

Review Article

Palliative care in Patients with Respiratory Disease and Critical Illness

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*“The good physician treats the disease;
The great physician treats the patient who has the disease.”*

Osler

Palliative care (from palliare, a Latin word meaning “to cloak”) is an area of healthcare that focuses on relieving and preventing the suffering of patients.

W.H.O. Definition of Palliative Care¹

Palliative care is an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems - physical, psychosocial and spiritual.

Palliative care:

- Provides relief from pain and other distressing symptoms.
- Affirms life and regards dying as a normal process.
- Intends neither to hasten nor postpone death.
- Integrates the psychological and spiritual aspects of patient care.
- Offers a support system to help patients live

as actively as possible until death.

- Offers a support system to help the family cope during the patient’s illness and in their own bereavement.
- Uses a team approach to address the needs of patients and their families, including bereavement counselling, if indicated.
- Will enhance quality of life, and may also positively influence the course of illness.
- Is applicable early in the course of illness, in conjunction with other therapies that are intended to prolong life, such as chemotherapy or radiation therapy, and includes those investigations needed to understand and manage distressing clinical complications better.

Palliative care is a multidisciplinary approach to patient care utilizing a team of physicians, nurses, pharmacists, chaplains, social workers, psychologists and other health professionals to relieve suffering in all aspects of a patient’s life. It is aimed at addressing the physical, emotional, spiritual and social needs of a patient with advanced illness.

Palliative care and Hospice care²

Palliative care originated as end-of-life care in the 1960s, as part of the modern hospice care. Hospices were originally places of rest for travellers in the 4th century in Ireland and United Kingdom. Later, various religious organisations took charge using them for caring terminally ill patients. Dame Cicely Saunders is considered as the father of modern hospice care. But palliative care is different from hospice care since palliative medicine is also appropriate for patients in all disease stages, including chronic curable illnesses as well as terminally ill patients.

According to the more recent and broader definition, the goal of palliative care is to maintain and improve the quality of life of all patients and their families during any stage of illness, whether acute, chronic, or terminal.

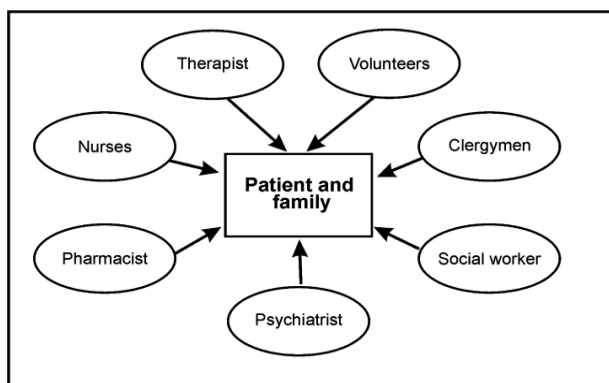


Fig 1: Palliative care takes care of the patient as well as the patient's family and is a team work

- **Curative care** : Focuses on quality of life and aims at prolonging life.
- **Palliative care** : Focuses on quality of life and death, and views death as a natural part of life.

According to older concepts, palliative care follows curative care and it ends with the death of the patient. But the recent concept is that palliative care and curative care go together; palliative care becomes more important as one approaches the end of life and does not end with the death of the patient. Palliative care also covers the bereavement period. Ideally, all patients receiving curative or restorative health care should receive palliative care concurrently. Palliative care should be individualized.

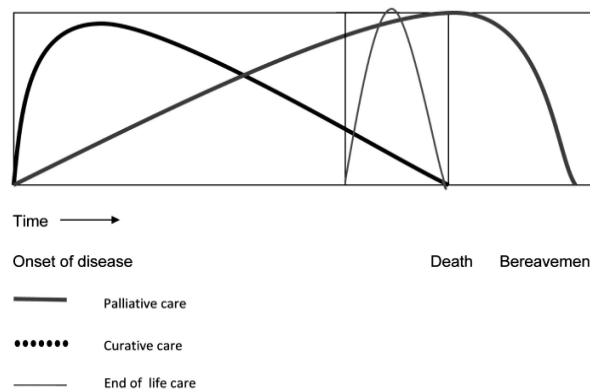


Figure 2: Curative and palliative care – new concept³

Goals of palliative care:

1. Symptom management
2. Psychosocial care for person
3. Psychosocial care for family
4. Spiritual care
5. Disease management
6. Preparing for and managing death
7. Bereavement

Palliative care is aimed at the overall well being of the patient and family.

