Clinical Resource Guide: Hiccup Management

OVERVIEW OF HICCUPS IN THEH HOSPICE SETTING

Hiccups are an involuntary reflex involving the respiratory muscles of the chest and diaphragm, mediated by the phrenic and vagus nerves and a central (brainstem) reflex center. While most episodes of hiccups may last for a few minutes or less, in severe cases, they can last days to weeks. An episode of prolonged hiccups can be very distressful to patients and their loved ones, and result in diminished quality of life. This guide was developed to serve as a reference when managing hiccups in the hospice patient.

Pharmacist Corner Objectives

1.) Identify common causes contributing to hiccups in the hospice setting
2.) Recommend nonpharmacologic interventions to help a patient address to episodic or persistent hiccups
3.) Design a pharmacologic treatment plan for the management of persistent hiccups not resolved with nonpharmacologic treatment interventions alone.

COMMON CAUSES OF HICCUPS

Opioids are frequently utilized in palliative care to manage severe pain. The proposed mechanism of opioids resulting in hiccups involves their effect on the central nervous system. Opioids, especially at higher doses, can suppress the central nervous system, leading to alterations in the brainstem function. This alteration may affect the reflex arc controlling the diaphragm, which is necessary for a hiccup. Furthermore, opioids can indirectly cause gastric distension due to their constipating effects, potentially irritating the phrenic nerve and triggering hiccups.

Corticosteroids, often used for managing symptoms like pain, inflammation, and dyspnea in terminally ill patients, might contribute to hiccups via several mechanisms. Corticosteroids can induce electrolyte imbalances, particularly hypokalemia, which has been associated with hiccups. Additionally, corticosteroids can affect the central nervous system, potentially altering neurotransmitter levels and sensitivity, leading to a dysregulation of the hiccup reflex arc. Both opioids and corticosteroids can also cause irritation or inflammation in the upper gastrointestinal tract, which might stimulate the phrenic nerve, triggering hiccups. The exact mechanism by which corticosteroids induce hiccups isn't entirely understood, but their various effects on the nervous system, electrolyte balance, and gastrointestinal function may collectively contribute to this phenomenon in hospice patients.

Understanding these potential associations is critical in the hospice setting when managing hiccups. Careful consideration of the medications being administered and their potential side effects, including hiccups, is essential. If hiccups are suspected to be related to medication use,

healthcare providers should consider possible alternative options or dose adjustments under the guidance of a palliative care team.

POTENTIAL CONTRIBUTORS TO HICCUPS				
Condition	**Overview**			
Medication	▪ Corticosteroids	▪ Opioids	▪ Chemotherapy	
GI Disturbance	▪ Gastric Distension	▪ Esophageal Distension	▪ Liver Disease	▪ Diaphragm Irritation
Other	▪ Post-surgical	▪ Myocardial Infarction	▪ Uremia	▪ CNS Lesions

NONPHARMACOLOGIC MANAGEMENT OF HICCUPS

Nonpharmacologic interventions have demonstrated effectiveness in managing hiccups. Without medication, the following techniques have proven valuable in reducing the frequency and duration of hiccups episodes. These approaches aim to relax the diaphragm or stimulate the vagus nerve to halt the hiccup cycle, ultimately contributing to improvement of overall quality of life.

NONPHARMACOLOGIC TREATMENT STRATEGIES FOR HICCUPS	
Intervention	**Brief Description**
Diaphragmatic Breathing	Instruct patients to take slow, deep breaths, focusing on relaxing the diaphragm to interrupt the hiccup cycle
Cold Stimulation	Sipping ice-cold water or applying an ice pack the to the back of the neck, stimulating the vagus nerve
Valsalva Maneuver	Instruct patients to hold their breath and bear down, affecting the phrenic nerve to halt the hiccup reflex

PHARMACOLOGIC MANAGEMENT OF HICCUPS

If pharmacologic intervention is thought to be necessary to manage hiccups, one of the following medications with activity on the central nervous system is commonly prescribed:

MEDICATIONS FOR HICCUP MANAGEMENT			
Medication Name	**Starting Dose**	**Monitoring Parameters**	**Additional Information**
Chlorpromazine	25mg PO/IM 3-4 times/day	BP, EKG, sedation	▪ Avoid in patients w/ CNS depression ▪ Possible side effects: sedation, HoTN
Metoclopramide	10mg PO/IV 3-4 times/day	BP, fluid retention	▪ Avoid use in patients w/Parkinson disease
Baclofen	5mg po TID PRN	Sedation, muscle weakness	▪ Renally dose adjust if necessary ▪ SEs include: dizziness, sedation, muscle weakness
Gabapentin	300-400mg TID	Dizziness, drowsiness	▪ Consider slow titration to goal dose
Haloperidol	0.5-2mg po 1-3x/day	Monitor for tolerance, sedation	▪ Caution in patients with QT prolongation ▪ SEs include: sedation, EPS, weakness

SUMMARY

This guide emphasizes a multi-faceted approach to manage hiccups in the hospice setting, taking into account nonpharmacologic interventions, understanding the underlying cause, and utilizing appropriate pharmacological management strategies when nonpharmacologic methods are insufficient.

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