Initially, it may be caused by injury to the body, organs, or the nervous system. However, many other factors contribute to the chronicization of pain.
- 1.2. When assessing chronic pain, it is advisable to first understand the common types of chronic pain and then conduct a multi-dimensional assessment of the causes of pain.

2. Common types of chronic pain

- 2.1. Pain caused by injury to non-neural tissues of the body or organs:
 - (1) Head and neck pain.
 - (2) Spinal-related diseases.
 - (3) Joint and musculoskeletal pain.
 - (4) Visceral pain.

2.2. Pain caused by nerve damage or sensitization (neuropathic pain) such as :

- (1) Brain injury or damage.
- (2) Spinal cord injury or damage.
- (3) Peripheral nerve damage.
- (4) Dysfunction of the sympathetic nervous system.
- (5) Sensitization of the nervous system.

3. Explanation of common terms related to neuropathic pain

3.1. Allodynia: These stimuli do not cause pain in normal individuals, but they induce pain in patients with neuropathic pain, such as :

- (1) Allodynia induced by changes in external temperature: The affected skin is abnormally sensitive to cold or heat.
- (2) Allodynia induced by vibration: e.g. brushing teeth.
- (3) Allodynia induced by static behavior: e.g. touching or pressing the affected area.

3.2. Dysesthesia: Unpleasant abnormal sensations that can occur spontaneously or be induced, such as burning sensation, dampness, electric shock sensation, needle-like sensation, or itching.

3.3. Hypalgesia: Decreased sensitivity to painful stimuli.

3.4. Hyperalgesia: Increased sensitivity to painful stimuli, resulting in intensified pain responses to stimuli that would normally cause pain.

- (1) Primary hyperalgesia: Enhanced pain response in the vicinity of the injured area.

- (2) Secondary hyperalgesia: Phenomenon of hyperalgesia in tissues adjacent to the injured area (but not injured), related to central nervous system sensitization.

4. Assessment of chronic pain

In medical practice, pain assessment often includes the following five dimensions (Figure 1):

- 4.1. Assessment of pain characteristics.
- 4.2. Understanding past medical history.
- 4.3. Assessment of current medical condition.
- 4.4. Assessment of psychological and mental status.
- 4.5. Assessment of activities of daily living.

Figure 1. Assessment of chronic pain



5. Pain assessment (use the English letter OPQRST to explain)

Items	illustrate
<u>Onset</u> of pain	When did the pain start? How long does each episode last? How often?
Factors provoking or relieving pain (<u>Provoking</u> / <u>Palliating</u>)	What factors can trigger it? What factors can mitigate it? What factors can make it worse?
<u>Quality</u> of pain	What does pain feel like? Such as sharp pain, dull pain , needle prick pain, burning pain, crush pain, etc.?
The area of pain and its range of radiation (<u>Region</u> / <u>Radiation</u>)	Where it hurts? How far does it diverge?
Pain <u>Severity</u>	Commonly used assessment scales are as follows: (—) Numerical scale (Figure 2): divide the severity of pain into 0-10, and 0 means no pain, 10 means unbearable pain, and let the patient tell the pain score. (二) Other scales selected according to the patient's condition: such as the multi-faceted pain assessment form, the pain scale for abnormal cognitive function, the pain scale for patients using ventilators, and the children's pain scale.
Previous <u>Treatment</u> experience	What pain treatments has the patient received in the past? Such as Chinese herbal medicine, folk therapy? Massage, acupuncture, medication or other treatments, etc.? How's the effect? What about side effects?

Figure 2. Assessment of pain severity (numerical scale, with 10 points)



Note: The items to be evaluated can include: Static time, activity time, the most painful time, the least painful time, after taking medicine, and after treatment; the total average within one day can also be evaluated.

6. Understand past medical history

- 6.1. History of pain: Location of pain, presence of trauma, previous treatments for pain (such as surgery, rehabilitation, nerve block procedures, pain medications, etc.).
- 6.2. Presence of other comorbidities: Such as hypertension, diabetes, stroke, heart disease, lung diseases, etc.

7. Assessment of current medical condition

- 7.1. Physical examination: Such as neurological examination.
- 7.2. Laboratory data examination: Such as blood tests, urine tests.
- 7.3. Imaging examination: Such as X-rays, magnetic resonance imaging(MRI), computed tomography(CT), and ultrasonography.

8. Assessment of activities of daily living (functional status)

Common assessment contents include the following (Figure 3):

- 8.1. Assessment of activities of daily living: Can refer to using a numerical scale (0-10 points) to assess, the content of assessment can include bathing, dressing, toileting, mobility, eating, etc.
- 8.2. Assessment of activities of daily living impairment level: Can refer to using a numerical scale (0-10 points) to assess, the content of assessment can include housework, education, work, social activities, leisure , sexual activity, exercise, sleep, emotions, etc.

Figure 3. The extent to which daily life is affected by pain (numerical scale, with 10 points)



9. Assessment of psychological and mental status

Assess whether the following mental disorders or a history of such disorders are also present:

- 9.1. Anxiety disorders, depressive disorders, bipolar affective disorder, post-traumatic stress disorder, or other mental disorders, and understand their severity.
- 9.2. History of substance use and abuse, including smoking, alcohol, drugs, and controlled substances.
- 9.3. History of suicide attempts.
- 9.4. Personal history of childhood abuse, harm, or abandonment.
- 9.5. Assessment of social relationships
 - (1) Interpersonal relationships, social support.
 - (2) Family relationships, whether neglected or overprotected.
 - (3) Work engagement status, satisfaction with work, whether work is perceived to harm personal physical health.
 - (4) Both current and past coping strategies for the above dissatisfactions.

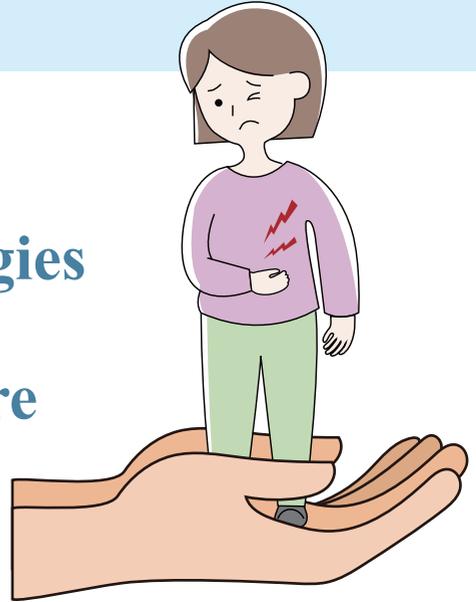


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Chapter 4

Goals and Strategies for Non-Cancer Chronic Pain Care



1. Introduction

- 1.1. The goals and strategies for the care of non-cancer chronic pain (referred to as chronic pain) should address the underlying causes of chronic pain and involve a multidimensional approach to care, including care for the body (existing diseases and comorbidities), care for the mind (mental, emotional, and spiritual well-being), and strengthening social support.
- 1.2. Additionally, if common contributing factors can be identified and prevented in the early stages of chronic pain formation, it is easier to halt the progression of chronic pain. When acute pain lasts longer than expected, the correct underlying cause should be identified and early treatment should be initiated.

2. Goals for chronic pain care

- 2.1. Overall goal: Relieve pain, restore physical health, and enhance emotional well-being.
- 2.2. Sub-goals:
 - (1) Alleviate physical pain and restore functional ability.
 - (2) Maintain good emotional well-being and improve quality of life.
 - (3) Strengthen social support (family, friends, and community).

3. Strategies for chronic pain care

The strategies for chronic pain care can be broadly categorized into care for the body, care for the mind, and strengthening social support:

- 3.1. Care for the body (restoring physical health):
 - (1) Provide appropriate treatment for pain and diseases: Appropriate treatment for existing pain, mental comorbidities, and related chronic illnesses, such as surgery, rehabilitation, nerve block procedures, and medication.
 - (2) Empower patients with the necessary skills for self-care of their illnesses, such as stroke rehabilitation, joint diseases, self-care for lower back pain, and appropriate exercise and lifestyle changes, to facilitate moderate restoration of functional abilities.

3.2. Care for the mind (enhancing emotional well-being):

- (1) Strengthen patients' understanding of chronic pain, including factors contributing to the illness, treatment options, potential follow-up care, and strategies for preventing recurrence.
- (2) Encourage active participation in disease prevention, treatment, and follow-up care.
- (3) Provide patients with mental, emotional, and spiritual support to foster positive emotions, inner peace, and improve quality of life.

3.3. Social support (from family, friends, and community):

Strengthen patients' social support network. Support from family and friends can greatly assist in the treatment of chronic pain. Seek assistance from social resources when necessary.

Note: The strategies mentioned above require active patient participation, self-motivation, and the setting of expectations (goals) regarding one's own physical condition and the level of recovery in order to be effective.

4. Important concepts and therapies for chronic pain care

4.1. Accurate understanding of the patient's condition:

- (1) Patients and their families should have a proper understanding of chronic pain.
- (2) After an injury, the affected area needs rest in the initial stage, but prolonged inactivity due to pain can lead to more health problems.
- (3) Comorbidities or unhealthy habits related to chronic pain should also be addressed and improved.

4.2. Changes in physical and mental states, promoting physical fitness and improving mood (promotion of physical and mental health):

(1) Physical fitness:

- Exercise is also a form of medical treatment, and effective pain management for most chronic pain patients should include maintaining physical activity (exercise). Exercise can activate the body's functions. Although temporary inactivity can temporarily relieve pain, long-term inactivity can lead to functional loss in the affected area, and the pain may not necessarily disappear. Therefore, it is recommended to continue and gradually increase the level of activity in the affected area.
- Regular therapeutic physical rehabilitation programs should be conducted to restore flexibility, muscle strength, endurance, and joint range of motion, reduce pain, and gradually restore the function of the affected area. In addition, active exercise, especially walking, can stimulate the brain and improve depression and anxiety.
- Content of therapeutic exercise:
 - ☆ Increasing joint range of motion
 - ☆ Stretching exercises
 - ☆ Muscle strength training
 - ☆ Enhancing cardiovascular function

These exercise routines require the patient's active and consistent participation in order to be effective.
- Types of therapeutic exercise:

- ☆ Rehabilitation therapy arranged in hospitals.
- ☆ Rehabilitation and exercises performed by patients themselves, such as dancing, walking, yoga, tai chi, and other gentle exercises.
- Chronic pain patients may feel discouraged during exercise due to pain in the affected area. Therefore, it should be gradually progressed without rushing.

(2) Improving mood: Maintaining good emotions.

- Reduce psychological (mental) stress.
- Maintain good sleep quality.
- Engage in self-training in psychological therapy provided by the hospital (see Chapter Seven for details).
- Patient self-care and health promotion (see Chapter Ten for details).

4.3. Strengthening social support (recovery of interpersonal relationships and social functioning):

- (1) One of the biggest negative impacts of chronic pain is social isolation. In the early stages of severe injury, the support system around the patient provides assistance quickly. However, when the pain persists for months without relief, the support system starts to become tense and shrink, and friends and family resume their lives, leaving the person in pain feeling alone and struggling.
- (2) When patients are in pain, their emotional agitation can negatively affect communication with others, leading to tense interpersonal relationships. The following methods can increase a patient's social (interpersonal) support:

- Active involvement of family members: Family members should have a moderate understanding of the patient's condition, adjust their coping attitudes (positive emotions), and enhance caregiving skills.
- Encourage patients to participate in social activities, such as neighborhood gatherings, going to church, or participating in activities of other religious organizations.
- Encourage patients to join relevant support groups and participate in activities.
- Seek assistance from social resources.

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Chapter 5

Common Methods for Non-Cancer Chronic Pain Care



1. Introduction

1.1. Internationally, the standard care model for non-cancer chronic pain (referred to as chronic pain) is divided into four stages of treatment based on the difficulty of treating chronic pain:

Stage 1: Patients engage in self-pain management (promoting physical and mental health, such as self-rehabilitation through exercise, stress relief activities, yoga, tai chi, mindfulness, etc.) while also practicing self-care and managing pain-related comorbidities (such as self-care for chronic diseases).

Stage 2: When the treatment in Stage 1 is not effectively relieving the pain, additional non-pharmacological treatments provided by healthcare professionals are added (such as rehabilitation therapy, psychiatric consultations, and psychological therapy).

Stage 3: When the treatment in Stage 2 is not effectively relieving the pain, additional non-opioid pharmacological treatments provided by healthcare professionals are added (such as tricyclic antidepressants, anticonvulsants, and other analgesic drugs).

Stage 4: When the treatment in Stage 3 is not effectively relieving the pain, additional interdisciplinary team interventions are added, targeting the factors contributing to the pain (such as interventional treatments: nerve block procedures and surgery). In certain special circumstances (where the assessed treatment benefits outweigh the risk of addiction), intermittent use of opioid medications may be considered.

Note: (1) This is the four-stage chronic pain treatment model released by the U.S. Department of Veterans Affairs in 2017 and is currently the only international treatment guideline. (2) In the four-stage treatment model above, stage 1 is the most important and is the basic treatment for non-cancer chronic pain. Stage 2 through stage 4 are sought at the hospital, but these treatments still require active participation and cooperation from patients.

2. Common chronic pain

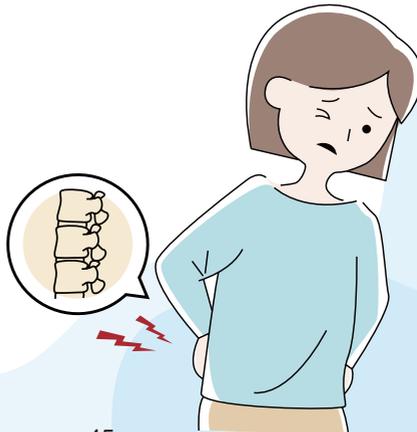
2.1. Pain caused by non-neural tissue injury to the body or viscera:

- (1) Head and neck pain (myofascial pain, cervical degenerative diseases).
- (2) Spinal-related diseases (spinal degenerative diseases, spinal stenosis, and others).

