

## Hiccups

### Clinical Highlights: Hiccups

**Definition:** Hiccups or singultus are sudden involuntary contractions of the diaphragm, terminated by closure of the glottis. Although typically common, transient, and benign, when hiccups fail to resolve spontaneously, patients seek treatment for fatigue and incapacitation. Management consists of the identification and treatment of a serious underlying cause of hiccups.

**Risk factors:** A lowered  $p\text{CO}_2$ , alcohol ingestion, smoking, and changes in temperature—particularly of the gastrointestinal tract—commonly cause hiccups. Gastric distention is the most common cause in patients with advanced cancer, which is why hiccups are quite common in dying patients. This symptom commonly is related to upper gastrointestinal disease as well as other conditions that can affect the vagus or phrenic nerve. Central nervous system disorders, renal disease, and hypocalcemia also can result in hiccups. Infections, including herpes zoster and tuberculosis, have been implicated as a cause of hiccups. Some drugs have been linked to hiccups, including barbituates, dexamethasone, and diazepam.

Adverse effects include fatigue, decreased nutritional intake, dehydration, wound dehiscence, and reflux esophagitis. However, the effect on quality of life is the primary reason patients seek treatment.

Nondrug treatment includes advising patients to gargle with ice water or hold their breath, which can produce mild respiratory acidosis, thereby suppressing diaphragmatic action. Pharyngeal stimulation with a cotton swab or vagal stimulation with the Valsalva maneuver or carotid massage also can be effective treatments.

Drug treatment can include chlorpromazine (25–50 mg via IV, orally, or rectally three to four times a day), metoclopramide (10–20 mg via IV, IM, or orally four times a day), carbamazepine (200 mg three times a day), cispripide (10–20 mg four times a day), amitriptyline (10 mg three times a day), and baclofen (10–20 mg three times a day). Metoclopramide is very effective in patients with gastric distention but is contraindicated in those with bowel obstruction.

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### Case Study

L.D. is a 50-year-old man with metastatic colorectal cancer receiving a chemotherapeutic protocol of 5-fluorouracil, leucovorin, and irinotecan. He is on his third cycle of four planned cycles; each cycle consists of four weekly treatments. L.D. complains of hiccups that have been unrelenting over the past four days. He also reports vague abdominal distress, exhaustion, and the inability to eat, which has resulted in the loss of four pounds over a week. During his second cycle of chemotherapy, he suffered with hiccups for two weeks continuously and none of the usual remedies helped to relieve the symptom.

### Clinical Problem Solving

Responding to this clinical challenge is Christy H. Dolbey, RN, MSN, FNP, AOCN®. Dolbey is a nurse practitioner in the Hematol-

ogy/Oncology Clinic at Fletcher Allen Health Care in Burlington, VT.

#### What are the etiologies of hiccups in a person with advanced cancer?

Hiccups are defined as repetitive, sharp inspiratory sounds that occur because of spasms of the glottis and diaphragm. Anatomically, hiccups originate in the phrenic or vagus nerve pathways. The more common case of hiccups, lasting from a few minutes to hours, may be related to decreased  $p\text{CO}_2$  or gastric distention. Persistent hiccups, lasting more than 48 hours, can result from decreased  $p\text{CO}_2$ , gastric distention, ingestion of alcohol, smoking, sudden excitement, or a change in gastrointestinal temperature (e.g., caused by drinking a hot or cold beverage). Intractable hiccups, lasting more than a month, have multiple causes: structural (e.g., disease affecting the phrenic and vagus nerves), metabolic (e.g.,

drug-related), infectious, or psychogenic. In a person with advanced cancer, structural and drug-related etiologies are more likely.

#### What nonpharmacologic therapies should be attempted initially?

Respiratory strategies, such as holding one's breath, are well known in the lay community, and most patients will have attempted them before seeking nursing intervention. Oropharyngeal stimulation, such as ice application in the mouth, pressure on the nose,

*The solutions offered to the clinical problems posed in this column are the opinions of the authors and do not represent the opinions or recommendations of the Oncology Nursing Society, the Oncology Nursing Forum, or the editorial staff.*

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