Chronic nonmalignant pain: How to ‘turn down’ its physiologic triggers

Ease suffering by managing psychiatric and social factors that heighten pain awareness

Mrs. A, age 50, reports recurrent headaches and neck pain from a motor vehicle accident in 1999. At the time, MRI revealed degenerative changes at the C5-C6 vertebrae without bony stenosis or spinal injury. Treatment consisted of conservative measures and physical therapy; she was not a candidate for surgical intervention.

Although Mrs. A can manage activities of daily living, pain prevents her from pastimes she previously enjoyed, including painting and pottery, and is causing problems in her marriage.

Mrs. A’s pain became much worse approximately 1 year ago. In the past year, its severity has lead to multiple clinical presentations and consultations. She uses transdermal fentanyl, 75 mcg/hr every 72 hours, and acetaminophen/hydrocodone, 5 mg/500 mg every 4 hours up to 6 times a day for breakthrough pain. Even so, she still rates her pain as 7 on a 10-point scale.

Pain is a complex perception with psychological and sensory components. It is the most common reason patients seek treatment at ambulatory medical settings. Most pain remits spontaneously or responds to simple treatment, but up to 25% of symptoms remain chronic.

Chronic pain—defined as pain at ≥1 anatomic sites for ≥6 months—can substantially impair adaptation and vocational and interpersonal functioning. Treatments that focus solely on analgesics are shortsighted and often of limited benefit. Patients with chronic pain need a rehabilitative approach that incorporates psychiatric and psychological intervention.
Chronic pain

Table 1

**DSM-IV-TR diagnostic criteria for pain disorder**

| A. | Pain in ≥1 anatomical sites |
| B. | Produces distress or impairs social, occupational, or other functioning |
| C. | Psychological factors have an important role in pain onset, severity, exacerbation, or maintenance |
| D. | Not intentionally produced or feigned (as in factitious disorder or malingering) |
| E. | Not better accounted for by a mood, anxiety, or psychotic disorder and does not meet criteria for dyspareunia |

**Subtypes**

- **Pain disorder associated with psychological factors**, which are judged to have the major role in pain onset, severity, exacerbation, or maintenance
- **Pain disorder associated with both psychological factors and a general medical condition**, which are judged to have important roles in pain onset, severity, exacerbation, or maintenance
- **Pain disorder associated with a general medical condition.** If psychological factors are present, they do not have a major role in pain onset, severity, exacerbation, or maintenance

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**Complex chronic pain**

Most individuals with chronic pain can maintain basic functioning, work, relationships, and interests. They work with healthcare providers and obtain relief from medications or other interventions.

Some, however, are preoccupied with—and entirely debilitated by—their pain. For them, life revolves around the pain and perceived disability. Many if not all aspects of this patient’s life are contingent on pain and fears it might worsen.2 Preoccupation with pain can profoundly affect social activities and prevent employment. The patient may become dependent on others, and being a patient can become a primary psychosocial state. A chronic pain patient also may become increasingly preoccupied with medication use and possibly abuse.

**Limits of pain disorder criteria.** Psychological factors can exacerbate and maintain chronic pain.3 Patients with a psychological component to their pain are likely to meet DSM-IV-TR criteria for pain disorder (Table 1), which include the possibility that psychological factors can precipitate, exacerbate, or maintain—but do not necessarily have to fully account for—pain.

According to these criteria, pain can be associated with:

- a general medical condition
- psychological factors
- both.

Pain disorder associated with a general medical condition is recorded solely on Axis III (general medical conditions) when psychological factors have minimal or no involvement in the pain. When psychological factors are implicated, 1 of the other types of pain disorder would be encoded on Axis I. However, it is questionable whether these subtypes represent clinically useful subclassifications. Aigner et al4 determined that patients categorized into these subtypes could not be distinguished in terms of pain severity or disability.

Pain disorder criteria often are perceived as insufficiently operationalized—there is no checklist of symptoms that collectively define the syndrome.5,6 The clinician must infer whether—and to what extent—psychological factors are involved in the pain.5 There are no guidelines to help psychiatrists ascertain whether psychological factors “have an important role” in pain (criteria C) or if pain is “not better accounted for” by a mood disorder (criteria E).6 This distinction can be indecipherable because of frequent comorbidity of mood disturbances with pain.2,8 Some clinicians have suggested that pain disorder be removed from the somatoform disorder classification and instead confined to Axis III.8

**What are the risk factors?**

Psychological and social covariates play a substantial role in the chronic pain experience (Table 2, page 25). How patients experience chronic pain also is influenced by personality and premorbid, semi-dormant

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characteristics that become activated by the stress of unremitting pain.7

Long-lasting pain has multiple effects, including changes in:

• mood
• thought patterns
• perceptions
• coping abilities
• personality.

