completed ASCO's disclosure form, which requires disclosure of financial and other interests, including relationships with commercial entities that are reasonably likely to experience direct regulatory or commercial impact as a result of promulgation of the guideline. Categories for disclosure include employment; leadership; stock or other ownership; honoraria, consulting or advisory role; speaker's bureau; research funding; patents, royalties, other intellectual property; expert testimony; travel, accommodations, expenses; and other relationships. In accordance with the Policy, the majority of the members of the Expert Panel did not disclose any relationships constituting a conflict under the Policy.

RESULTS

The review conducted for the first three clinical questions (assessment of dyspnea, management of reversible causes of dyspnea, and referral to palliative care and/or specialty breathlessness services) included six publications: four systematic reviews[15-18] and two guidelines.[1,19]

The AHRQ systematic review on the treatment of dyspnea (questions 4-5) included 48 RCTs and two retrospective cohort studies.[11,12] Twenty-nine RCTs (2,423 patients) addressed the comparative benefits of nonpharmacologic interventions[20-48]; 17 RCTs and 1 retrospective cohort study (1,224 patients) addressed the comparative benefits of pharmacologic interventions[49-66]; and two RCTs (287 patients) addressed the comparative benefits of nonpharmacologic, pharmacologic, and multimodal interventions.[67,68] Strength of evidence ranged from insufficient to moderate, and was low for many of the interventions.

RECOMMENDATIONS

Clinical Question 1: How Should Dyspnea Be Assessed in Patients With Advanced Cancer?

Recommendation 1.1. Clinicians should perform systematic assessment of dyspnea at every inpatient and outpatient encounter in patients with advanced cancer using validated patient-reported outcome measures (good practice statement).

Recommendation 1.2. For patients who are unable to self-report, clinicians should use a validated observation measure. (good practice statement).

Recommendation 1.3. Whenever possible, patients with dyspnea should undergo a comprehensive evaluation for the severity, chronicity, potential causes, triggers, and associated symptoms, as well as emotional and functional impact (good practice statement).

Literature review and analysis. Systematic reviews have reported on several validated tools for the assessment of dyspnea in patients with cancer and other conditions.[15,17,18] Guidelines by the American Thoracic Society[1] and the European Society for Medical Oncology[19] discuss the importance of assessing and characterizing dyspnea.

Clinical interpretation. Because dyspnea is a subjective experience, patient-reported outcomes represent the gold standard for its assessment.[1] Dyspnea should be distinguished from hypoxemia. Patients with hypoxemia may not always be dyspneic and patients with dyspnea are often not hypoxemic.[69] Likewise, people with tachypnea may not feel breathless, and people with breathlessness may not have tachypnea.[69]

Commonly used patient-reported outcome measures for screening of dyspnea include the 0-10 Numeric Rating Scale, 0-10 modified Borg Scale, and the vertical 0-100 mm Visual Analog Scale, in which a higher number indicates worse dyspnea (Data Supplement).[70-72] The anchors for these scales can be selected to capture dyspnea intensity, unpleasantness, or distress.[73] These unidimensional outcomes have been validated in both clinical and research settings, are quick to administer (seconds to minutes), and relatively easy to understand and interpret for patients and clinicians. Patients may already be familiar with the Edmonton Symptom Assessment System, a multisymptom battery that uses the Numeric Rating Scale to measure 10 common symptoms including dyspnea (Data Supplement).[74,75]

In addition to the above scales, the modified Medical Research Council Breathlessness Scale may be added to assess dyspnea severity in relation to daily activity.[76] A personalized dyspnea goal "At what level would you feel comfortable?" may also be assessed to set individualized targets for dyspnea interventions.[77,78]

Patients who are delirious, comatose, near death, or intubated may not be able to report symptoms.[79] The Respiratory Distress Observation Scale has been validated across diagnoses and settings of care (Data Supplement).[80-84] It consists of eight variables, including heart rate, respiratory rate, restlessness or nonpurposeful movements, paradoxical breathing, accessory muscle use, grunting at end-expiration, nasal flaring, and look of fear. Other proxy rating measures such as the Integrated Palliative Care Outcome Scale may also be considered.[85]

Patients with episodic dyspnea should be asked about common triggers, such as activities (eg, walking, climbing stairs, running, bathing, and dressing), positions, weather, pollens, and emotional distress.[86] Symptoms associated with dyspnea may include, but are not limited to, depression, anxiety, fatigue, wheezing, and cough. Assessment of functional impact may include questions related to activities of daily living and performance status. Structured exercise tests including 6-minute walk test and shuttle walk test may provide further documentation of functional impairment because of dyspnea.[87,88]

Objective tests such as vital signs, pulmonary function tests, and imaging are complementary but do not replace