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ELDER CARE

A Resource for Interprofessional Providers

Pain in Patients Who Have Heart Failure

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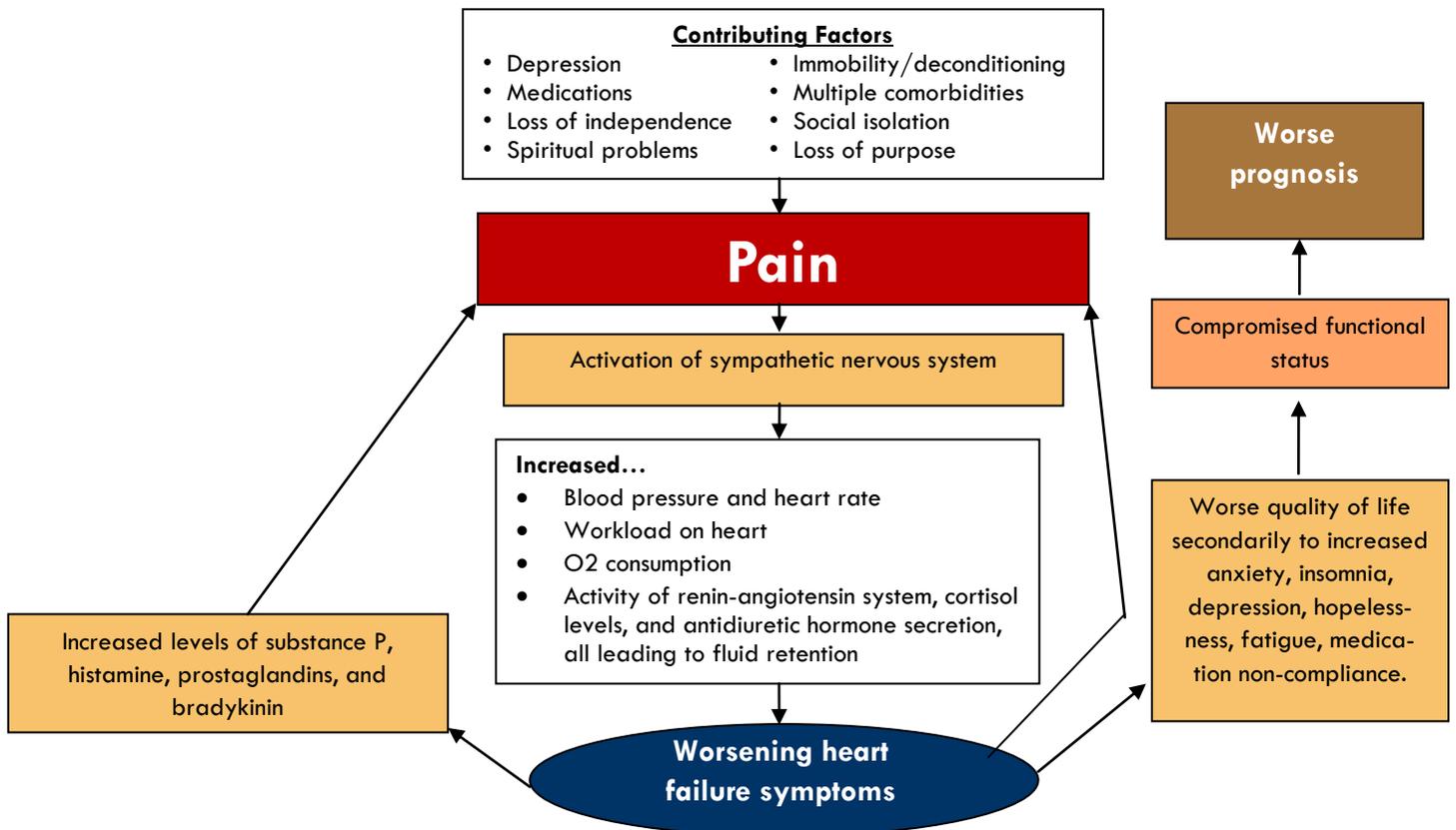
Heart failure is a leading cause of hospitalization of older adults in the US. Clinicians providing care for patients who have heart failure typically focus on the patients' cardiac symptoms, like dyspnea and edema. There are several studies, however, showing that up to 75% of patients with heart failure 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 very important. Pain has the potential to

worsen heart failure symptoms, reduce quality of life, and ultimately, cause poor patient outcomes.

Pathophysiology

Acute pain, as shown in the diagram below, 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 an increase in norepinephrine and epinephrine levels which, in turn, increase cardiac work and oxygen consumption.



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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It also increases activation of the renin-angiotensin-aldosterone system, potentially leading to fluid retention and overload. These 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. Angina is often described as squeezing, pressure, heaviness, tightness or pain in the chest, though sometimes presents as shortness of breath, back pain, or GERD-like symptoms.

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.

Options for Treating Pain in Patients with Heart Failure	
Type of Pain	Treatment Options
Mild pain	• Start with non-opioid analgesics like acetaminophen extra strength (limit acetaminophen to 3g a day), or other adjuvants like anticonvulsants (i.e., gabapentin), SNRI (i.e., duloxetine), TCAs (i.e., nortriptyline). Or non-pharmacological therapies like mindfulness, CBT, massage, etc.
Moderate pain	• Start with weak opioids such as tramadol or oxycodone/acetaminophen.
Severe pain	• Strong and long-acting opioids (Note: methadone can prolong the QT interval).
Uncontrolled pain even with opioids	• Nerve blocks, epidurals, neurolytic block therapy, spinal stimulators, and patient-controlled anesthesia pumps.
Angina	• Standard therapy: beta blockers, nitrates, calcium channel blockers (Note: dihydropyridine calcium channel blockers can increase edema). • Persistent angina: ranolazine, trimetazidine, perhexiline, nicorandil, allopurinol, bosentan, ivabradine, fasudil, testosterone, spinal cord stimulation, enhanced external counterpulsation therapy (EECP), transmyocardial laser revascularization therapy (TMLR), thoracic epidural nerve blockade, Splanchnic nerve block, coronary sinus reducing device, apheresis.
Neuropathic pain	Anticonvulsants, SNRIs, topical agents (i.e., lidocaine), tricyclic antidepressants (can cause arrhythmias and not generally recommended for older adults because of their anticholinergic effects).

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