Psychological vulnerabilities may manifest as psychiatric disorders. The patient may become impatient with treatment measures and intolerant of adverse effects, and drop out of rehabilitation programs.

CASE CONTINUED
Underlying causes
Psychological and psychosocial factors appear to play an important role in Mrs. A’s pain. After her husband’s job was restructured, the couple moved away from Mrs. A’s mother, which she found distressing. Additionally, Mrs. A reports that her son has incurred substantial gambling debt.

Mrs. A admits she has “a hard time” accepting these events, but she cannot acknowledge anger or frustration. She avoids questions about such feelings and focuses on her pain. She reports, “The pain is always there and ruins my entire life. Absolutely nothing gives me relief.”

She does not endorse depressive or psychotic symptoms. She sometimes has passive thoughts of death when she feels hopeless about her persistent pain, but she vehemently denies suicidal ideas, intent, or plans. She has smoked 1 pack of cigarettes per day for 12 years but denies alcohol abuse or use of illicit substances.

She complains that her husband “is on the computer all day long.” She has difficulty telling him about her displeasure or asking him to share in activities. She feels that he disregards her feelings, and she is most apt to experience pain exacerbations when he does this. She denies ongoing litigation and is not receiving disability compensation.

Biopsychosocial assessment
Assessing a chronic pain patient includes evaluating somatic, psychological, and social factors (Table 3, page 30).3 A biopsychosocial approach recognizes that the patient’s experience of pain, presentation, and response to treatment are determined by the interaction of:

• biological factors
• the patient’s psychological makeup
• psychological comorbidities
• the extent of social support
• extenuating environmental circumstances

Single-dimension pain assessment instruments such as the Numeric Rating Scale or Visual Analog Scale can help quantify pain severity and intensity.11 Multidimensional assessments such as the Coping Strategies Questionnaire12 or Multidimensional Pain Inventory13 can enhance information gathered from a clinical interview by revealing emotional, cognitive, and subsyndromal psychological factors that contribute to pain.

A thorough psychiatric assessment may reveal psychiatric comorbidity and psychological conditions that mediate pain.8

Table 2
Patient factors that contribute to or perpetuate chronic pain

<table>
<thead>
<tr>
<th>Poor modulation of emotions (anger, depression, anxiety)</th>
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<tbody>
<tr>
<td>Somatization (using pain to avoid conflicts, express anger, or punish others)</td>
</tr>
<tr>
<td>Problematic cognitive styles (catastrophizing, perceived loss of control)</td>
</tr>
<tr>
<td>Poor coping skills</td>
</tr>
<tr>
<td>Psychiatric comorbidities</td>
</tr>
<tr>
<td>Social/interpersonal variables:</td>
</tr>
<tr>
<td>• Solicitous spouse/significant others reinforcing pain behaviors</td>
</tr>
<tr>
<td>• Problematic management of interpersonal conflicts, such as marital dissatisfaction</td>
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<tr>
<td>• History of physical abuse</td>
</tr>
<tr>
<td>• History of sexual abuse</td>
</tr>
<tr>
<td>• Substance abuse/dependence</td>
</tr>
<tr>
<td>Reinforcement for remaining sick and/or disabled:</td>
</tr>
<tr>
<td>• Financial settlement or pending litigation</td>
</tr>
<tr>
<td>• Disability/workers’ compensation incentives to remain in the sick role</td>
</tr>
<tr>
<td>• Avoidance of unpleasant work/domestic responsibilities, job dissatisfaction</td>
</tr>
<tr>
<td>• Anaesthetic dependence; drug diversion</td>
</tr>
</tbody>
</table>

Source: Adapted from reference 3

How patients experience chronic pain is influenced by personality and characteristics that are activated by unremitting pain

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Recognizing and treating coexisting psychiatric disorders often will enhance effective pain management.

Subsyndromal psychological factors—such as troubling affective states, problematic cognitive styles, and ineffective coping strategies and interpersonal skills—can accompany pain. If unattended, such factors can heighten the patient’s pain awareness and compromise rehabilitation.

For example, patients such as Mrs. A can aggravate pain by catastrophizing. Having a tendency to exaggerate pain and the significance of related life events interferes with their ability to attend to matters within their control and pursue productive activities. Catastrophizing is associated with increased pain and perceived disability, poor adjustment to pain, and marked emotional distress.