Is palliative care necessary in respiratory diseases other than lung cancer?

The role of palliative care is well established in lung cancer. However, the concept is not so clear in respiratory diseases other than malignancy. But many studies have proved that quality of life is poorer and sufferings more in many respiratory diseases like COPD, Idiopathic Pulmonary Fibrosis and MDR TB compared to lung cancer. Patients with COPD were much more likely to be admitted to an ICU, and have greater lengths of stay in the ICU during their terminal hospitalisation, than patients with lung cancer⁴. So an ad hoc End-of-Life Task Force of the American Thoracic Society has published a statement and practical recommendations for providing palliative care to adult and pediatric patients with advanced respiratory diseases and critical illnesses. According to

these recommendations, any chronic respiratory diseases may be considered for palliative care if they meet these criteria. Irrespective of the etiology and type of underlying disease, patients may be considered to be in the terminal stage of pulmonary disease with life expectancy of 6 months or less if they meet the following criteria.

Table 1. Criteria for palliative or hospice care of patients with end-stage pulmonary disease⁵

<ol style="list-style-type: none"> 1. Severe chronic lung disease as documented by both (a) and (b): <ol style="list-style-type: none"> (a) Disabling dyspnea at rest, poorly or unresponsive to bronchodilators (e.g., confined to bed or chair), fatigue, and cough (b) Progression of end-stage pulmonary disease, as evidenced by increasing visits to the emergency department or hospitalizations for pulmonary infections and/or respiratory failure 2. Hypoxemia at rest on ambient air (PaO_2 less than or equal to 55 mm Hg; or oxygen saturation less than or equal to 88%). OR Hypercapnia ($\text{PaCO}_2 > 50$ mm Hg) 3. Cor pulmonale 4. Unintentional progressive weight loss of greater than 10% of body weight over the preceding 6 months. 5. Resting tachycardia > 100 beats/minute. 6. Spirometry showing FEV_1, after bronchodilator, less than 30% of predicted 7. Documentation of serial decrease of FEV_1 (equal to or more than) 40 ml/yr is objective evidence for disease progression
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(Criteria 1 and 2 should be present. Criteria 3, 4, 5, 6 and 7 are supporting documentation)

The diseases which may progress to end stage lung warranting palliative care includes:

1. COPD
2. Idiopathic Pulmonary Fibrosis
3. MDR TB
4. Extensive bronchiectasis
5. Cystic fibrosis
6. Post TB fibrosis
7. Pulmonary hypertension
8. ARDS
9. Lung cancer

Table 2: Characteristics of COPD patients to identify those who are likely to die within 6 months:

<ul style="list-style-type: none"> • $\text{FEV}_1 < 30\%$ predicted • Oxygen dependence • One or more hospital admissions in the previous year for an acute exacerbation • Right heart failure • Weight loss or cachexia • Decreased functional status • Increasing dependence on others • Age > 70 yrs
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The presence of two or more of these prognostic indicators should be a reason to initiate a discussion on preferences about end-of-life care.

Symptom management

Dying patients fear symptoms like dyspnoea, cough and pain. Therefore, symptom control is one cornerstone of palliative care.

Management of dyspnoea and respiratory distress

Dyspnoea is a predominant symptom of patients with advanced respiratory disease of any cause. Respiratory distress is the observable corollary to dyspnea. Nearly all patients with COPD have dyspnoea during the last days of their lives. Dyspnoea perception varies highly with individuals, irrespective of the grades of COPD. Even with various types of inhalers and parenteral bronchodilators, there are no completely satisfactory treatments for the various forms of dyspnoea. Such patients may

be provided relief with opioids and palliative counselling. Treatment should also consider the psychological and physical components of dyspnoea, and rely on visual or analogue dyspnea scales to assess the severity of symptoms and effects of treatment. Patients should also be enrolled to pulmonary rehabilitation programs. The physiologic component of dyspnoea may be relieved by oxygen supplementation, non-invasive positive-pressure ventilation, or blowing cool air on the face using a fan⁶. Opioids and anxiolytics are the primary pharmacologic treatments of dyspnoea for adults and children. Opioids can be given orally, subcutaneously, or intravenously. Nebulised Opioids has been found to be not effective⁷. Alternative or complementary treatment methods like relaxation therapy, acupuncture, yoga etc also may be helpful in individual cases. No treatment options should be denied, especially so if the patient or relatives want to try them.