- (3) Joint and myofascial pain (osteoarthritis, rheumatoid arthritis, myofascial pain).
- (4) Visceral pain (pancreatitis, inflammatory bowel disease, endometriosis, interstitial cystitis).

2.2. Pain caused by nerve system damage or sensitization:

- (1) Brain injury or damage, such as hemorrhagic or ischemic stroke.
- (2) Spinal cord injury or damage, such as spinal cord injury, spinal cord hemorrhage, or ischemia.
- (3) Peripheral nerve damage: Such as diabetic neuropathy, HIV-induced neuropathy, postherpetic neuralgia, carpal tunnel syndrome, trigeminal neuralgia, phantom limb pain, post-mastectomy pain syndrome, spinal nerve root lesion pain, nerve laceration injury, tumor compression or invasion, nerve damage caused by limb amputation.
- (4) Dysfunction of the sympathetic nervous system: Complex regional pain syndrome (type I and type II).
- (5) Sensitization of the nervous system: Such as fibromyalgia, irritable bowel syndrome, and other psychosomatic disorders caused by long-term painful or inflammatory pain psychological stress.



3. Comorbidities that form a vicious cycle with chronic pain

- 3.1. Mental comorbidities: Depression, anxiety disorders, bipolar disorder, post-traumatic stress disorder, sleep disorders, substance use disorders, smoking, alcohol abuse, etc.
- 3.2. Physical comorbidities: Diabetes, joint diseases, immune system diseases, or poor physical health status.



4. Examples of chronic pain care

Due to the complex causes of chronic pain, treatment methods should be individually designed based on the disease and the patient's condition, following the four-stage model.

4.1. Treatment for lower back pain

The causes of chronic lower back pain are very complex, and the cause of the pain should be identified and treated as a priority. If the lower back pain is caused by incorrect posture, the following treatment methods can be considered:

(1) First stage treatment (self-care):

Understanding the cause of the pain, correcting posture and movements in daily life, and promoting self-care for physical and mental health.

(2) Second stage treatment (non-pharmacological treatment):

Rehabilitation therapy (traction), stretching and strengthening exercises, massage, home rehabilitation and exercise training, avoiding behaviors or movements that may induce pain, and making lifestyle or work-related changes.

(3) Third stage treatment (medication treatment, non-opioid drugs):

Non-steroidal anti-inflammatory drugs, acetaminophen, muscle relaxants, antidepressants, anticonvulsants, and local anesthetics patches.

(4) Fourth stage treatment:

Interventional therapy (1) Epidural space (lumbar or sacral) steroid injections, selective nerve block, facet joint injections, radiofrequency treatment, spinal cord stimulation. (2) Other interventional therapies (injections, puncture therapy).

Surgical treatment (1) Necessary surgical treatment based on the diagnosis and opinions of orthopedic, neurosurgical, and related disease specialists. (2) Surgical treatment in emergency situations. (3) Use of opioid drugs: Consider other treatment methods to relieve pain first. When other therapies are ineffective, consider the benefits and risks of opioid drug treatment before using them.



4.2. Treatment for myofascial pain

The principles of treating myofascial pain are to improve the causes of myofascial pain and structural mechanical imbalances (incorrect posture), as well as to improve comorbidities such as emotional, mental disorders, and neuroskeletal structural diseases.

(1) First stage treatment (self-care):

Exercise, physical therapy, posture control, and reducing mental stress.

(2) Second stage treatment (non-pharmacological treatment):

Ultrasound therapy, electrical therapy, massage, acupuncture or dry needling therapy, and supplementation of micronutrients.

(3) Third stage treatment (medication treatment):

Non-steroidal anti-inflammatory drugs, muscle relaxants, benzodiazepines, antidepressants, and local anesthetics patches.

(4) Fourth stage treatment:

Tramadol (a weak opioid analgesic) for pain relief, but long-term use should be avoided. Local injection of botulinum toxin can reduce pain caused by trigger points and muscle spasms.

4.3. Treatment for neuropathic pain

- (1) Neuropathic pain is caused by nerve damage or sensitization, and its treatment is difficult. It is the most challenging chronic pain to treat. It is recommended to adopt a multidisciplinary and multimodal approach to treatment, following the four-stage chronic pain treatment model released

by the US Department of Veterans Affairs in 2017, to care for these patients. Priority should be given to the therapies in the first and second stages.

(2) First-stage treatment

- Self-care for patients may include:
- Cultivate exercise habits.
- Balance work and rest.
- Maintain good sleep.
- Balance a healthy diet.
- Release stress or improving stress resistance.
- Maintain a positive mindset.
- Skillfully use cognitive reframing.
- Nourish the soul and seeking support.

(3) Second-stage treatment

Combining non-pharmacological treatments (including psychological therapy) provided by healthcare professionals.

(4) Third and fourth-stage treatment

Anticonvulsant and antidepressant medications can provide partial efficacy. However, the efficacy of opioid medications is not ideal.



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Chapter 6

Rehabilitation Treatment for Non- Cancer Chronic Pain



1. Introduction

- 1.1. When pain occurs, patients often avoid activities and exercise due to pain. Over time, this can cause muscle atrophy, spasms, and joint stiffness throughout the body, leading to weakened and lost function in the affected area. However, the pain does not disappear.
- 1.2. Exercise can restore flexibility, muscle strength, endurance, and joint range of motion in the body, and activate the tissues in the affected area, thereby reducing bodily pain.
- 1.3. Regular exercise, especially walking, activates the areas of the brain responsible for emotional function, which can improve mood and reduce depression.

2. Goals of rehabilitation treatment

- 2.1. Restore joint range of motion, muscle function, and relieve pain.
- 2.2. Restore daily routines and independent living abilities.

3. Brief introduction of individual treatment options

3.1. Exercise therapy

- (1) Restore joint mobility and stretching exercises: Restore joint range of motion and muscle stretching exercises caused by disease or pain, returning it to its pre-disease state.
- (2) Muscle strength training: Restore muscle atrophy and spasms caused by disease or pain. In the initial stage, exercises that do not require any equipment and are not limited to specific locations, such as push-ups, sit-ups, pull-ups, and squats without weights, can be performed. Further training can be done using resistance equipment and devices, including:
 - Strength training performed with specific joints immobilized (e.g. pushing, pulling, deadlifting).
 - Strength training performed with the same resistance (e.g. bicep curls using dumbbells).
 - Strength training performed at specific speeds (e.g. cable pulley exercises).
- (3) Proprioception and balance training: Train the coordination between sensation and movement to prevent falls and associated pain injuries, and reduce

the risk of muscle strains caused by the body's attempt to prevent falls.

- (4) Endurance training: Low-intensity but repetitive exercises that can strengthen muscle endurance and cardiovascular function.

3.2. Manual therapy

Through pressing, loosening, massaging, correcting, and other techniques, to achieve the goal of relieving pain, stretching muscles, and expand joint range of motion.

- (1) Massage.
- (2) Mobilization techniques.
- (3) Correction techniques.

3.3. Traction therapy

This is a commonly used treatment method for patients with spinal vertebral pain. It involves using devices to continuously or intermittently pull the joints apart, relieving pressure on the nerves caused by intervertebral disc cartilage, bone spurs, or inflamed tissues. It can also alleviate numbness, pain, muscle or tendon tension, and other symptoms caused by the body's attempt to prevent falls.

- (1) Cervical traction.
- (2) Lumbar traction.

3.4. Hydrotherapy

Using whole-body hydrotherapy (water temperature between 32 ~ 37 degrees Celsius) or local hydrotherapy (water temperature between 40 ~ 42 degrees Celsius), and utilizing various physical properties of water (such as viscosity, buoyancy, hydrostatic pressure) to design individualized treatments based on patient needs.

- (1) Viscosity: Can be used for resistance and muscle strength training.
- (2) Buoyancy: Can reduce weight-bearing exercise (suitable for patients with joint pain or obesity).
- (3) Hydrostatic pressure: Can reduce limb swelling.

3.5. Treatment using energy emitted by equipment and devices

- (1) Superficial heat therapy.
- (2) Deep heat therapy.
- (3) Electrotherapy.
- (4) Iontophoresis therapy.
- (5) Ultrasound therapy.

3.6. Using aids to assist treatment

- (1) General assistive devices.
- (2) New technology aids.

3.7. Injection therapy

- (1) Autologous platelet plasma injection therapy.
- (2) Hyaluronic acid injection.
- (3) Botulinum toxin injection.

3.8. Regular exercise performed by patients themselves

- (1) Walking, brisk walking, jogging, tai chi.
- (2) Swimming, dancing, yoga.
- (3) Cycling.
- (4) Other fitness activities.

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Chapter 7

Psychological Care for Non-Cancer Chronic Pain



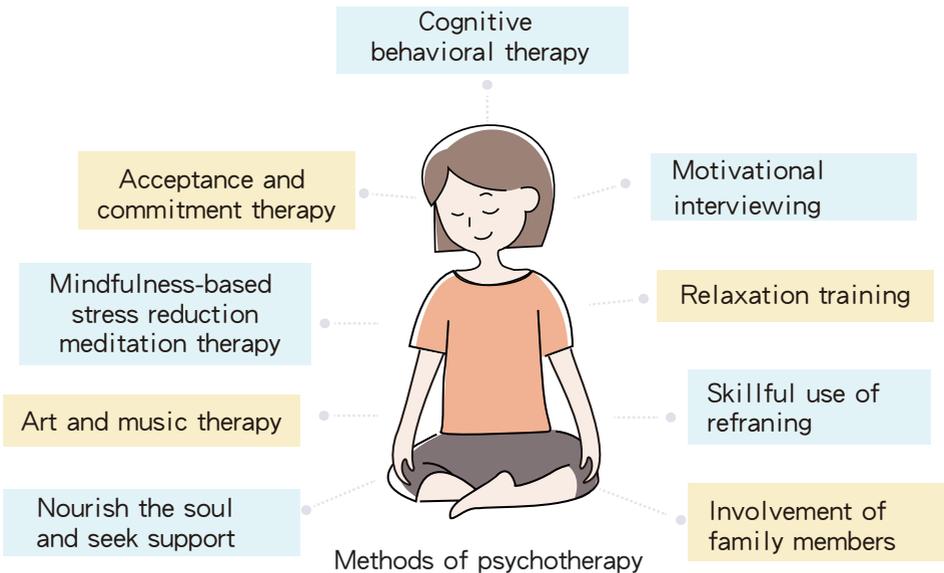
1. Introduction

- 1.1. According to the definition provided by the International Association for the Study of Pain, pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.
- 1.2. Negative past experiences of patients such as anger, sadness, and anxiety can increase the severity of existing pain, while positive past experiences such as happiness, joy, and love can decrease the severity of existing pain.
- 1.3. The goals of psychological care for non-cancer chronic pain (referred to as chronic pain) are as follows:
 - (1) Goal: Alleviating pain and enhancing positive emotions.
 - (2) Sub-goals: Reducing pain, minimizing medication use, increasing social interactions, improving psychological well-being, etc.

2. Brief introduction of psychotherapy

Commonly used psychotherapies include those provided by medical units and those that patients can practice on their own (Figure 1).

- 2.1. Cognitive-behavioral therapy
- 2.2. Acceptance and commitment therapy
- 2.3. Motivational interviewing
- 2.4. Mindfulness-based stress reduction meditation therapy
- 2.5. Relaxation training
- 2.6. Art and music therapy
- 2.7. Skillful use of reframing
- 2.8. Nourish the soul and seek support
- 2.9. Involvement of family members



3. Cognitive-behavioral therapy

- 3.1. Cognitive-behavioral therapy is the most widely used psychological treatment method, commonly used to treat depression, anxiety disorders, eating disorders, etc.
- 3.2. The focus of pain cognitive-behavioral therapy is:
 - (1) In terms of cognition: helping patients understand the causes and risk factors of chronic pain and making a commitment to overcome them.
 - (2) In terms of behavior: encouraging patients to actively engage in activities and exercises to cope with chronic pain.

4. Acceptance and commitment therapy

- 4.1. Acceptance and commitment therapy promotes flexibility in patients' cognition of adverse events (reframing, going with the flow) and takes action to pursue new accepted goals.
- 4.2. Practical methods include:
 - (1) Guiding patients to be aware of negative thoughts but not react to them.
 - (2) Rethinking and reframing.
 - (3) Focusing on goals consistent with life values.
 - (4) Taking action to ultimately increase psychological flexibility.

5. Motivational interviewing

- 5.1. Commonly used to assist patients with alcohol or substance addiction in changing addictive behavior patterns, with the goal of finding inner motivation for behavior change and preparing for further behavior change.
- 5.2. Methods include expressing empathy, avoiding arguing, reinforcing the internal motivation needed for behavior change, and supporting patients in adapting to new changes.

6. Mindfulness-based stress reduction meditation therapy

- 6.1. Mindfulness meditation is a form of introspective practice that emphasizes focusing thoughts on the present moment and diminishing negative thoughts.
- 6.2. Patients can adopt a sitting or lying posture, directing their attention to the present moment, temporarily clearing their minds of current concerns. They observe their breath and systematically concentrate on various parts of the body, starting from the toes and slowly moving up to the head, observing and accepting sensations in different parts of the body.
- 6.3. Positive thinking, considering the positive aspects of things.
- 6.4. Thinking about past positive experiences and giving oneself a pleasant mental vacation.

7. Relaxation training

- 7.1. Relaxation training includes learning techniques such as meditation, abdominal breathing, progressive muscle relaxation, and guided imagery.
- 7.2. Learning relaxation techniques can be helpful for many chronic pain patients, especially during times of increased pain.
- 7.3. Maintain a pleasant state every day by using the senses and bodily sensations to appreciate the beauty around us, such as appreciating the beauty of nature, smelling the fragrance of flowers, listening to elegant music, savoring delicious food and desserts, and embracing loved ones.

8. Art and music therapy

- 8.1. Chronic pain patients can use art and music to express their inner perceptions, feelings, and relieve inner stress, as well as stabilize and regulate emotions.
- 8.2. Art and music therapy can be chosen based on personal preferences and taste.