**How pain shapes beliefs.** Pain can shape the manner with which patients make sense of events in their lives by altering the way they perceive themselves and the world. Problematic beliefs of the self (inadequacy and helplessness), of the world (dangerousness), and of the future (hopelessness) can produce significant distress. A patient with such beliefs may experience a loss of self-esteem, self-efficacy, and connections with others and may experience marked disappointment and disillusionment.

Such beliefs may lead to unhealthy behaviors, including:

- substance abuse
- nonadherence with treatment
- withdrawal from support systems
- incapacitating emotional states, such as marked dysphoria, anger, or anxiety.

Low self-efficacy is a predictor of perceived disability resulting from persistent pain. Patients with limited coping ability may experience despair and chronic pain is a risk factor for suicide.

**CASE CONTINUED**

**Multifaceted treatment**

You prescribe amitriptyline, 20 mg at bedtime, for pain and refer Mrs. A for cognitive-behavioral therapy (CBT). The emphasis of therapy is to identify affective states and cognitive distortions that are temporally related to pain exacerbations, to develop coping skills to deal with stressors, and to effectively express her anger. Mrs. A learns relaxation techniques and self-hypnosis to reduce distress. These measures help reduce her pain severity ratings to 3 on a 10-point scale. She also participates in physical therapy and yoga classes, which increase her endurance.

**Psychiatrists’ role in treatment**

Many chronic nonmalignant pain syndromes—including arthritic conditions, back pain, and fibromyalgia—are tenacious and not easily cured. Treatment goals are to relieve pain and maximize the patient’s functioning and quality of life while mini-
mizing risks of iatrogenic harm. As part of a biopsychosocial approach to care:

- diagnose and treat psychiatric comorbidities
- assess responses to treatment interventions
- refine treatment measures when patients do not achieve functional and adaptational goals
- initiate pharmacologic interventions for pain
- address subsyndromal emotional and cognitive impediments to functional restoration.

**Psychotherapy.** Meta-analyses of patients with chronic low back pain, rheumatoid arthritis, osteoarthritis, fibromyalgia, and unspecified somatic pain found that CBT is significantly more effective than wait-listing in reducing pain severity ratings and pain expression and in improving coping strategies. These analyses had limitations, however. Sample sizes were small because it is often difficult to retain patients in trials of complex, multicomponent treatment approaches. In addition, measures of healthcare utilization, analgesic use, and resuming work after treatment were sparse in several studies.

In initial CBT sessions, the goal is to elicit the patient’s:

- perception of pain
- life situations
- beliefs about his or her life, relationships, and the future
- coping measures.

The focus then shifts to assessing the accuracy and usefulness of the patient’s beliefs and coping strategies and to replace maladaptive ones.

**Clinical Point**

Self-regulatory techniques such as biofeedback can help patients ‘turn down’ the physiologic triggers that perpetuate pain.

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**Table 4**

<table>
<thead>
<tr>
<th>Class/drug</th>
<th>Uses</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antidepressants</strong></td>
<td>Neuropathic pain, tension and migraine headache, FM, functional GI disorders, pain comorbid with depression/anxiety</td>
<td>NE/5-HT reuptake inhibitors are most effective for analgesia; side effects (TCAs may be least tolerable); drug interactions</td>
</tr>
<tr>
<td><strong>Anticonvulsants</strong></td>
<td>Neuropathic pain, migraine headache, central pain, phantom limb pain</td>
<td>Side effects (sedation, motor and GI effects, rash); drug interactions</td>
</tr>
<tr>
<td><strong>Benzodiazepines</strong></td>
<td>Muscle relaxation, restless legs syndrome, anxiety, insomnia</td>
<td>Abuse/dependence potential; sedation</td>
</tr>
<tr>
<td><strong>Lithium</strong></td>
<td>Cluster headache prophylaxis</td>
<td>Not effective for episodic cluster headache; risk of toxicity if dehydration occurs or with certain drug combinations</td>
</tr>
<tr>
<td><strong>Stimulants</strong></td>
<td>Opioid analgesia augmentation, opioid-induced fatigue and sedation</td>
<td>Abuse/dependence potential; overstimulation, anorexia, insomnia</td>
</tr>
<tr>
<td><strong>Antipsychotics</strong></td>
<td>Neuropathic pain, migraine, cancer pain, delirium</td>
<td>Limited data; risks such as EPS and TD may outweigh benefits</td>
</tr>
</tbody>
</table>