Table 3. ATS guidelines for treatment of dyspnea

<p>Mild dyspnea</p> <ul style="list-style-type: none"> Treat underlying disease Treat psychosocial factors <p>Moderate dyspnea</p> <ul style="list-style-type: none"> Treat underlying disease Pulmonary rehabilitation <p>Severe dyspnea</p> <ul style="list-style-type: none"> Treat underlying disease Treat psychosocial factors Pulmonary rehabilitation Consider anxiolytics Opioids Non-invasive ventilation
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General principles of managing breathlessness

- Reassurance to patient and family
- Advice on positioning patient in bed
- Facial cooling by use of fan, open window
- Distraction and relaxation techniques

Encourage adaptations in activities of daily living and lifestyle

Treatment of underlying cause of dyspnea

Pleural effusion- Pleural aspiration, with or without pleurodesis, Pleuroperitoneal shunt

Pericardial effusion - Aspiration, with or without fenestration

Bronchospasm – bronchodilators, steroids

Hypoxia - Oxygen

Lymphangitis? High dose corticosteroids

Endobronchial disease - High dose corticosteroids, Laser therapy, Cryotherapy, Stenting

Correction of anemia

Choice of anxiolytic drugs for treating breathlessness

Lorazepam (0.5-2 mg) can be taken sublingually and is rapidly absorbed with a rapid onset of action and a short half life. It is particularly useful for self administration during an episode of acute breathlessness.

Diazepam (starting dose usually 5 mg daily) is preferred if a regular anxiolytic is required. Some patients require much higher doses.

Midazolam - If parenteral administration is required, midazolam can be given by subcutaneous injection (initially 2.5-5 mg) or by infusion (starting dose 10 mg/24 hours, increasing as necessary), often in combination with low dose diamorphine.

Role of Opioids in palliation of dyspnoea⁸

Opioids can be given orally, subcutaneously, or intravenously. Most of the physicians are apprehensive in giving opioids in COPD patients fearing that they may hasten death through respiratory depression. In fact, no studies have proved that the appropriate use of these drugs hasten death. Evidence indicates that they do not cause premature death in end-of-life patients when titrated to relieve pain or dyspnoea. The dose of opioids can be titrated in the same way as when used for pain control,

but lower doses and smaller increments should be used.

Principle of double effect⁹

This principle states that a physician is justified in using drugs like opioids to control pain or dyspnoea in terminally ill patients. His aim to decrease the suffering of the patient itself is adequate justification for its use. Any adverse events like hastening of death (very unlikely) are morally acceptable. According to this principle, health care providers are entitled to use opioids and titrate the dose and frequency based on frequent symptom assessment using a dyspnoea scale or physiologic manifestations of dyspnoea. Dosages of opioids that exceed what is necessary to relieve symptoms are illegal. This medical ethics doctrine is credited to Thomas Aquinas.

Narcotics, especially opioids like morphine is now approved for symptom relief in the GOLD guidelines Update 2013¹⁰.

Pain Management

Incidence of pain in terminal lung cancer is more than 70 %, with half of them having moderate or severe pain. Pain often results as much from diagnostic and therapeutic procedures as from the disease itself. So use of local anaesthetics, information, and distraction techniques, as well as anticipatory dosing of analgesics and anxiolytics before procedures is recommended. According to WHO, everyone has a right to be treated, and die, with dignity and the relief of pain - physical, emotional, spiritual and social.

Pain in the ICU is often related to iatrogenic causes -procedures, and interventions. These include suctioning, turning, catheter insertion, wound care, and the presence of endotracheal tubes. So minimizing or eliminating iatrogenic sources of pain should be part of the pain relief plan. Since most of the ICU patients are unable to communicate their level of pain, a Behavioural Pain Scale has been developed for use in the ICU in mechanically ventilated patients.