9. Skillful use of reframing

Pain can trigger negative emotions, which in turn can intensify the perception of pain. Therefore, reducing negative emotions can improve the experience of pain. Patients can use shifting thoughts to reduce negative emotions. Patients can also seek advice from a trusted friend or family member who has a

positive and supportive mind, share patients' concerns and pain with them, listen to their opinions and suggestions, and shift the focus of patients' lives to matters other than pain, such as completing important tasks patients have been wanting to do, caring for family and friends, and helping those in need. This can enrich patients' sense of achievement and reduce the impact of pain, thereby diminishing it.

10. Nourish the soul and seek support

Long-term pain can deplete one's passion, happiness, and hope. It is important to nourish our souls and seek sources of support. Patients may try to do the follows.

- 10.1. Cultivate a grateful heart: Our growth and development are supported and nurtured by various people. First and foremost, we should be grateful to our parents, teachers, friends, superiors, colleagues, and many others, including our children (who bring us joy and hope), and many more. If we hold a grateful heart, our inner self will be calm, healthy, and strong. We can try to write down several people or things we are grateful for each day to enrich our souls.
- 10.2. Seek support: There are many ways to do this. For example, patients can join a religious group and seek support and assistance from a higher power through prayer, both in everyday life and when facing pain. Patients can also join support groups or organizations that help patients. Additionally, increasing interpersonal interactions is also a way to seek support.

11. Involvement of family members

- 11.1. The changing condition of chronic pain patients is closely connected to their relationships with family and community.
- 11.2. Having family members, especially spouses, participate and assist in the patient's treatment can lead to better treatment outcomes.

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Chapter 8

The Use of Non-Opioid Analgesics



1. Introduction

- 1.1. Non-opioid analgesics can be used for the treatment of non-cancer chronic pain, as part of the third and fourth stages of the four-stage treatment model for non-cancer chronic pain.
- 1.2. Non-opioid analgesics used for the treatment of non-cancer chronic pain include acetaminophen, non-steroidal anti-inflammatory drugs, antidepressants, antiepileptic drugs, central-type muscle relaxants, local anesthetic patches, and other patch formulations.

2. Acetaminophen

- 2.1. Action: Used for the treatment of mild to moderate pain and has antipyretic effects.

- 2.2. Indications: Pain caused by muscle, bone, and other non-neural tissues.
- 2.3. Side effects or contraindications:
 - (1) Precautions should be taken for its hepatotoxicity, especially in patients with pre-existing liver dysfunction, concomitant alcohol use, or use of this medication in doses exceeding 4 grams per day.
 - (2) Acetaminophen has no renal toxicity or gastrointestinal and cardiovascular toxicity.

3. Non-steroidal anti-inflammatory drugs

- 3.1. Action: Used for the treatment of mild to moderate pain and has anti-inflammatory and antipyretic effects.
- 3.2. Indications: Acute or chronic pain caused by muscle, bone, and other non-neural tissues, not recommended for long-term use.
- 3.3. Side effects or contraindications:
 - (1) Cardiac toxicity: These drugs may have cardiac toxicity. They are not recommended for use in patients with heart failure.
 - (2) Blood toxicity:
 - When used in combination with anticoagulants, they can enhance the anticoagulant effect and increase the risk of bleeding.
 - Co-administration with aspirin is not recommended.
 - (3) Renal toxicity: These drugs have renal toxicity.

- High-risk groups include those over 60 years old, dehydrated individuals, multiple myeloma patients, diabetics, patients with kidney disease, or those using nephrotoxic chemotherapy drugs (such as cyclosporine, cisplatin).
 - During the use of these drugs, if the patient's renal function deteriorates or hypertension occurs, the use of these drugs should be reduced or the dosage should be lowered.
- (4) Gastrointestinal toxicity: These drugs have gastrointestinal toxicity.
- High-risk groups include those over 60 years old, individuals with a history of peptic ulcers, heavy alcohol consumption, use of corticosteroids, or long-term use of aspirin.
 - During the use of these drugs, if the patient develops peptic ulcers or gastrointestinal bleeding, they should stop the medication.
- 3.4. Examples of commonly used medications (due to the multitude of brand names for medications, only the generic names of their main ingredients are listed here for reference): Indomethacin, methyl salicylate, etofenamate, diclofenac, piroxicam, niflumic acid, flurbiprofen.

Note: The following medications have relatively less toxicity on the gastrointestinal, renal, and hematological systems, but their toxic effects on the cardiovascular system should still be considered. Medications such as celecoxib, etoricoxib, and parecoxib.



4. Antidepressants

- 4.1. Action: Used for the treatment of neuropathic pain caused by nerve damage, including peripheral neuropathic pain and central neuropathic pain.
- 4.2. Indications: Effective for various types of neuropathic pain, such as diabetic neuropathy, postherpetic neuralgia, central neuropathic pain after stroke, spinal nerve root lesions, and fibromyalgia.
- 4.3. Side effects or contraindications:
 - (1) Common side effects: Fatigue, weakness, restlessness, insomnia, blurred vision, difficulty urinating, orthostatic hypotension, abnormal cardiac conduction system, weight gain, sexual dysfunction, etc.
 - (2) Caution should be exercised in patients with arrhythmia, recent history of myocardial infarction, heart conduction block, epilepsy, narrow-angle glaucoma, hyperthyroidism, urethral obstruction, or taking monoamine oxidase inhibitors.
 - (3) After taking the medication, avoid operating machinery or driving, and also avoid consuming alcohol.
- 4.4. Examples of commonly used drugs (due to the numerous brand names of these drugs, only their generic names of the main ingredients are listed for reference): amitriptyline, imipramine, nortriptyline, desipramine.

5. Anticonvulsants

- 5.1. Action: Can be used to treat various types of neuropathic pain caused by nerve damage, including peripheral neuropathic pain and central neuropathic pain.
- 5.2. Indications: Effective for various types of neuropathic pain, such as diabetic neuropathic pain, postherpetic neuralgia, central neuropathic pain, spinal nerve root lesions, and fibromyalgia.
- 5.3. Side effects or contraindications:
 - (1) Common side effects: Drowsiness, weight gain, rash, dizziness, loss of balance (unsteady gait), swollen gums.
 - (2) Contraindications: After taking the medication, avoid operating machinery or driving, and avoid consuming alcohol.
- 5.4. Examples of commonly used drugs (due to the numerous brand names of these drugs, only their generic names of the main ingredients are listed for reference): Pregabalin, gabapentin, carbamazepine, lamotrigine, topiramate, oxcarbazepine.

6. Muscle relaxants (Centrally acting skeletal muscle relaxants)

- 6.1. Mechanism of action: Medications of this type act on the brain to induce relaxation of tense or spasmodic muscles, addressing conditions such as skeletal muscle spasms and acute muscle pain.

- 6.2. Indications: Fibromyalgia, skeletal muscle spasms, tension-type headaches.
- 6.3. Side effects or contraindications:
- (1) Common side effects: Drowsiness, fatigue, muscle weakness.
 - (2) Consuming with alcohol, sedatives, or antihistamines may exacerbate side effects such as drowsiness, fatigue, and weakness.
 - (3) If drowsiness occurs after taking the medication, avoid operating machinery or driving.
- 6.4 Examples of commonly used drugs (due to the numerous brand names of these drugs, only their generic names of the main ingredients are listed for reference): Baclofen, cyclobenzaprine, tizanidine.

7. Local anesthetic patches

- 7.1. Action: Applied to the skin to treat localized pain.
- 7.2. Indications: Postherpetic neuralgia, chest wall pain after thoracotomy, chest wall pain after breast removal, inguinal wall pain, localized limb pain after limb surgery, etc.
- 7.3. Side effects or contraindications: Few systemic and local side effects, but should be applied to healthy and intact skin.
- 7.4. Examples of commonly used drugs (due to the numerous brand names of these drugs, only their generic names of the main ingredients are listed for reference): Lidocaine, dibucaine, benzocaine.

8. Capsaicin cream or patches

8.1. Action: Applied to the skin to treat localized pain.

8.2. Indications: Postherpetic neuralgia, osteoarthritis.

8.3. Side effects or contraindications:

- (1) Little few systemic side effects, but should be applied to healthy and intact skin.
- (2) Local skin may experience a burning sensation, tingling, or develop a rash-like skin reaction.

9. Recommended dosage for medication use

Please follow the indications of individual medications, information on the package insert, and consider the individual patient's condition, such as age, gender, type of chronic pain, and the patient's physical condition. Use the appropriate medication and dosage as directed by a doctor.

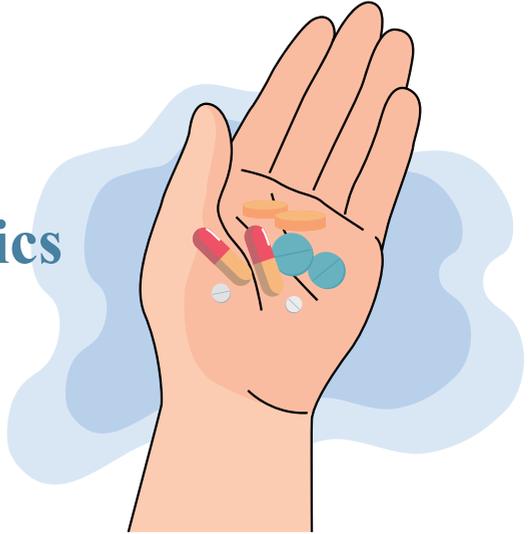


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Chapter 9

The Use of Opioid Analgesics



1. Introduction

- 1.1. Opioid analgesics can be used to treat non-cancer chronic intractable pain and are the last stage in the four-stage treatment model. They should be used with caution.
- 1.2. Opioid analgesics (Table 1) are addictive narcotics. Misuse or abuse of these drugs can lead to addiction. Please use them according to the doctor's instructions.

Table 1. List of commercial opioid analgesics for outpatients in Taiwan

Generic name	Dosage	Trade name (Example)	Dosage
Morphine	Tablets	Morphine sulfate [®] tablets "PPCD"	15mg/tablet
Morphine	Sustained release tablets	Morphine sulfate [®] sustained-release F.C. tablets "PPCD"	30mg/tablet
Morphine	Prolonged release capsules	MXL [®] prolonged- release capsules	60mg/capsule
Fentanyl	Transdermal patch	Opiodur [®] transdermal patch Fentanyl transdermal patch "PPCD"	1.375mg/patch 2.5mg/patch 5mg/patch
Fentanyl	Buccal soluble films	PAINKYL [®] fentanyl (buccal soluble films)	200 µg/tablet 600 µg/tablet
Fentanyl	Buccal tablets	Fentora [®] buccal tablets	100 µg/tablet 200 µg/tablet
OxyCodone	Immediate release capsules	OxyNorm [®] immediate- release capsules	5 mg/capsule
OxyCodone	Extended release tablets	OxyContin [®] controlled-release tablets	10mg/tablet 20mg/tablet

Generic name	Dosage	Trade name (Example)	Dosage
Buprenorphine	Transdermal patch	Transtec® transdermal patch	20mg/patch 30mg/patch
Buprenorphine	Sublingual tablets	Temgesic® sublingual tablets	0.2mg/tablet
Codeine	Tablets	Codeine® phosphate tablets	15mg/tablet 30mg/tablet
Tramadol	Capsules	Camadol® capsules Tramtor® capsules "PATRON" Painlax® capsules "PBF" Tramed® capsules "SWISS" Tramal® capsules Tramazac® capsules	50mg/capsule
Tramadol	Tablets (Fix-dose combination)	Traceton® film coated tablets Tramacet® F.C. tablets Apo-Tramadol® tablets Opicet® F.C. tablets Winpain® F.C. tablets	Tramadol 37.5mg+ Acetaminophen 325mg/tablet
Tramadol	Sustained release tablets	Muaction® sustained release tablets "lotus" Tramadol® retard tablets "U-CHU" Tramal® retard tablets Tramadol SANDOZ UNO® retard tablets	100mg/tablet

2. Principles of using opioid analgesics for chronic pain

As the fourth stage in the four-stage treatment model, the principles of using opioid drugs are as follows:

- 2.1. Examine whether methods or drugs other than opioid treatment have been used optimally and whether the severity of pain is still moderate to severe.
- 2.2. Evaluate the possibility of addiction after using opioid drugs.
- 2.3. Establish criteria for continued or discontinued use.
- 2.4. Establish reasonable goals for pain improvement, restoration of physical (functional) abilities, and expectations for enhancing quality of life (emotional well-being).
- 2.5. Start using opioid drugs at the lowest effective dose.
- 2.6. Assess pain relief and physical function recovery continuously .
- 2.7. Monitor and record pain relief and disease treatment progress.
- 2.8. If opioid drugs have been used for a long time and need to be discontinued, it should be done gradually. Consult a pain treatment expert or addiction treatment expert if necessary.

3. Precautions when using opioid analgesics:

- 3.1. Common side effects when using opioid analgesics include nausea, vomiting, constipation, sedation, confusion, and itching. These side effects can be prevented or treated. Please contact the prescribing doctor if you experience any discomfort.

- 3.2. Sedation (drowsiness) is the most common side effect of these drugs. Most patients will feel sleepy after taking the medication. At this time, do not drive, operate machinery, or engage in activities that require mental effort. This phenomenon usually disappears within 7 ~ 10 days of starting opioid treatment due to the development of tolerance. If the condition does not improve after 7 ~ 10 days, inform the doctor and discuss the reasons.
- 3.3. Respiratory depression: **This is the most serious side effect of opioid drugs**, but it only occurs when the dosage is too high or when the patient's respiratory function is poor. As long as the dosage of opioid drugs can be gradually adjusted, respiratory depression is rare. Even if there is mild respiratory depression, it will gradually recover with prolonged treatment (approximately 1 ~ 3 weeks). In other words, patients who use opioid drugs for long-term pain treatment will not experience respiratory depression unless there is a change in their condition (worsening of respiratory function) or an increase in dosage.
- 3.4. If opioid drugs are used in conjunction with alcohol or sedatives, there is a possibility of drug overdose, including slurred speech, emotional instability, unsteady gait, slow breathing, confusion, cyanosis, coma, and even death. Do not drink alcohol while using opioid drugs.
- 3.5. The chance of addiction is low when using opioid drugs as instructed by a doctor. However, individuals with a history of addiction to opioid drugs, alcohol (excessive drinking), or other drugs may have a higher risk of addiction.
- 3.6. Please use opioid drugs according to the doctor's instructions and do not adjust the route or dosage of administration on your own. When reducing the dosage, it should be done slowly and gradually according to the doctor's instructions. Do not stop abruptly.