**Source:** Adapted from reference 3

**Table**: Uses of psychotropics in patients with chronic pain

**Notes**:
- **EPs**: extrapyramidal symptoms; **FM**: fibromyalgia; **GI**: gastrointestinal; **NE**: norepinephrine; **S-HT**: serotonin;
- **TCAs**: tricyclic antidepressants; **TD**: tardive dyskinesia
Psychotropics approved for managing pain

<table>
<thead>
<tr>
<th>Drug</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbamazepine</td>
<td>Trigeminal neuralgia</td>
</tr>
<tr>
<td>Divalproex</td>
<td>Migraine prophylaxis</td>
</tr>
<tr>
<td>Duloxetine</td>
<td>Diabetic neuropathy</td>
</tr>
<tr>
<td>Gabapentin</td>
<td>Postherpetic neuralgia</td>
</tr>
<tr>
<td>Pregabalin</td>
<td>Postherpetic neuralgia, diabetic neuropathy, fibromyalgia</td>
</tr>
</tbody>
</table>

Source: Adapted from reference 3

Individualize medication selection, considering:
- cost
- ease of use
- tolerability
- interactions with coadministered medications
- clinical comorbidities.

Opioids, long the mainstay of treatment for acute and cancer-related pain, also are used to treat chronic nonmalignant pain. Whether long-term opioid use improves quality of life and adaptive functioning of chronic pain patients remains controversial.29 Psychiatric care may be necessary if:
- opioid therapy fails
- patients become dependent on escalating doses of opioids.

Patients may need opioid detoxification and prudent use of co-analgesics to restore their function.30

Antidepressants influence pain by blocking monoamine reuptake. Those that influence noradrenergic and serotonergic transmission may have greater analgesic effects than those that affect serotonin or norepinephrine reuptake alone.31-33

Anticonvulsants mitigate pain by influencing sodium or calcium channel regulation, GABA activity, or combinations of the 3.

In randomized controlled trials that included patients with diabetic and postherpetic neuropathies:
- one-third of patients achieved ≥50% pain relief with tricyclic antidepressants (TCAs) or anticonvulsants
- adverse effects were slightly more common with TCAs.34,35

Anticholinergic and alpha-adrenergic side effects may limit TCAs’ usefulness.

Because antidepressants and anticonvulsants have different presumed mechanisms of action for pain relief, anticonvulsants might be useful for patients whose pain persists despite optimal antidepressant dosing or for whom antidepressants are intolerable. Alternately, coadministering antidepressants and anticonvulsants might capitalize on complimentary mechanisms of action. With coadministration, lower doses may be sufficiently analgesic and avoid adverse effects.

Benzodiazepines have been used short-term to mitigate muscle spasm pain as in fibromyalgia, phantom limb pain, and restless legs syndrome.36,37 Long-term benzodiazepine use can lead to low activity levels, high use of ambulatory medical services, and high disability levels, however.38 If required for muscle spasm or restless legs syndrome, benzodiazepines may best be confined to short-term use.

Antipsychotics. Limited studies have evaluated antipsychotics’ efficacy for chronic pain.39,40 Some have been found to be useful in neuropathic pain.40 Antipsychotics are seldom used to treat pain because of limited efficacy data, potential side effects, and an abundance of alternate agents. Because risks—most notably extrapyramidal side effects and tardive dyskinesia—appear to outweigh analgesic efficacy, I would confine antipsychotics to pain patients with delirium or psychosis. Antipsychotics’ potential role in treating refractory pain might warrant further investigation.40

Stimulants may reduce sedation, dysphoria, and cognitive inefficiency that can accompany opioid use.

References

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34. Dellemijn PL, Fields HL. Do benzodiazepines have a role in chronic pain management? Pain 1994;57:137-52.

Related Resources

Drug Brand Names
- Acetaminophen
- Hydromorphone
- Lortab
- other
- Duragesic
- Amitriptyline
- Eflaxin
- gabapentin
- Neurontin
- Carbamazepine
- Tegretol
- Lithium
- Esalikil
- Lisobid
- Divalproex
- Depakote
- Pregabalin
- Lyrica
- Duloxetine
- Cymbalta

Disclosure
Dr. Leo reports no financial relationship with any company whose products are mentioned in this article or with manufacturers of competing products.

Bottom Line
Assess patients with chronic pain for psychiatric comorbidities that can heighten pain awareness and compromise rehabilitation. Psychotherapy may help reduce pain and improve coping strategies. Consider prescribing psychotropic agents—such as antidepressants, anticonvulsants, or benzodiazepines—to mitigate chronic pain.