WHO Analgesic Ladder¹²

The WHO Pain Ladder was developed in 1986 to guide the management of cancer pain. This stepwise management is now accepted for

palliative care of any type of pain.

Step 1: Non-narcotics

Round the clock NSAIDS like Acetaminophen 650mg q4h or Aspirin 650mg q4h or Ibuprofen 400mg q4h or other NSAIDs with or without adjuvants.

Step 2: weak Opioids

Such as Codeine 30-60 mg q4h, Oxycodone 5mg q4h. Dihydrocodeine and Tramadol along with Acetaminophen and adjuvants.

Step 3: strong Opioids

Consider stronger opioids if pain is not controlled by these combinations at a total daily dose if 400mg/day of codeine or 80mg/day of Oxycodone

This includes round the clock oral opioid-

- Morphine 5-10mg q4h titrate to pain
 - Fentanyl 25ug/ hour plus Morphine Sulphate 5 mg q 2h
- + Adjuvants

Adjuvant therapy includes medications that can help to enhance the effects of non opioids and opioid analgesics

- 1) Tricyclic antidepressants - Nortriptyline, Desipramine, and Amitriptyline
These are effective in treating diabetic neuropathy and neuropathic pain from other sources.
- 2) Anticonvulsant medications – Gabapentin, Pregabalin, and Carbamazepine can relieve the shooting, electrical pain of peripheral nerve dysfunction as in brachialgia of Pancoast syndrome.
- 3) Corticosteroids, local anesthetics, neuroleptics, a-adrenergic agonists (e.g., Clonidine, and Baclofen)

Step 3	Strong opioids
Step 2	Weak opioids
Step 1	Non opioids – NSAIDS

Fig 3: WHO Analgesic Ladder

Dosage of Morphine

Morphine may be given intravenously or orally. Starting from a dose of 2 to 5 mg 4-6 hourly, the dose may be increased till symptomatic relief is obtained. The correct dose is the dose that relieves the symptom; there are no maximum doses of opioids. Palliative care specialist should be consulted. Constipation is a common side effect, which may be relieved by use of a bowel stimulant and stool softener. Nausea may be tackled with by antiemetics (e.g., Prochlorperazine or Metoclopramide).

or abdominal pain, rib fracture, syncope and insomnia, and these problems may need to be addressed. When possible, the main aim should be to reverse or ameliorate the cause of cough with various agents including bronchodilators, antiinflammatory agents, antihistamines, leukotriene antagonists, corticosteroids etc. Cough suppressants are usually used to manage dry, but not productive cough, except in irritant nocturnal cough and cough in dying patients. The most effective antitussive agents are the opioids.

Table 4 Behavioral Pain Scale Analysis ¹¹

Item	Description	Score
Facial expression	Relaxed	1
	Partially tense	2
	Totally tense	3
	Grimace	4
Movements of upper limbs	Relaxed	1
	Partially flexed	2
	Totally flexed	3
	Totally contracted	4
Mechanical ventilation	Tolerating movements	1
	Coughing, but tolerating	2
	Fighting ventilator	3
	Impossible to control	4

Palliative sedation¹³

Occasionally, pain and suffering at the end of life may be refractory to traditional palliative care treatment. In such circumstances, high dose of opioids may be given and the patient is sedated. This is also called "terminal sedation" or "total sedation". Benzodiazepines or barbiturates are commonly used.

Palliation of cough¹⁴

Cough is often a distressing symptom in serious respiratory illnesses. Persistent cough can also precipitate vomiting, exhaustion, chest

Nebulised local anaesthetics can relieve intractable and unproductive cough. Both lignocaine (up to 5 ml of 4% solution every 6 hours) and bupivacaine (up to 5 ml of 0.25% solution every 8 hours) have been used. Patients should be advised not to eat or drink for an hour after nebulisation due to fear of aspiration.