- 3.7. Do not give opioid drugs to family members or friends (others) for use.
- 3.8. After receiving opioid drugs, please store them properly and do not place them randomly to avoid loss or accidental use by children. Unused drugs should be returned to the medical institution where you received treatment.
- 3.9. Do not chew long-acting tablets for oral use, and do not inject drugs that are not intended for injection.

4. Instructions of individual opioid analgesics for home use

The following information is written based on the reference of individual drug information sheets; please refer to Table 1 for the drug category:

- 4.1. Morphine (morphine sulfate, such as immediate-release tablets, extended-release tablets, sustained-release capsules)
 - (1) Action

Morphine sulfate is a potent analgesic used for the relief of severe pain.
 - (2) Usage
 - For extended-release or immediate-release tablets, swallow the whole tablet without chewing.
 - When using sustained-release capsules, swallow the whole capsule or open it and sprinkle the small granules inside into a non-alcoholic cold beverage before swallowing. Do not crush or chew the granules inside the capsule.

(3) Precautions

- If you have allergies to morphine, liver dysfunction, respiratory depression, asthma, heart failure, arrhythmia, head injury, brain tumor, acute alcohol poisoning, seizures, etc., please inform your doctor before seeking medical advice to assess whether it is safe to use.
- Abrupt discontinuation after continuous use or concurrent use of opioid antagonists may cause withdrawal symptoms such as tearing, cold sweats, nausea, vomiting, diarrhea, abdominal pain, dilated pupils, headache, insomnia, restlessness, delirium, tremors, joint and muscle pain, and urgent breathing.
- This medication should not be used if there is a possibility of paralytic ileus.
- After taking the medication, you may feel drowsy. Avoid engaging in activities that require full attention or may cause danger, such as driving or operating machinery.
- The safety of using this medication in pregnant women has not been established. If you are planning to become pregnant, already pregnant, or breastfeeding, please inform your doctor before seeking medical advice to assess whether it is safe to use.

(4) Related side effects

Respiratory depression, nausea, vomiting, facial flushing, palpitations, biliary spasm, constipation, insomnia, headache, hallucinations, urinary obstruction, itching, hives, etc.

(5) Handling of missed doses

If you take this medication regularly, take the missed dose as soon as you remember it. However, if it is close to the next scheduled dose, skip the missed dose and continue your regular dosing schedule. Do not take a double dose at once or within a short period of time.

(6) Storage

Store the medication at room temperature and avoid storing it in high temperature or humid places.

4.2. Fentanyl transdermal patch

(1) Action

The fentanyl transdermal patch is a potent analgesic. The medication is absorbed through the subcutaneous microvessels on the patch, enters the body, and produces analgesic effects. The medication is continuously released from the patch within 72 hours and absorbed into the systemic circulation, producing pain relief.

(2) Usage

● Preparation before use

- ☆ The fentanyl transdermal patch should be applied to a normal and flat skin surface on the trunk or upper arm. For younger children, the upper back is a more ideal location.
- ☆ Before using the patch, remove any hair from the application site (preferably an area without hair growth). Do not shave the skin to avoid skin damage.
- ☆ Clean the application site with water. Do not use soap, oil, lotion, or any other substances that may irritate the skin or alter its texture.
- ☆ After the skin is completely dry, apply the patch.

- Application method

- ☆ Take out the fentanyl patch from the sealed package (use immediately after removal).
- ☆ Remove the protective layer of the patch.
- ☆ Apply the patch to the skin and press gently with the palm for 30 seconds to ensure full contact between the entire patch and the skin. Pay special attention to the corners and use breathable tape to reinforce the adhesion at the edges of the patch.
- ☆ Wash hands with water after applying the patch.

- Patch removal

- ☆ Used patches should be placed in the original packaging after peeling off. Do not dispose of them randomly. Please return them to the pharmacy of the medical institution where you received treatment, along with the record form.
- ☆ Unused patches should be returned to the pharmacy of the medical institution where you received treatment.

(3) Precautions

- Check the integrity of the patch before use. Do not use patched that have been cut, divided, or damaged.
- The patch can be applied continuously for 72 hours. After removing a patch, the new patch should be applied to a different location. The same skin area should be left for several days (approximately one week) before applying a new patch.
- Showering is allowed, but do not locally heat or soak the patch area to avoid accelerating drug release and absorption.

(4) Other information

- Please apply the patch to the appropriate location as instructed by the doctor, such as the front chest, back, upper arm, thigh, etc. (no need to apply it directly to the painful area).
- After removing the patch, the drug components will still remain in the skin for up to 24 hours. The medication will not immediately lose its effectiveness after removing the patch, so there is no need to worry about experiencing pain immediately after removal.
- When using the patch for the first time, it takes time for the medication to be absorbed through the skin and take effect. Therefore, oral analgesic medication should still be taken within 12 ~ 24 hours after applying the patch. If switching from oral analgesic medication to the patch, the patch can be applied simultaneously with the last dose of oral medication.
- In case of sudden pain, please follow the doctor's instructions and take other immediate-acting analgesics (such as buccal or sublingual tablets).

(5) Related side effects

- Common side effects include slowed breathing, nausea, vomiting, constipation, sedation, and drowsiness. Please record any side effects and inform the doctor during the visit.
- If severe side effects such as allergic reactions, difficulty breathing, muscle spasms, persistent chest pain, or irregular heartbeat occur, seek immediate medical attention at the emergency room.

(6) Handling of missed doses

- When you remember that you forgot to change the patch, immediately remove the old patch and apply a new one.
- Do not use a double dose.

(7) Storage

Store in the original unopened packaging at a temperature below 25 °C .

4.3. Oxycodone (such as OxyNorm[®] immediate-release capsules; OxyContin[®] controlled-release tablets)

(1) Action

Oxycodone is a potent analgesic used for the relief of moderate to severe pain.

(2) Usage

If using sustained-release tablets, they should be swallowed whole and not crushed, chewed, or dissolved, as this can cause excessive release of the medication and pose a risk of fatal overdose.

(3) Precautions

- If you have liver or kidney dysfunction, severe respiratory depression, asthma, head injury, chronic obstructive pulmonary disease, epilepsy, or suspected paralytic ileus or gastrointestinal obstruction, please inform your doctor during the consultation for evaluation of whether it is safe to use.
- After taking the medication, you may feel drowsy or experience a decrease in blood pressure. Avoid engaging in activities that require concentration or may cause danger, such as driving or operating machinery.

- Inform your doctor or pharmacist of any other medications you are taking, especially sedatives, sleeping pills, or muscle relaxants.
- The safety of this medication in pregnant women has not been established. If you are planning to become pregnant, are already pregnant, or breastfeeding, please inform your doctor during the consultation for evaluation of whether it is safe to use.

(4) Related side effects

Constipation, nausea, drowsiness, vomiting, fatigue, headache, dizziness, abdominal pain, difficulty breathing, increased heart rate, low blood pressure.

(5) Handling of missed doses

If you take this medication regularly, take the missed dose as soon as you remember it. However, if it is close to the next dose, just take the next dose. Do not take a double dose at once or within a short period of time.

(6) Storage

Store the medication at room temperature and avoid storing it in high temperature or humid places.

4.4. Buprenorphine transdermal patch (such as Transtec® transdermal patch) medication instructions

(1) Action

Buprenorphine transdermal patch is a potent analgesic that is absorbed through the subcutaneous microvasculature to produce its effect. The analgesic effect of the patch appears 12 ~ 24 hours after use, reaches its peak at approximately 3 days, and can last for up to 96 hours. It is suitable for the relief of moderate to severe pain.

(2) Usage

- Choose a clean, hairless, and flat surface of the skin to apply the patch, avoiding areas with large scars. The upper body, such as the upper back or below the collarbone, is a preferred location for application.
- Clean the application site with water, do not use soap or any other cleansers, and ensure that the skin is completely dry before applying the patch.
- After removing the patch from the packaging, immediately apply it to the application site and press it firmly with the palm of your hand for about 30 seconds.

(3) Warnings and precautions

- New buprenorphine transdermal patches should be applied to different skin sites; the same site should be at least 3 weeks apart before applying a new patch.
- The patch can be applied for a maximum of 4 days and can be changed twice a week at regular intervals (such as Monday morning and Thursday evening).
- Only one patch should be used at a time, regardless of the strength of the dose.
- The patch is not affected by bathing, showering, or swimming, but it should not be exposed to high heat (e.g., steam baths, infrared radiation) to avoid excessive release of the medication.
- The patch is a specially designed sustained-release formulation and should not be cut, as it may disrupt the effectiveness of the medication.
- Since no studies have been conducted on patients under 18 years old, it is not recommended for use in patients younger than this age.

- The patch should not be used during pregnancy or by breastfeeding women.
- The patch may cause severe respiratory depression, so it should be used with caution in patients with respiratory insufficiency.
- At the beginning of treatment, when changing the dose, or when using the patch in combination with other substances that may affect mental status (including alcohol, tranquilizers, sedatives, and sleeping pills), dizziness, drowsiness, blurred vision, or double vision may occur. Patients with these conditions should not drive or operate machinery during the use of the patch and for at least 24 hours after removing the patch.

(4) Related side effects

Dizziness, headache, drowsiness, nausea, constipation, localized itching, vomiting, redness at the patch site.

(5) Storage

Store the medication at room temperature and avoid storing it in high temperature or humid places.

4.5. Buprenorphine sublingual tablets (such as Temgesic® sublingual tablets)

(1) Action

Buprenorphine sublingual tablets is a potent analgesic that is absorbed into the body through the sublingual microvasculature and is suitable for the relief of moderate to severe pain.

(2) Usage

This medication should be placed under the tongue and allowed to dissolve and be absorbed. It should not be chewed or swallowed. Please follow the doctor's prescribed usage and dosage.

(3) Precautions

- If you have kidney disease, head injury, increased intracranial pressure, cardiovascular disease, gastrointestinal disease, etc., please inform the doctor during the consultation to assess whether it is safe to use.
- After taking the medication, you may feel drowsy. Avoid engaging in activities that require full attention or may be dangerous, such as driving or operating machinery.
- Do not drink alcohol during the medication period. Please inform the doctor or pharmacist if you are taking other medications, especially sedatives, sleeping pills, antihistamines, etc.
- The safety of this medication in pregnant women has not been established. If you are planning to become pregnant, already pregnant, or breastfeeding, please inform the doctor during the consultation to assess whether it is safe to use.
- After taking the medication, wait for it to completely dissolve on the oral mucosa before drinking water and gently rinsing it, and wait at least 1 hour before brushing your teeth.

(4) Related side effects

Edema, dizziness, drowsiness, weight gain, blurred vision, constipation, dry mouth.

(5) What to do if you forget to take the medication

If you take this medication regularly, take the missed dose as soon as you remember it, However, if it is close to the next scheduled dose, skip the missed dose and continue your regular dosing schedule. Do not take a double dose at once or within a short period of time.

(6) Storage and disposal

Store the medication at room temperature and avoid storing it in high temperature or humid places.

4.6. Codeine tablets (such as Codeine® phosphate tablets)

(1) Action

Codeine phosphate is a weak analgesic mainly used for cough suppression and pain relief.

(2) Usage

Please follow the doctor's prescribed usage and dosage. Do not increase the dosage or frequency of medication without the doctor's consent.

(3) Precautions

This medication may cause drowsiness. Do not drive or use dangerous machinery after taking the medication.

(4) Related side effects

Side effects are uncommon, but may include constipation, nausea, vomiting, and headache.

(5) What to do if you forget to take the medication

If you take this medication regularly, take the missed dose as soon as you remember it, However, if it is close to the next scheduled dose, skip the missed dose and continue your regular dosing schedule. Do not take a double dose at once or within a short period of time.

(6) Storage

Store the medication at room temperature and avoid storing it in high temperature or humid places.

4.7. Tramadol (such as Tramal® capsules)

(1) Action

Tramadol is a weak painkiller.

(2) Usage

If it is a sustained-release tablet or extended-release formulation, it should be swallowed whole and should not be crushed or split.

(3) Precautions

- When used with central nervous system drugs (such as sedatives, sleeping pills), it may enhance sedative effects and also enhance pain relief. Use with caution.
- This medication is contraindicated in patients who are allergic to its ingredients and in patients with acute alcohol poisoning, sedative, analgesic poisoning, or psychotropic drug poisoning.
- This medication is not recommended for use in pregnant women. If you are planning to become pregnant or are already pregnant, please inform your doctor and let the doctor evaluate whether it can be used.
- This medication is not suitable for children under 12 years old.

(4) Related side effects

Dizziness, headache, drowsiness, constipation, nausea, vomiting, dry mouth, gastrointestinal discomfort.

(5) Handling of missed doses

If you take this medication regularly, take the missed dose as soon as you remember it, However, if it is close to the next scheduled dose, skip the missed dose and continue your regular dosing schedule. Do not take a double dose at once or within a short period of time.

(6) Storage

Store the medication at room temperature and avoid storing it in high temperatures or humid places.

4.8. Tramadol and acetaminophen combination tablets (such as Tramacet® tablets)

(1) Action

This formulation is a combination of weak opioid analgesic (tramadol) and central analgesic (acetaminophen). The combination of these two drugs with different mechanisms of action has synergistic analgesic effects and is used to treat moderate to severe pain that is not relieved by non-opioid analgesics.

(2) Usage

Please follow the prescribed usage and dosage by the doctor. Do not increase the dosage or frequency without the doctor's consent; the total daily dose for adults should not exceed 8 tablets.

(3) Precautions

- When used with central nervous system drugs (such as sedatives, sleeping pills), it may enhance sedative effects and also enhance pain relief. Use with caution.
- This medication is contraindicated in patients who are allergic to its ingredients and in patients with acute alcohol poisoning, sedative, analgesic poisoning, or psychotropic drug poisoning.

