Pain in Patients Who Have Heart Failure
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Heart failure is a leading cause of hospitalization of older adults in the US. Clinicians providing care for patients who have heart failure typically focus on the patients' cardiac symptoms, like dyspnea and edema. There are several studies, however, showing that up to 75% of patients with heart failure also experience pain, a symptom not typically assessed by the clinicians who care for them. Regardless of the cause, presence of pain in a patient with heart failure is important. Pain has the potential to lead to worsen heart failure symptoms, reduce quality of life, and ultimately, cause poor patient outcomes.

Pathophysiology
As shown in the diagram below, pain in patients with heart failure is typically multifactorial in origin. Pain can be both acute and/or chronic. Acute pain, regardless of the initial cause, has been shown to result in increased activation of the sympathetic nervous system. This increase in sympathetic activity leads to:

- Increased levels of substance P, histamine, prostaglandins, and bradykinin
- Activation of sympathetic nervous system
- Increased...
  - Blood pressure and heart rate
  - Workload on heart
  - O2 consumption
  - Activity of renin-angiotensin system, cortisol levels, and antidiuretic hormone secretion, all leading to fluid retention
- Worsening heart failure symptoms
- Worsened heart failure symptoms, reduce quality of life, and ultimately, cause poor patient outcomes.

Pain

Contributing Factors
- Depression
- Medications
- Loss of independence
- Spiritual problems
- Immobility/deconditioning
- Multiple comorbidities
- Social isolation
- Loss of purpose

Worse prognosis

Worse quality of life

TIPS FOR DEALING WITH PAIN IN PATIENTS WHO HAVE HEART FAILURE
- Don’t forget to consider and evaluate pain in patients who have heart failure, as both acute and chronic pain can worsen heart failure symptoms if the pain is not controlled.
- When using analgesic medications to control pain, keep in mind that a number of medications should be avoided in patients who have heart failure. Notable among these are non-steroidal anti-inflammatory drugs, which cause fluid retention.
- Consider the approach of treating “total pain,” which emphasizes dealing not just with physical pain, but also the patient’s social, spiritual, and emotional needs.
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to an increase in norepinephrine and epinephrine levels which, in turn, increase cardiac work and oxygen consumption. It also increases activation of the renin-angiotensin-aldosterone system, potentially leading to fluid retention and overload. The factors can combine to worsen heart failure symptoms.

**Chronic pain** also has an effect on heart failure, but the effect appears unrelated to sympathetic hyperactivity and its mechanism is less well understood. Some theorize that chronic pain is a “maladaptive” response involving inflammation, with sensitization and excitability of neurons. In support of these theories, inflammatory markers like C-reactive protein are often elevated in patients with heart failure, as are markers of neural excitability like substance P.

**Types of Pain**

Awareness of the nature of a patient’s pain may allow identification of a reversible condition or help better inform the approach to treatment. Somatic pain is typically aching and throbbing and often due to arthritis. Visceral pain is often experienced as pressure and associated with nausea, vomiting and diaphoresis. Neuropathic pain, which often feels like a shooting or electric sensation, is commonly seen in patients with diabetes.

**Treatment**
The first step in pain management is to determine the type and severity of pain. The table below provides some general guidance on the approach to treatment of different causes and severities of pain in patients who have heart failure.

When medications are used for pain management, therapy can sometimes be challenging. Several analgesics should not be used, or used only with caution, in patients who have heart failure, such as non-steroidal anti-inflammatory drugs, which can cause fluid retention. In addition, because patients with heart failure often have impaired renal function, one must exercise care in dosing of analgesics that undergo, or whose metabolites undergo, renal clearance such as tramadol and morphine.

Because pain in patients with heart failure can have a variety of causes, multiple domains may need to be addressed to properly manage the pain rather than relying solely on medications. The idea of treating “total” pain has been emphasized by many experts. This approach emphasizes dealing not just with physical pain, but also the patient’s social, spiritual, and emotional needs.

Physical therapy is useful for improving function in patients with all forms of pain. Integrative medicine techniques, including massage, hydrotherapy, acupuncture, and mindfulness meditation, may also be appropriate.

Finally, a patient’s overall condition and prognosis should be considered. Some patients will be candidates for end-of-life palliative care and can be considered for hospice referral.

<table>
<thead>
<tr>
<th>Options for Treating Pain in Patients with Heart Failure</th>
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<tbody>
<tr>
<td><strong>Type of Pain</strong></td>
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<tr>
<td>Mild pain</td>
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<tr>
<td>Moderate pain</td>
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<tr>
<td>Severe pain</td>
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<td>Uncontrolled pain even with narcotics</td>
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<tr>
<td>Angina</td>
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<td></td>
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<tr>
<td>Neuropathic pain</td>
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References and Resources

ACOVE Quality Indicators
1. All vulnerable elders should be screened for chronic pain during the initial evaluation period.
2. All vulnerable elders should be screened for chronic pain every 2 years.
3. If a vulnerable elder with chronic pain is treated with opioids, THEN he or she should be offered a bowel regimen, or the medical record should document the potential for constipation or explain why bowel treatment is not needed.

Interprofessional care improves the outcomes of older adults with complex health problems

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Supported by: Donald W. Reynolds Foundation, Arizona Geriatric Education Center and Arizona Center on Aging