Palliation of Haemoptysis

Massive haemoptysis is often an alarming symptom raising panic in patients as well as relatives. It is important to establish the source of bleeding and treat accordingly. Man-

Table 5: Pharmacological agents that inhibit cough

<p>Opioids and opioid derivatives</p> <p>Codeine phosphate Dextromethorphan Methadone Morphine</p>	<p>Local anaesthetics</p> <p>Lozenges –Benzocaine / Lignocaine Nebulised - Lignocaine/ Bupivacaine</p>
<p>Corticosteroids</p> <p>Often used to relieve cough related to endobronchial tumour, lymphangitis, or radiation pneumonitis</p>	<p>Bronchodilators</p> <p>Salbutamol, Ipratropium Can relieve cough associated with COPD</p>

agement depends on the cause and prognosis. Radiotherapy (endobronchial or external beam) and laser therapy are particularly effective in controlling bleeding from endobronchial tumour. However, massive haemoptysis in patients with lung malignancy receiving palliative care does not warrant any invasive management. Palliative management should be aimed at reducing awareness and fear. A combination of a parenterally administered strong opioid and a benzodiazepine is usually required. Patient should be nursed lying on the side of the tumour. Masking with coloured towels may help the patient not to get anxious.

Management of psychological and spiritual distress and suffering

Psychological distress is common in patients with advanced respiratory diseases. They are at higher risk than healthy persons for depression, anxiety, and panic attacks. Such patients with chronic, progressive, life-threatening illnesses may have questions of existence, meaning, purpose, regret, and destiny. Treatment includes counseling with or without pharmacotherapy. Spiritual healing with the help of clergymen or priests also may be sought, according to the wishes of the patient and relatives. The physician’s efforts cannot replace the contributions of others (e.g., nurses or clergy) but may act complementary in such situations.

Although anxiety and depression are common in COPD, they are not well recognized

or treated. Recent studies have shown that only less than a third of patients with COPD and clinically significant depression or anxiety were being treated. Antidepressants can significantly improve mood among patients with COPD and depression. Furthermore, in patients with COPD and depression, antidepressants can also decrease rating of dyspnoea and other physical symptoms.

Palliative and End-of-Life Care in Lung Cancer

Lung cancer is a disease with a high morbidity and mortality rates, often because it is detected too late. As a result, it is often associated with a significant amount of suffering and a general decrease in the quality of life. For patients with stage IV lung cancer, it is suggested that palliative care combined with standard oncology care be introduced early in the treatment course (Grade 2B)¹⁵. It is recommended that all physicians caring for patients with lung cancer should begin conversations about the patient’s prognosis and goals of care at the time of the diagnosis, and continue these throughout the course of the illness (Grade 1B).

Palliative treatment in ICU

Most of the ICU patients suffer from various distressing symptoms. They also suffer from depression due to isolation, fear and anxiety. This is even more so if the patient is intubated or on mechanical ventilation. Such pa-

tients may not be able to communicate about their sufferings with the health providers. So special care may be taken to identify and alleviate such sufferings.

For a dying patient, access to family members might be a boon. Since admission of close relatives into an ICU has definite risk for the infection control protocols, such dying patients should be managed in an intermediary care, where the relatives can be allowed. Whenever possible, such patients should be shifted to a hospice care.

Music-thanatology¹⁶

Music thanatology is a mode of palliative care utilizing music, medicine, and spirituality. The music thanatologist plays music by the bedside of a critically ill patient to relieve fear, discomfort, and suffering. It has been found that calm music eases respiration, reduces anxiety and fear, provides deeper rest, and a sense of peace. Music-thanatology has been practiced in many hospitals and hospices, and is included in physicians' standing orders in many institutes. Harp and other musical instruments are used for producing music.

End of life issues

"Death is often resented and feared because it brings an end to human joy, but it also brings an end to fear and pain and suffering."

Iona Heath, 'Matters of life and death'

Advance Directives¹⁷

Patients may be encouraged to make advance decisions regarding use of life-supporting interventions (e.g., intubation, cardiopulmonary resuscitation [CPR] Do Not Resuscitate (DNR) etc). Copies of advance directives should

Table 6: Simple measures to maximize patient comfort in ICU

- | |
|---|
| <ol style="list-style-type: none">1. Eye covers2. Decreasing the volume of the alarms3. Easy access to family4. Soothing music5. Low lights at night6. Warm clothing |
|---|

be given to the patient's family, loved ones, and physician. Decision about these end-of-life cares should be done when patients are in fully conscious state and when they do not have depression. If the patient is found to have depression, it should be adequately treated before making such decisions. Some patients may resent artificial feeding methods like Ryle's tube feeding, intravenous fluids, etc and bladder catheterisation. In that case, health care providers should respect the decision.