- If you have liver disease, please inform your doctor when seeking medical attention and let the doctor evaluate whether it can be used.
- Avoid drinking alcohol while taking this type of medication. If you have a habit of heavy drinking, please inform your doctor.
- This medication is not recommended for use in pregnant women. If you are planning to become pregnant or are already pregnant, please inform your doctor and let the doctor evaluate whether it can be used.
- This medication is not suitable for children under 12 years old.
- If you are taking other pain relievers, fever reducers, or cold medicines containing acetaminophen, please inform your doctor or pharmacist when seeking medical attention and do not exceed the recommended dosage.

(4) Related side effects

Dizziness, headache, drowsiness, constipation, nausea, vomiting, dry mouth, gastrointestinal discomfort, rash, tinnitus, etc.

(5) Handling of missed doses

If you take this medication regularly, take the missed dose as soon as you remember it. However, if it is close to the next scheduled dose, skip the missed dose and continue your regular dosing schedule. Do not take a double dose at once or within a short period of time.

(6) Storage

Store the medication at room temperature and avoid storing it in high temperatures or humid places.

Further Reading

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Chapter 10

Self-Care Practices for Patients



1. Introduction

- 1.1. The causes of non-cancer chronic pain are often complex, and the initial cause may be acute pain caused by physical, visceral, or nervous system damage. However, there are many other factors that contribute to the chronicity of pain, including physical factors, psychological (mental, emotional, spiritual) factors, and lack of social (family, friends, community) support.
- 1.2. Among the various treatments, active self-care by patients (promoting physical and mental health) and cooperation with medical treatment are particularly important. This chapter will explain the methods of active self-care by patients, which is the first stage (very important) in the four-stage treatment model.

2. Self-care practices for chronic pain

- 2.1. Self-care is particularly important in the treatment of chronic pain. It is recommended that patients actively participate in various treatments provided by the hospital, such as medication, surgery, and rehabilitation, and also take appropriate care of their own chronic illness.
- 2.2. In addition, it is recommended to incorporate the following self-care practices:
- (1) Cultivate exercise habits.
 - (2) Balance work and rest.
 - (3) Maintain good sleep quality.
 - (4) Maintain a balanced and healthy diet.
 - (5) Release stress or enhance resilience.
 - (6) Use meditation and maintain a positive mindset.
 - (7) Skillful use of reframing.
 - (8) Seek the power of support.

In the following content, we will explain these self-care methods one by one.

3. Cultivate exercise habits

Moderate exercise is very important for personal health. Patients may reduce their activity and exercise to avoid triggering pain, but in the long run, lack of exercise can cause more physical discomfort and hinder pain reduction. Moderate exercise can reduce pain.

3.1. Benefits of exercise:

- (1) Exercise can activate pleasurable chemicals in the brain and have a stabilizing effect on emotions.
- (2) Exercise can strengthen muscles and joint mobility, relieve muscle tension, and reduce pain.
- (3) Exercise can maintain a healthy weight and body shape, avoiding joint burden caused by weight or body shape.
- (4) Exercise can strengthen cardiovascular function, improve blood flow and oxygen supply to body tissues and organs, reduce inflammation in pain areas, and reduce pain.
- (5) Overall, appropriate exercise can improve overall psychological (mood) and physical (body health) conditions, reduce the impact of pain, and even reduce pain.

3.2. Choosing suitable exercises:

- (1) Discuss with a doctor to determine suitable exercises based on one's own physical condition and pain improvement.
- (2) Common suitable exercises include walking, swimming, dancing, aerobic exercise, yoga, and tai chi.
- (3) Participating in rehabilitation therapy provided by the hospital and continuing to practice after returning home is also a good choice.

4. Balance work and rest

Pain can affect people's rest and daily work, and can disrupt people's daily routines. Like many others, patients may reduce contact with family and friends due to pain. Many activities that one used to enjoy may become difficult to do, leading to a decrease in satisfaction and the development of anxiety and depression. Therefore, some adjustments may be needed in daily life, such as:

- 4.1. Moderately reduce workload and increase leisure and rest time.
- 4.2. Take breaks, stretch, and relieve work pressure while working.
- 4.3. When necessary (in cases of persistent pain), reduce some workload and try to engage in activities that one enjoys. There is no need to feel guilty about it; take care of oneself.
- 4.4. Adjust one's mindset to maintain a pleasant mood.

5. Maintain good sleep quality

Pain can make it difficult to fall asleep, and insufficient sleep can worsen pain, creating a vicious cycle. Maintaining good sleep quality is crucial in pain management. When having difficulty falling asleep, try the following methods:

- 5.1. It is the most important to enhance physical health, maintain a positive and optimistic attitude towards life.
- 5.2. Balance work and rest, reduce life stress, and maintain an appropriate amount of exercise and a healthy diet.

- 5.3. Create a sleep-friendly bedroom environment: avoid placing a TV or phone in the bedroom. Keep the room dimly lit during sleep, ensure a comfortable bed and pillow, and maintain a comfortable room temperature.
- 5.4. Keep a regular sleep schedule: try to go to bed and wake up at the same time every day to maintain the stability of our biological clock. Avoid staying in bed, and try not to take naps during the day.
- 5.5. Avoid consuming stimulating beverages such as tea, coffee, and alcohol before bedtime.
- 5.6. Reading comforting books, listening to soothing music, and taking a warm bath before sleep can help with falling asleep and maintaining good sleep quality.
- 5.7. Relaxation, deep breathing, and meditation can calm emotions and help with falling asleep.
- 5.8. If necessary, seek medical assistance to prescribe sleep aids or further investigate if there are factors interfering with sleep, such as sleep apnea or cardiovascular diseases, and receive appropriate treatment.

6. Maintain a balanced and healthy diet

Although the relationship between diet and pain is not very clear, certain foods can increase the body's inflammatory response and worsen pain. For people with chronic pain, adjusting dietary habits can help alleviate pain and promote overall health. The following recommendations are suggested:

- 6.1. Consume more fresh fruits, vegetables, whole grains, and fish. Consider adopting a Mediterranean diet and increase intake of probiotics for gut health.

- 6.2. Reduce consumption of foods that can intensify inflammatory response, such as sugar, carbohydrates, fried foods, and food additives.
- 6.3. Reduce consumption of overly sweet, salty, sour, spicy, oily, and hot foods.

7. Release stress or enhance resilience

Long-term excessive internal pressure can induce or worsen pain, and long-term excessive internal pressure can also cause fatigue, memory loss, impatience, irritability, and increased sensitivity to pain. Reducing internal stress can help relieve pain. You (patients) can try the following methods:

7.1. Stress release:

- (1) Review your daily routine to see if it is filled with responsibilities and scheduled activities.
- (2) Rearrange pending tasks according to your physical strength.
- (3) Schedule time for exercise, leisure, and self-care.
- (4) Practice relaxation techniques, such as:
 - Set aside tasks, sit down and take a break, and do slow deep breathing (slow inhalation and exhalation) several times.
 - Perform relaxing movements:
 - ☆ Take off shoes or any clothing that restricts the body, and sit or lie comfortably.
 - ☆ Alternate contracting and relaxing certain muscles of the body during slow inhalation and exhalation for about 1 minute, then move on to the next area until the whole body is relaxed.

7.2. Enhance stress resistance:

Within your physical capacity, increasing knowledge and skills can effectively enhance stress resistance.

7.3. Maintain a pleasant mood every day

You can use your senses and body sensations to appreciate the beauty around you. For example:

- (1) Appreciate the beauty of nature.
- (2) Smell the fragrance of flowers.
- (3) Listen to elegant music.
- (4) Enjoy food and desserts in a moderate amount.
- (5) Embrace loved ones.

8. Use meditation and maintain a positive mindset

When we face pain with a positive mindset, the severity of pain decreases, and vice versa. Meditation is a method of using imagination to eliminate external distractions. Meditation can be divided into three types: Mindfulness meditation, contemplative meditation, and guided imagery meditation.

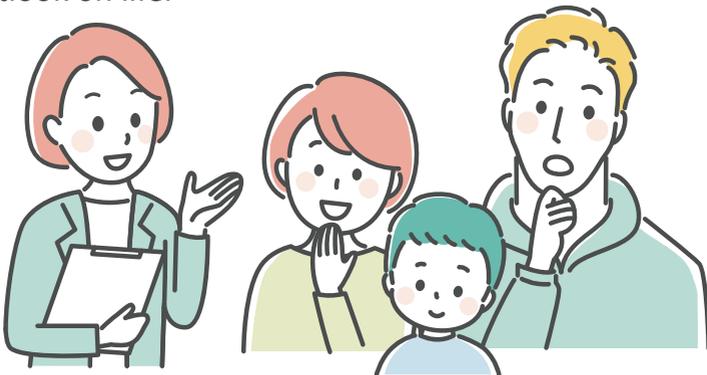
- 8.1. Mindfulness meditation: This meditation method involves focusing on the present moment and eliminating external distractions. Find a quiet place, sit in a comfortable position, close your eyes, focus on your breath, and take slow deep breaths for a few minutes to stabilize your emotions.
- 8.2. Contemplative meditation: Similar to mindfulness meditation, but it is more like praying. Find a quiet place, move your hands to the painful area, imagine a mysterious power that can eliminate pain through your hands, and imagine the pain disappearing and restoring your health and vitality.

8.3. Guided imagery meditation: Use your imagination to visualize yourself in a beautiful, comfortable, and elegant environment, temporarily escaping from pain and enjoying a small happiness. For example, imagine yourself in your favorite scenic spot, favorite room, garden, beach, beautiful scenery, and spend a joyful vacation with your favorite person/people.

9. Skillful use of reframing

9.1. Pain can trigger many negative emotions, and negative emotions can intensify the perception of pain. Therefore, reducing negative emotions can improve the perception of pain. We can use reframing to reduce our negative emotions. We can also seek advice from a trusted friend or family member who is positive, and share our concerns and pain. Listen to their opinions and suggestions.

9.2. We can shift the focus of life to matters other than pain. For example, complete important tasks that have been neglected, care for family and friends, and help those in need. This can enrich our sense of achievement and reduce the impact of pain, diluting the pain. By changing our mindset, we can maintain optimistic, positive, and outlook on life.



10. Nourish the soul and seek support

Long-term pain can deplete a person's enthusiasm, happiness, and hope. It is important to nourish our souls and seek support when needed.

10.1. Cultivate a grateful heart:

Our growth and development are supported and nurtured by various factors. First, we must be grateful to our parents, teachers, friends, superiors, colleagues, and many other people, even our children (who bring us joy and hope), and many more. If we have a grateful heart, our inner peace, health, and strength will be enhanced. We can try to write down several people or things we are grateful for every day to enrich our souls.

10.2. Seek support:

There are many ways to seek support. For example, you can join religious groups and seek support and assistance from a higher power through prayer in daily life and when facing pain. You can also join support groups or organizations that help patients. Additionally, increasing interpersonal interactions is also a way to seek support.



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Chapter 11

Information for Family Members and Caregivers



1. Introduction

Having the support of family members is very helpful in the treatment of non-cancer chronic pain. In appropriate cases, healthcare professionals can explain to family members and caregivers the impact of non-cancer chronic pain and its caregiving model, and support and assist the patient. When necessary, they can also seek assistance from social resources. Family members and caregivers should understand and assist with the following:

- 1.1. Understand the patient's condition and the treatment he (she) will receive.
- 1.2. Assist the patient in receiving treatment.
- 1.3. Pay attention to the patient's medication safety.
- 1.4. Assist the patient in promoting physical and mental health and relieving stress.

1.5. Caregivers' self-relief and resilience enhancement.

For the above issues, family members and caregivers should consult and discuss with healthcare professionals.

2. Understand the patient's condition and the treatment he/she will receive

2.1. Causes of non-cancer chronic pain

- (1) What are the causes of the patient's chronic pain?
- (2) What comorbidities need to be treated?

2.2. Assessment of pain

- (1) How severe is the pain?
- (2) Does the pain affect the patient's daily life?
- (3) What is the patient's psychological and emotional state?

2.3. Care methods for chronic pain

- (1) Care philosophy?
- (2) Care goals?
- (3) Standard care model?

3. Assist the patient in receiving treatment

3.1. Common pain relief methods

- (1) What are the commonly used pain relief methods?
- (2) Why is chronic pain difficult to treat?

3.2. Rehabilitation treatment for chronic pain

- (1) Purpose?
- (2) Treatment methods?

4. Pay attention to the patient's medication safety

4.1. Treatment with non-opioid analgesics

- (1) When can non-opioid analgesics be used?
- (2) What should be noted when using them? What are the side effects?

4.2. Treatment with opioid analgesics

- (1) When is it necessary to use opioid medications for pain relief?
- (2) What should be noted when using them? What are the side effects?
- (3) Addiction? Abuse? Misuse?

5. Assist the patient in promoting physical and mental health and relieving stress

5.1. Psychological care for chronic pain

- (1) What psychological treatments are commonly provided in medical settings?
- (2) What self-implemented psychological practices can patients do at home?
- (3) How to do relaxation training and mindfulness-based stress reduction therapy?

5.2. Self-care for patients

- (1) What self-care methods can patients engage in?

(2) How to implement the following methods:

Developing exercise habits, balancing work and rest, maintaining good sleep, maintaining a balanced and healthy diet, stress release or enhancing resilience, maintaining a positive mindset, skillfully using cognitive reframing, nourishing the soul, and seeking support.

6. Caregivers' self-relief and resilience enhancement

- 6.1. Methods for promoting physical and mental health?
- 6.2. How to do relaxation training and mindfulness-based stress reduction?
- 6.3. Seeking the power of support?

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Chapter 12

Comorbidity of Non-Cancer Chronic Pain and Mental Disorders



1. Introduction

- 1.1. When pain cannot be cured for a long period of time, it often causes multi-dimensional effects on the body, mood (psychology), and interpersonal relationships, thereby exacerbating the pain.
- 1.2. Chronic pain and mental disorders have a bidirectional interaction. When treating chronic pain, these comorbid mental disorders must also be treated simultaneously in order to achieve the best pain relief.

2. Chronic pain and depression

- 2.1. The proportion of patients with chronic arthritis, migraines, and pelvic pain who also have depression or mental disorders exceeds 20%.
- 2.2. The proportion of patients with fibromyalgia and chronic lower back pain who also have depression exceeds 50%.

- 2.3. Overall, the occurrence rates of major depression, persistent depressive disorder, and bipolar affective disorder (bipolar disorder) in patients with chronic pain are 2% ~ 61%, 1% ~ 9%, and 1% ~ 21% respectively.
- 2.4. People who suffer from chronic neck or lower back pain have a risk of experiencing a depressive episode 2 to 2.5 times higher than the general population. Conversely, patients with depression have a 3 ~ 4 times higher risk of developing neck or lower back pain compared to those without depression.
- 2.5. When patients with chronic pain also have depression, their suicidal ideation and suicide history should be evaluated, and referral to psychiatric treatment should be considered if necessary.

3. Chronic pain and anxiety disorders

- 3.1. Similar to depression, there is a bidirectional interaction between anxiety disorders and chronic pain.
- 3.2. Patients with anxiety disorders have twice the risk of developing migraines compared to the general population.
- 3.3. Generalized anxiety disorder is defined as excessive anxiety and worry about many things, restlessness, fatigue, difficulty concentrating, irritability, muscle tension, and sleep disturbances.

4. Chronic pain and bipolar affective disorder (bipolar disorder)

- 4.1. Symptoms: Patients experience cyclic mood swings (mania and depression).
- 4.2. 25% of patients have suicidal tendencies.
- 4.3. Insufficient sleep (disorder) may also trigger bipolar affective disorder.

5. Chronic pain and post-traumatic stress disorder

- 5.1. When patients have experienced major trauma or abuse, they may exhibit symptoms of post-traumatic stress disorder (PTSD) when encountering situations related to or resembling the event, such as avoidance behavior, negative cognition and emotions, heightened alertness, and exaggerated reactions.
- 5.2. These traumatic or abusive situations include physical, mental, emotional, and sexual trauma (abuse).
- 5.3. Common sequelae in daily life include sleep disorders, restlessness, and hyperarousal.
- 5.4. Patients with post-traumatic stress disorder are more prone to developing chronic pain.

6. Chronic pain and sleep disorders

- 6.1. Over 50% of chronic pain patients have sleep disorders.
- 6.2. Pain interferes with sleep, and sleep disorders also worsen pain.

6.3. Depression and anxiety disorders are also the common cause of sleep disorders.

7. Chronic pain and substance use disorders

- 7.1. The initial assessment of chronic pain patients should include detailed information about substance use and medication use (type, dosage, frequency, overdose, withdrawal symptoms, triggering factors, sequelae, etc.).
- 7.2. Similar to depression and anxiety disorders, there is a bidirectional relationship between substance use disorders and chronic pain.
- 7.3. Fibromyalgia, chronic low back pain, and arthritis patients are all high-risk groups prone to substance use disorders.
- 7.4. Compared to the general population, patients with substance use disorders are 1.5 times more likely to develop chronic pain, while chronic pain patients are 2 ~ 3 times more likely to develop substance use disorders.
- 7.5. Risk factors for opioid use disorders in chronic pain patients include young age, widespread pain, emotional disorders, social (interpersonal, economic) stress, high doses of opioids, and a history of substance use disorders.
- 7.6. During the acute pain period, if opioids are used for a short period of time, regardless of the dosage, the probability of developing substance use disorders increases by about 3 times compared to non-users.
- 7.7. During the chronic pain period, if opioids are used for more than three months, when compared to non-users, the probability of developing substance use disorders increases by 15 times at daily doses equivalent to oral morphine doses of 1 ~ 36 milligrams, 29 times at daily doses of 36 ~ 120 milligrams, and 122 times at daily doses greater than 120 milligrams.

8. Chronic pain and suicide

- 8.1. Chronic pain increases the risk of suicide in patients.
- 8.2. Up to 28% to 48% of chronic pain patients have had suicidal ideation.
- 8.3. Risk factors for suicide include severe pain, psychological factors, mental disorders, and the use of potent analgesics.

9. Chronic pain and sexual abuse

Victims of sexual abuse have a 2.5 ~ 3.5 times higher risk of developing fibromyalgia, chronic musculoskeletal and pelvic pain.

10. Chronic pain and smoking

- 10.1. Patients with chronic pain have a higher smoking rate.
- 10.2. Patients who were already smokers often experience more severe pain and require higher doses of opioids when they have chronic pain.

11. Chronic pain and alcohol abuse

- 11.1. Alcohol abuse is the most important risk factor for chronic pancreatitis.
- 11.2. Chronic pancreatitis is caused by multiple episodes of acute pancreatitis, resulting in irreversible changes in pancreatic tissue and structure, such as fibrosis, calcification, cysts, etc. These changes usually cause chronic pain.

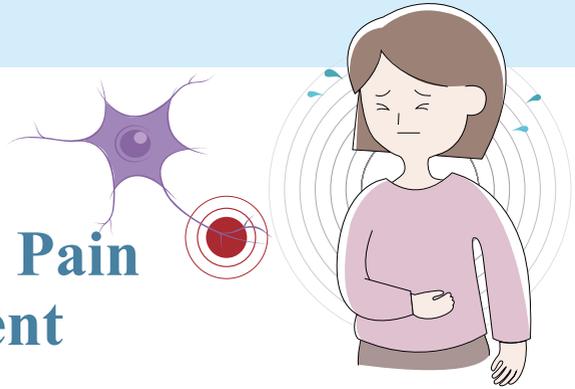
11.3. Quitting alcohol is often the primary recommendation for pain treatment.

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Chapter 13

Neuropathic Pain and Treatment



1. Introduction

- 1.1. Definition of neuropathic pain: Pain caused by damage or sensitization of the nervous system (whether central or peripheral).
- 1.2. Common physical symptoms of neuropathic pain: Allodynia, hyperalgesia, hypalgesia.
- 1.3. Fibromyalgia, irritable bowel syndrome, and other psychosomatic disorders can cause pain or discomfort in various parts of the body due to long-term mental stress and other factors. The lesion site is in the central nervous system (brain).

2. Clinical manifestations of neuropathic pain

- 2.1. Neuropathic pain can be persistent or episodic, and can occur without external stimulation.
- 2.2. Patients often describe the pain as being hit, torn, burned, or electrified.

2.3. Pain worsens at night or in damp and cold weather, and emotional changes can also induce or worsen pain.

3. Explanation of common terms related to neuropathic pain

3.1. Allodynia:

These stimuli do not cause pain in normal individuals, but can induce pain in patients with neuropathic pain.

- (1) Allodynia induced by changes in external temperature: The affected skin is abnormally sensitive to cold and heat.
- (2) Allodynia induced by vibration: such as brushing teeth.
- (3) Allodynia induced by static behavior: such as touching or pressing the affected area.

3.2. Hypalgesia: Decreased sensitivity to painful stimuli.

3.3. Hyperalgesia: Increased sensitivity to painful stimuli compared to normal individuals, and more intense reactions to stimuli that would normally cause pain.

4. Impact of neuropathic pain on physical function and emotions

Long-term neuropathic pain can affect various aspects of the body, mind, and interpersonal relationships, including sleep, daily activities, lifestyle, work, hobbies, personality, emotions, sexual life, socializing, and interpersonal relationships. If pain is not properly managed, these factors can form a vicious cycle with neuropathic pain and worsen the overall condition.

5. Common neuropathic pain and their clinical characteristics

5.1. Post-stroke pain

- (1) Occurs 2 ~ 3 years after a stroke, with pain in the affected limb on the stroke side, lasting for about 1 ~ 3 months.
- (2) Occurs in approximately 8% of all stroke patients.

5.2. Pain after spinal cord injury

- (1) Definition: Direct or indirect damage to the spinal cord due to injury to the surrounding soft or hard tissues or blood vessels.
- (2) Usually begins about 6 months after spinal cord injury and lasts for a lifetime, difficult to treat.
- (3) Occurs in an average of 80% of all spinal cord injury patients.

5.3. Diabetic peripheral neuropathic pain

- (1) Close to 50% of diabetic patients may experience diabetic neuropathic pain throughout their lives.
- (2) Diabetic neuropathic pain affects not only the sensory and motor nervous systems but also the autonomic nervous system (sympathetic and parasympathetic nerves).
- (3) Patients often complain of allodynia in both lower limbs, especially gradual numbness and decreased sensation to touch (dull pain perception).

5.4. Neuropathic pain caused by HIV

- (1) In patients with HIV, the incidence of neuropathic pain can be as high as 30%.

- (2) The neuropathic pain caused by the virus has many types, such as peripheral symmetric polyneuropathic pain, progressive multiple spinal nerve root pain, etc.
- (3) Patients often complain of symmetrical allodynia in the soles of their feet and toes.

5.5. Postherpetic neuralgia

- (1) The probability of developing neuropathic pain after herpes zoster increases with age, reaching 40% in patients over 50 years old and up to 75% in patients over 70 years old.
- (2) Postherpetic neuralgia generally occurs after the appearance of a rash and can be divided into acute pain (within one month), subacute pain (1 ~ 3 months), and chronic pain (more than 3 months).
- (3) Patients often complain of burning sensation, sudden, shooting pain, allodynia to touch and cold temperatures in the affected area.

5.6. Trigeminal neuralgia

- (1) This type of pain occurs in the facial area where the trigeminal nerve is distributed.
- (2) It is often associated with arterial compression of the trigeminal nerve, causing paroxysmal stabbing pain, although a small percentage may have other causes.
- (3) The pain is usually paroxysmal, lasting only a few seconds or minutes, and can be triggered by talking, chewing, or swallowing.
- (4) If the nerve is compressed by small arteries, surgical decompression under a microscope is a treatment option.

5.7. Phantom limb pain

- (1) Definition: Despite the amputation of a limb, the patient still feels pain in the nonexistent limb. The main cause is central sensitization due to nerve damage in the amputated area.
- (2) The incidence of phantom limb pain can be over 50% in the first year after limb amputation. It should be distinguished from residual limb (stump) pain, which is caused by neuroma formation at the amputation site.
- (3) Patients with phantom limb pain often complain of paroxysmal burning pain, crushing pain, and twisting pain in the amputated limb (which no longer exists).

5.8. Sympathetic nerve maintained pain

- (1) The generation of this type of pain is directly related to the dysfunction caused by sympathetic nerve damage in the affected area. Significant therapeutic effects can be achieved through blocking the sympathetic nervous system.
- (2) Clinical features: Allodynia, hyperalgesia, autonomic dysfunction, and changes in skin nutrition in the affected area.
- (3) Autonomic abnormalities in the affected area include edema, abnormal vasoconstriction (such as redness, paleness, blanching, and abnormal skin temperature, either higher or lower).
- (4) Abnormal tissue nutrition in the affected area, such as thin and smooth skin tissue, shiny, degenerative, atrophic, brittle or excessive nail growth, bone growth atrophy, and hair loss.

- (5) In addition, there is often significant impairment in the motor function of the affected limb, such as weakness, tremors, spasms, or movement disorders.

5.9. Fibromyalgia

- (1) The cause of fibromyalgia is unknown, but it is generally believed to be related to long-term psychological stress, leading to central sensitization and reaching the stage of neuropathic pain.
- (2) The main symptom is chronic widespread bilateral pain in multiple areas of the body. However, there are no significant pathological changes in the muscle tissue at the site of pain when examined by biopsy. However, when the muscle, skin, or bone tissue at the site of onset is pressed, it is more prone to pain than in the general population.
- (3) The incidence in the general population is about 0.3 ~ 3%, with a higher prevalence in females (about 8 ~ 10:1). Patients often complain of discomfort when lightly touched or wearing clothes.
- (4) Fibromyalgia has many triggering and aggravating factors related to psychological stress, such as tense emotions, weather changes, insomnia, heavy activity, worry, and physical discomfort.
- (5) Common comorbidities of fibromyalgia include back pain, headaches, arthritis, muscle spasms, irritable bowel syndrome, fatigue, and depression. These comorbidities interact with fibromyalgia and worsen the overall condition.

6. Treatment of neuropathic pain

6.1. Neuropathic pain is caused by nerve damage or sensitization, and its treatment is difficult. It is the most challenging chronic pain to treat. It is recommended to use a multidisciplinary, multimodal approach to care for these patients, following the four-stage chronic pain treatment model released by the U.S. Department of Veterans Affairs in 2017. Priority should be given to the therapies in the first and second stages.

6.2. First stage treatment:

Self-care measures for patients can include:

- (1) Cultivating exercise habits.
- (2) Balancing work and rest.
- (3) Maintaining good sleep quality.
- (4) Maintaining a balanced and healthy diet.
- (5) Releasing stress or improving stress resistance.
- (6) Using meditation and maintaining a positive mindset.
- (7) Skillfully using reframing.
- (8) Nourishing the soul and seeking support.

6.3. Second stage treatment:

Combining non-pharmacological treatments provided by medical professionals (including rehabilitation therapy and psychological therapy).

6.4. Third and fourth stage treatment:

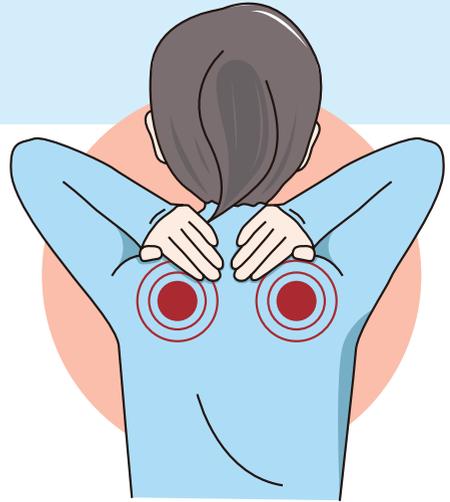
Anticonvulsant and antidepressant medications can provide partial effectiveness. However, the effectiveness of opioid-like medications is not significant.

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Chapter 14

Myofascial Pain and Treatment



1. Introduction

- 1.1. Common symptoms of myofascial pain include localized or regional pain, muscle spasm, specific tender points, limited range of motion, and muscle weakness.
- 1.2. The most common cause of myofascial pain is repeated or acute muscle or fascia strain.
- 1.3. Repetitive microtrauma can also result in local tissue ischemia, muscle contraction, fibrosis, and pain.
- 1.4. Pain usually occurs unilaterally in the body, with a higher incidence in females than males (approximately 6:4 ratio), and is most common between the ages of 20 ~ 50.
- 1.5. Pain may be triggered by increased activity or poor posture in the affected area.

2. Explanation of common terms

2.1. Trigger Point

- (1) This is a typical characteristic of myofascial pain.
- (2) When pressure is applied to the lesion on the muscle or fascia, extreme pain is felt.
- (3) Knots or taut bands formed by muscle contraction can often be felt at the trigger point.

2.2. Active trigger point

- (1) It is located on the muscle or fascia and has a specific point of pain. It is also accompanied by acute tissue inflammation, causing pain even at rest and intensifying upon pressure.
- (2) Nodules or taut bands of tissue can be palpated locally, and there is a significant limitation in the range of limb movement.
- (3) Pressing on the trigger point may induce local autonomic nervous system responses, such as pallor, sweating, piloerection, erythema, abnormal sensation, or hyperalgesia.

2.3. Latent trigger point

- (1) Does not cause pain at rest but produces distinct pain when pressed.
- (2) This trigger point is in a state of chronic inflammation.

2.4. Taut band

- (1) Taut muscle fibers can be palpated within the trigger point.
- (2) It is caused by fibrosis following muscle tissue injury.

3. Characteristics of myofascial pain

- 3.1. Mild muscle or fascia strain may not immediately cause pain, but accumulated damage can lead to future pain.
- 3.2. Myofascial pain may be activated or exacerbated by changes in weather, such as dampness, cold, or heat.
- 3.3. In females, myofascial pain is more likely to occur in the neck, buttocks, shoulders, and lower back.
- 3.4. In males, myofascial pain is more likely to occur in the buttocks, shoulders, neck, and lower back.

4. Assessment of myofascial pain

- 4.1. Trigger points are usually located in the central part of the muscle and are approximately 3 ~ 6mm in size. Muscle tearing, muscle fragmentation, or fibrosis can be observed at the trigger point.
- 4.2. Hyperesthesia or hyperalgesia may occur when touching the trigger point.
- 4.3. Patients may scream or jump when pressure is applied to the trigger point, and the local muscles around the pain point may contract.
- 4.4. The range of pain gradually expands, and the extent of expansion is related to the muscle's distribution range.

5. Treatment of myofascial pain

The principle of treating myofascial pain is to improve the underlying causes and also improve comorbidities such as emotional, mental illnesses, and disorders of the nervous skeletal structure. Treatment methods include patient understanding of the condition, medication treatment, and non-medication treatment.

5.1. Patient understanding of the condition: Discussing the condition with the physician, understanding the causes, and paying attention to subsequent improvements.

5.2. Non-medication treatment

(1) Exercise, physical therapy, posture control:

- Active and continuous exercise can effectively treat myofascial pain. It mainly improves flexibility, adjusts emotions, and enhances pain threshold. Stretching exercises are commonly used to elongate the myofascial intervals with trigger points to prevent recurrence.
- Posture control can reduce the chances of myofascial pain caused by repetitive poor posture, reducing muscle strain.

(2) Reducing mental stress:

Practices such as yoga, meditation, and behavioral therapy can reduce internal stress and muscle tension, thereby increasing the pain threshold.

(3) Ultrasound therapy:

- It improves local tissue fluid, blood circulation, and tissue metabolism by using mechanical and thermal energy transmitted to soft tissues.
- The effect is temporary.

(4) Electrotherapy:

Includes transcutaneous electrical nerve stimulation, electrical muscle stimulation, frequency-modulation neural stimulation, etc.

(5) Massage:

One of the treatment methods for myofascial pain.

(6) Acupuncture or dry needling therapy:

One of the treatment methods for myofascial pain.

(7) Micro-nutritional supplements:

If the patient has low or inadequate plasma levels of vitamins C and D, appropriate supplementation can help alleviate myofascial pain.

5.3. Medication treatment:

(1) Non-steroidal anti-inflammatory drugs (NSAIDs):

Can be used for myofascial pain and are effective for acute inflammation, but long-term use should be avoided and their side effects should be noted.

(2) Muscle relaxants:

Can help improve sleep quality and relieve pain.

(3) Benzodiazepines:

Have sedative and hypnotic effects but should not be used for long periods.

(4) Antidepressants:

Can alleviate pain and emotional disorders and depression caused by the disease.

(5) Local anesthetic patches:

Applied to the painful area to relieve pain.

(6) Tramadol:

A weak opioid analgesic that can relieve pain, but should not be used for long periods.

(7) Local injection of botulinum toxin:

Can reduce pain caused by muscle spasms at trigger points.

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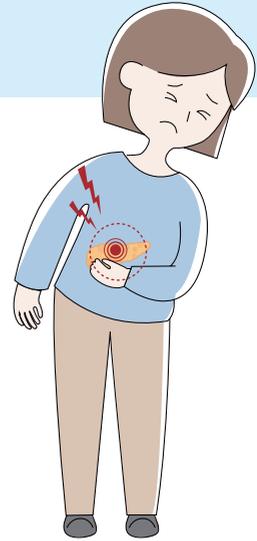
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Chapter 15

Chronic Pancreatitis Pain and Treatment



1. Introduction

- 1.1. Acute pancreatitis is an acute inflammatory condition of the pancreas, characterized by abdominal pain accompanied by elevated pancreatic enzymes in the blood or urine.
- 1.2. Chronic pancreatitis occurs after persistent or recurrent acute pancreatitis. The main features are irreversible changes in pancreatic tissue or pancreatic duct structures, such as fibrosis, calcification, and cyst formation. These changes often result in chronic pain, decline in pancreatic digestive function, and insufficient pancreatic endocrine function, ultimately leading to malnutrition and diabetes.
- 1.3. Most cases of acute pancreatitis do not progress to chronic pancreatitis, regardless of the cause. The most common condition that leads to chronic pancreatitis is when the patient has both smoking addiction and alcohol abuse.

2. Etiology of chronic pancreatitis

- 2.1. Medications or substances (most common)
 - (1) Alcohol
 - (2) Tobacco or cigars
- 2.2. Patient's own diseases
 - (1) Hypercalcemia, hyperparathyroidism
 - (2) Hyperlipidemia (especially hypertriglyceridemia), lipoprotein lipase deficiency
 - (3) Chronic renal failure
- 2.3. Obstruction of the main pancreatic duct
 - (1) Malignant tumors
 - (2) Scarring from injury or inflammation
- 2.4. Recurrent episodes of acute pancreatitis
- 2.5. Autoimmune diseases
- 2.6. Others

3. Treatment recommendations for chronic pancreatitis pain

- 3.1. First, treat the lesions that can be treated through endoscopic or surgical procedures.
- 3.2. Make lifestyle changes and strengthen social (interpersonal) support.

- (1) Alcohol: If there is a history of alcohol abuse, abstinence is the primary recommendation for pain treatment. In Taiwan, alcohol abuse is the primary risk factor for chronic pancreatitis. Even if the patient develops chronic pancreatitis due to other causes, if there is a history of alcoholism, it is strongly advised to avoid alcoholic beverages.
- (2) Tobacco: Smoking cessation should be actively encouraged. Tobacco is an independent risk factor for developing chronic pancreatitis. Moreover, smoking accelerates the progression of pancreatitis and increases sensitivity to pancreatitis-related pain.
- (3) Family and social support: Many patients with chronic pancreatitis face complex social, family, or marital difficulties due to the progressive nature of the disease. They often become socially isolated, so support from family, friends, or patient support groups is particularly important for patients with chronic pancreatitis. When facing difficult-to-treat pain symptoms, the support of family, friends, or patient support groups can provide crucial assistance in treatment.

3.3. Nerve block procedures (e.g., celiac plexus block) can provide short-term pain relief (usually around 6 months).

3.4. Medication treatment may include various types of pain relievers.

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Chapter 16

Treatment of Non-Cancer Chronic Pain in the Elderly



1. Introduction

- 1.1. Although many people over the age of 65 still live very healthy lives (including physical, psychological, and social aspects), internationally, the definition of elderly is people over the age of 65.
- 1.2. The older a person gets, the higher the incidence of chronic pain, which is also the most common complaint.
- 1.3. Common conditions include joint pain and lower back pain.
- 1.4. Chronic pain in the elderly often leads to depression, social isolation, sleep disorders, mobility issues, increased use of medical resources, and increased expenses. These symptoms can form a vicious cycle with chronic pain and worsen the overall condition.
- 1.5. Obstacles to the assessment and treatment of chronic pain in the elderly include:

- (1) Difficulty in achieving a comprehensive pain assessment.
- (2) Patients may not be able to fully report their condition.
- (3) Patients' symptoms may not be clear.
- (4) As patients age, the deterioration of organ functions such as the central nervous system, liver system, and kidney system affects the assessment, treatment, and occurrence of accidents related to pain.
- (5) Pain can also lead to loss of functional abilities such as cognitive decline, deterioration of walking ability, occurrence of accidents, multiple medication use, and medication side effects.

2. Common pain-related problems in the elderly

2.1. Non-neurological pain after tissue injury:

- (1) Arthritis: Rheumatoid arthritis, osteoarthritis, gouty arthritis, traumatic arthritis.
- (2) Spine-related pain: Degenerative changes in the spine/intervertebral discs, spinal stenosis.
- (3) Myofascial pain: Lower back pain, shoulder and neck stiffness.

2.2. Neurological pain after tissue injury:

- (1) Postherpetic neuralgia.
- (2) Trigeminal neuralgia.
- (3) Diabetic neuropathic pain.
- (4) Phantom limb pain (neuropathic pain after limb amputation).
- (5) Spinal nerve root neuropathic pain.
- (6) Central nervous system neuropathic pain after stroke.

3. Decrease in organ function in the elderly

3.1. Central nervous system

- (1) The elderly may experience stroke, transient cerebral ischemia, dementia, memory loss, Parkinson's disease, and other central nervous system disorders.
- (2) Genetic diseases can accelerate the degeneration or disease of the central nervous system.
- (3) Comorbidities in various parts of the body may also accelerate the degeneration or disease of brain function.

3.2. Liver system

- (1) From the age of 50, the weight of the liver decreases by 1% per year ; therefore, decreases its function.
- (2) Bile retention and atherosclerosis of the liver's blood vessels also increase with age.
- (3) If there is cirrhosis, the liver's metabolism of drugs may significantly decrease.

3.3. Kidney system

- (1) From the age of 40, kidney function decreases by 1% per year.
- (2) If there are kidney diseases such as polycystic kidney, hydronephrosis, kidney stones, ureteral stones, pyelonephritis, or other chronic kidney diseases, the kidney's metabolism and excretion of drugs may significantly decrease.

3.4. Regarding the efficacy of medications

- (1) The sensitivity of the elderly to sedatives, hypnotics, and opioid drugs increases, so the dosage should be adjusted.
- (2) The sensitivity of the elderly's autonomic nervous system to drugs decreases, so caution should be taken when using cardiovascular drugs.

4. Understanding of relevant care knowledge by caregivers

Patients, family members, and caregivers should understand the relevant knowledge of preventing and treating chronic pain, including the causes of pain, treatment methods, use of medications, monitoring of medication side effects, and non-pharmacological pain relief methods.

5. Medication treatment

For chronic pain in the elderly, the use of analgesic medications is the most common method, but attention should be paid to their impact on the cognitive function (e.g. delirium), organ function (e.g. respiratory depression, impaired liver and kidney function), and daily functioning (e.g. falls) of the elderly. Multiple drug use and drug interactions should also be considered.

6. Exercise and rehabilitation therapy

- 6.1. The goal is to restore joint range of motion and muscle function in patients.
- 6.2. Methods that can be used include exercise therapy, hydrotherapy, heat therapy, electrotherapy, ultrasound therapy, manual therapy, traction therapy, and the use of assistive devices.

7. Other treatments

- 7.1. Complementary and alternative medicine treatments: such as traditional Chinese medicine, acupuncture, herbal medicine, and nutritional therapy (supplementing micronutrients), etc.
- 7.2. Trigger point injection, joint injection, spinal cord stimulation, and nerve block procedures, etc.

8. Strengthening family and social support

- 8.1. Active involvement of family members: Family members should have a moderate understanding of the patient's condition, adjust their coping attitudes (positive emotions), and improve their caregiving skills.
- 8.2. Encourage patients to participate in social activities.
- 8.3. Encourage patients to join relevant support groups and participate in activities.
- 8.4. Seek assistance from social resources.

9. Evaluation of treatment effectiveness

Assessment of activities of daily living (functional ability), evaluating changes and improvements before and after treatment. Common assessment content includes:

- 9.1. Assessment of activities of daily living: Using a numerical scale (0 ~ 10 points), the assessment content can include bathing, dressing, toileting, mobility, and eating.
- 9.2. Assessment of the degree of impairment in daily life activities: Using a numerical scale (0 ~ 10 points), the assessment content can include housework, social activities, leisure and entertainment, exercise, sleep, and emotions.

Note: 10 points indicate that the activity of daily living is severely affected. 0 points indicate that the activity of daily living is not affected.

Figure 1. The extent to which daily life is affected by pain (numerical scale, with 10 points)



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Chapter 17

Lower Back Pain and Treatment



1. Introduction

- 1.1. There are many causes of lower back pain, the most common being herniated or degenerated intervertebral discs causing nerve root compression or chronic inflammation of the muscle group. However, it is also important to consider whether there are any urgent conditions that require immediate intervention, such as acute nerve root compression, tumor invasion, bleeding, or infection.
- 1.2. When lower back pain persists or recurs for more than three months, it is referred to as chronic lower back pain.

2. Causes of lower back pain

- 2.1. 97% of the causes can be explained by structural mechanics, such as herniated or degenerated intervertebral discs, facet joint arthritis, sacroiliac degenerative joint disease, spinal stenosis, foraminal stenosis, chronic inflammation of the ligaments or muscle groups, or vertebral fractures.

- 2.2. 1% of the causes are due to non-structural mechanical factors, such as tumors, infections, hematomas, and other factors.

3. Methods for chronic lower back pain relief

- 3.1. Proper examination, testing, and analysis should be done to determine the primary etiology and comorbidities of chronic lower back pain, including assessing for neurological deficits, presence of malignant tumors, fractures, infections, and psychological comorbidities (such as depression, anxiety, insomnia).
- 3.2. Patients should be educated about the prevention and treatment of chronic lower back pain, learn necessary preventive or rehabilitation techniques, improve physical fitness, engage in daily activities, restore interpersonal relationships and work capacity, etc.
- 3.3. Non-pharmacological treatments
- (1) Rehabilitation therapy: Such as traction, hydrotherapy, electrotherapy, assistive devices, manual therapy, and correction of poor posture.
 - (2) Exercise: Stretching exercises and strengthening exercises for muscle groups.
 - (3) Relaxation therapy, massage.
 - (4) Avoiding behaviors or movements that trigger pain.
 - (5) Changing lifestyle or job nature.
- 3.4. Non-opioid pharmacological treatments
- Nonsteroidal anti-inflammatory drugs, acetaminophen, centrally acting muscle relaxants, antidepressants, anticonvulsants, local anesthetics patches.

3.5. Opioid pharmacological treatments

Opioids are more commonly used for acute pain and rarely used for chronic pain. If opioids are to be used for chronic pain, other treatment options should be considered first to alleviate pain. Only after weighing the pros and cons of opioid treatment should opioids be considered. However, any opioid treatment should be used at the lowest possible dose and only as short-term, intermittent treatment.

3.6. Interventional (invasive) treatments

Epidural (lumbar, sacral) steroid injections, selective nerve block, facet joint injections, radiofrequency treatment, spinal cord stimulation.

3.7. Surgical treatment

- (1) Necessary surgical treatment should be performed based on the diagnosis and opinions of orthopedic, neurosurgical, and related disease experts.
- (2) Emergency surgical treatment.

3.8. Other treatments

Transcutaneous electrical nerve stimulation, acupuncture

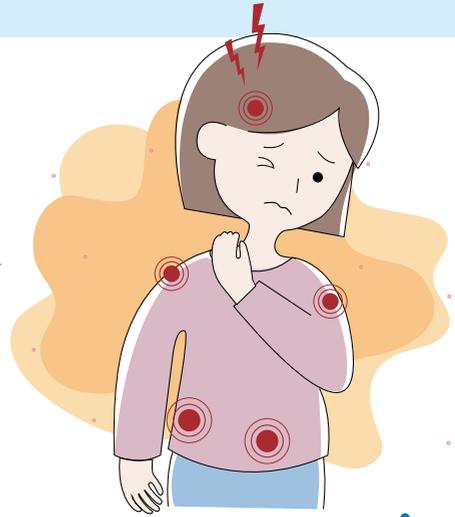
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Chapter 18

Fibromyalgia and Treatment



1. Introduction

- 1.1. Fibromyalgia is a disease characterized by chronic widespread pain (on both sides of the body and in multiple locations) and other non-pain symptoms.
- 1.2. Fibromyalgia often coexists with other diseases (such as sleep disorders, headaches, depression, anxiety, brain fog, fatigue, lethargy, forgetfulness, irritable bowel syndrome, neuropathic pain, muscle and joint pain, etc.), and has similar symptoms, but also includes widespread pain on both sides of the body.
- 1.3. The non-pain symptoms of fibromyalgia are relatively common and nonspecific, making it difficult to objectively define and quantify. Not only can there be significant differences in symptoms between different patients, but even in the same patient, the symptoms that occur daily may vary.

- 1.4. In recent years, most scholars believe that the mechanism of pain in fibromyalgia is related to long-term physical and psychological stress that has not been properly relieved, resulting in central nervous system sensitization and triggering many symptoms.

2. Clinical symptoms of fibromyalgia

- 2.1. Fibromyalgia is a chronic disease (defined as lasting more than 3 months), with its main symptoms being widespread pain on both sides of the body and in multiple locations, accompanied by other symptoms such as fatigue, sleep disorders, and cognitive impairments.
- 2.2. The characteristics of pain include hyperalgesia and abnormal pain, which are related to central nervous system sensitization, reaching the level of neuropathic pain.
- 2.3. Patients describe the pain as sharp, burning, stabbing, shooting, pricking, and deep pain, and the pain may be aggravated by factors such as damp or cold weather, anxiety, mental (psychological) stress, overwork, poor sleep quality (inability to recover physical energy during sleep), and noise.
- 2.4. In terms of cognitive impairments in the brain: Patients may complain of inability to concentrate, think, memory decline, inability to respond quickly to questions, and inability to fully express themselves.
- 2.5. The experience of fibromyalgia patients:
 - (1) Living in fatigue and pain every day, it can be said to be exhausted.

- (2) Should be diagnosed and treated as early as possible, and should be treated with a multimodal approach (physical, psychological, and medication treatment).
- (3) Should use appropriate exercise and rehabilitation treatment, and patients should be treated gently.
- (4) Can receive understanding and support from friends and family.

3. Common treatment methods for fibromyalgia

3.1. Balancing work and rest (most important)

Pain can affect people's rest and daily work, disrupting their daily routines. Like many others, patients may reduce contact with family and friends due to pain. Many activities that they used to enjoy may become difficult to do, leading to a decrease in enjoyment in life and the development of anxiety and depression. Therefore, some adjustments may be needed in daily life, such as:

- (1) Moderately reducing workload and increasing leisure and rest time.
- (2) Adjusting mindset to maintain a pleasant mood.

3.2. Releasing stress or enhancing stress resistance

Enduring excessive internal stress for a long time can induce or worsen pain. It can also make a person feel tired, have reduced memory, impatience, irritability, and increased sensitivity to pain. Reducing internal stress can help relieve pain. You can try the following methods:

(1) In terms of stress release:

- Examine your daily routine to see if it's filled with responsibilities and scheduled activities.
- Rearrange your to-do list based on your own energy levels.
- Schedule time for exercise, leisure, and self-care.

(2) To enhance resilience:

Acknowledge the contributions you've made in terms of the meaning of life or the value of your existence, and approach the future with anticipation and enthusiasm.

3.3. Appropriate exercise and rehabilitation therapy:

- (1) Exercise such as aerobic exercise and resistance training can improve pain, fatigue, cognitive function, sleep, and other symptoms of fibromyalgia patients, as well as improve their quality of life.
- (2) Regular and long-term exercise can improve the function of the brain and other tissues, organs, and systems in the body through changes in physical fitness. Significant improvements can be seen in pain, emotions, sleep, and other symptoms.
- (3) Exercise (rehabilitation) therapy includes walking, cycling, swimming, and resistance training in the rehabilitation department. The intensity of exercise is recommended to be within the range that the individual can tolerate, from light to moderate.
- (4) Hydrotherapy methods such as hot spring therapy, bathing therapy, and warm water therapy can also be used.

- (5) The above exercise (rehabilitation) therapy must be carried out voluntarily by the patient in a long-term and regular manner to achieve optimal results.

3.4. Maintain good sleep quality

Pain can make it difficult to fall asleep, and insufficient sleep can worsen pain, creating a vicious cycle. Maintaining good sleep quality is crucial in the treatment of pain. When having trouble falling asleep, try the following methods:

- (1) Strengthen physical health, maintain a cheerful mood, and cultivate self-affirmation while looking forward to and being passionate about the future.
- (2) Balance work and rest, reduce life stress.
- (3) Create a sleep-friendly bedroom environment: Avoid placing a TV or phone in the bedroom as much as possible. Keep the room dimly lit during sleep, ensure a comfortable bed and pillow, and maintain a comfortable room temperature.
- (4) Maintain a regular sleep schedule: Try to sleep and wake up at the same time every day to maintain the stability of our biological clock. Avoid staying in bed, and try not to take naps during the day.
- (5) Avoid consuming stimulating drinks such as tea, coffee, and alcohol before bedtime.
- (6) Reading heartwarming books, listening to elegant music, and taking a warm bath before bedtime can help with falling asleep and maintaining good sleep quality.
- (7) Relaxation, deep breathing, meditation, and calm thinking can help with falling asleep.

- (8) Seeking assistance from a physician to prescribe sleep aids or further investigate if there are factors that interfere with sleep, such as sleep apnea or cardiovascular diseases, and provide appropriate treatment.

3.5. Psychological therapy:

- (1) Long-term physical and psychological stress can trigger physical pain and other psychosomatic symptoms. The use of psychological methods can partially relieve physical and mental stress and pain.
- (2) Within the inner world of fibromyalgia patients, there may be certain emotional stressors such as frustration, dissatisfaction, feelings of helplessness, or a sense of unfair treatment. Additionally, patients often have negative (pessimistic) thoughts about pain and exhibit poor coping strategies.
- (3) In terms of psychological therapy, it's also important to acknowledge the contributions one has made in terms of the meaning of life or the value of one's existence.
- (4) Common psychological treatment methods include:
 - Cognitive-behavioral therapy is the most commonly used psychological therapy, focusing on informing patients about the causes, risk factors, prevention measures, and improvement techniques of chronic pain, and teaching patients exercises and activities to overcome chronic pain and put them into practice.
 - The use of meditation combined with mindfulness therapy is a stress-reducing relaxation therapy that combines mindful meditation with body scanning and yoga, which is beneficial for the treatment of chronic pain.

- Acceptance and Commitment Therapy (ACT) is aimed at promoting cognitive flexibility (changing one's thinking patterns) and supporting individuals in taking action to pursue goals aligned with their life values.

3.6. Medication treatment:

(1) Introduction to medication treatment:

- When it comes to this condition, treatment should not only address pain but also fatigue, sleep disorders, emotional issues, cognitive dysfunction, and other bodily abnormalities. Therefore, a multimodal treatment approach should be adopted for this condition.
- Doctors and patients must understand that medication treatment is not a very effective treatment for fibromyalgia. Medication treatment should be considered as an adjunctive therapy to non-pharmacological treatment.

(2) Medication treatment:

- Antidepressant medication:

It is internationally recognized that antidepressant medication can partially relieve fibromyalgia, and the dosage used is much lower than that used for treating depression, and its onset of action is also earlier.

- Antiepileptic medication:

It is internationally recognized that this type of medication can also partially relieve fibromyalgia. Pregabalin is the preferred choice.

- Opioid-like medication:

International guidelines recommend against the use of all potent opioid-like medications for this condition, considering their poor efficacy and adverse effects such as physical or psychological dependence and opioid-induced pain. As for weak opioid-like medications, only tramadol is recommended for use by some countries internationally, but it is also a later-line choice (not the preferred choice).

- Other aspects of medication use:

Sleeping pills: They are only effective in improving sleep quality but are ineffective for other symptoms of fibromyalgia.

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Chapter 19

Headache (Including Migraine) and Treatment



1. Introduction

- 1.1. The causes of headaches are highly complex and can result from abnormalities in the structures and organs of the head and neck, as well as from physical or psychological conditions. However, for approximately 90% of headaches, the triggering factors are not easily identifiable.
- 1.2. The human brain is responsible for regulating and balancing various states of body and mind, including maintaining vital functions and coping with external stressors such as diseases or other abnormal conditions. This complexity exacerbates the intricacies of headaches.
- 1.3. Headaches can generally be categorized as primary headaches (without an apparent underlying cause) and secondary headaches (with an identifiable underlying cause).
- 1.4. Primary headaches account for 90% of all headaches, with migraines and tension-type headaches being the majority.

- 1.5. Secondary headaches have a wide variety of pain-causing factors, with medication overuse headache being more common.
- 1.6. Opioid-like medications should be avoided for headache treatment, especially strong ones, and long-term use should be avoided.
- 1.7. For the treatment of secondary headaches, the focus should be on treating the underlying cause of the headache, and not just the headache itself.
- 1.8. When a headache persists or occurs intermittently for more than three months, it is called chronic headache.

2. Treatment methods

2.1. Recommendations for the treatment of primary headaches:

(1) Non-pharmacological treatments:

- Engage in aerobic exercise or progressive muscle strength training.
- Practice mindfulness and relaxation therapy.
- Avoid consuming foods that trigger the condition.
- Undergo physical therapy or massage treatment.

(2) Pharmacological treatments:

Please use medication as directed by a doctor.

(3) Self-care for headache management (promoting physical and mental health):

- Maintain regular exercise and sleep patterns, and consume a balanced diet.

- Rearrange the work or study environment, such as the placement of computer screens, adjusting chair height, and ensuring comfortable back support (for the lower back).
- Relax the muscles of the shoulders and neck and move them appropriately. Apply ice packs to the area of shoulder and neck pain (for acute muscle strain) or warm compresses (for chronic muscle strain).
- Maintain a positive mindset and pleasant emotions.
- Limit daily coffee consumption to no more than two cups to avoid caffeine withdrawal headaches.
- Avoid long-term use of analgesics for shoulder and neck pain (no more than three days per week) to prevent headaches caused by excessive medication use.
- Avoid foods that may trigger migraines, such as red wine, aged cheese, and chocolate.

2.2. Recommendations for the treatment of medication overuse headaches:

- (1) After consulting with a physician, cease the use of pain relievers that have been overused for at least one month. This can be done either abruptly or through a gradual reduction approach, such as reducing the medication by 10-30% per week for users of opioid-like medications.
- (2) After stopping the medication, most headaches will improve within seven days, but it may take up to three weeks.
- (3) If the patient experiences nausea, vomiting, or other withdrawal symptoms, they can take antiemetic medication as directed by a doctor.

- (4) Patients should have a follow-up visit with a healthcare professional 4 ~ 8 weeks after stopping the medication to assess the improvement of their headaches.
- If the headache is caused by medication overuse, it will completely disappear after stopping the medication.
 - If medication overuse is not the main factor causing the headache, stopping the medication will not improve the headache. In this case, the patient should seek medical treatment for their headache.

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