Withdrawal of mechanical ventilation

This is often the most difficult decision to be made in an ICU. In the absence of an advance directive, this is usually a joint surrogate-medical team decision. Most important is proper communication of the patient's condition to the relatives. This has to be done regularly and frequently. If patients and families are regularly updated of the situation, they will be better prepared when the assessment is made that the interventions are no longer helping. There should be a consensus on the issue by a medical team rather than a single physician.

Process of Withdrawing Mechanical Ventilation^{18, 19}

There is no single correct way for withdrawal of ventilator support. Two methods are being tried - terminal extubation or abrupt removal of the endotracheal tube and terminal weaning by gradual reduction of inspired oxygen concentration and/ or mandatory ventilator rate. The decision of choice may be done after consulting patient's relatives. The patient's responsiveness should be assessed with verbal and tactile stimuli. Neuromuscular blockers, if being used, should be discontinued as soon as the decision is made and their effects allowed to wear off or be reversed. Such extubated patients may be transferred out of the ICU and managed in an alternative setting where palliative care needs can be satisfactorily met.

Noninvasive ventilation may be of use in patients who has specifically refused intubation and as a palliative technique to minimize dyspnea in patients who have been withdrawn of mechanical ventilation.

"Death rattle" and "Agonal breathing"²⁰

The death rattle is the noisy breathing

seen in imminently dying patients. Agonal breathing is the slow, irregular, and noisy breathing which mimics grunting or gasping seen just before death. Even though these are parts of natural death, the relatives may think that the patient is suffering and this can cause discomfort in them. Death rattle may be due to bronchial secretions, which can be cleared by suction and limiting use of intravenous fluids and treatment with anticholinergic agents. Family should be explained and reassured.

Bereavement Care²¹

Even though curative health care to the patient stops with the patient's death, the suffering of the family and other loved does not end. Palliative care is to be extended to this bereavement period. This can be accomplished by a group consisting of social workers, nurses, and bereavement counsellors. The role of physicians in bereavement care should not be limited to care of the body after death, assistance in organ donation and deciding about autopsy. Bereavement counseling is especially needed when the dead patient is a child.

Patient-physician communication about end-of-life care²²

This is an important barrier in palliative care. Most physicians are not comfortable in discussions about end-of-life care with their patients. The uncertain short-term prognosis of many patients who have advanced lung diseases other than cancer and the lack of knowledge and skills necessary to provide adequate palliative care along with lack of time may be the reasons. Studies show that only a small proportion of patients with moderate to- severe COPD have discussed treatment preferences and end-of-life care issues with their physicians, and the vast majority of these patients believe their physicians do not understand their preferences for end-of-life care.

Another problem is the lack of availability of adequate palliative centers. To overcome this barrier, we have to start more palliative clinics and measures to increase awareness about palliation and bereavement care among the public as well as health providers. Also, there should be integration of curative and palliative cares. Physicians should identify and refer more cases to palliative centers.

Giving Bad News:

One of the most difficult situation encountered by most of the physicians would be to give patients bad news, including initial diagnosis and discussing disease progression, treatment failures, and end-of-life issues.

A structured, six-step approach to delivering bad news is represented by the mnemonic **SPIKES** make these difficult conversations much easier²³.

S is for **setup** and it helps the physician to plan in advance what is to be discussed and the potential effects of the bad news. He may take help of colleagues, such as nurses or social workers.

P is for **perception**, and it is to first ask about patients' perception of the situation and their awareness about the meeting.

I is for **invitation** and this includes giving a "warning shot" to prepare a patient psychologically for bad news. For example, you can begin by saying, "Unfortunately I don't have very good news for you. Are you ready to hear the news?" This warning shot can provide them the needed time.

K is for **knowledge**, and it represents the actual bad news which should be communicated in simple, direct language appropriate to the patient's level of education.

E represents **empathy**. It is common for patients to have an emotional response after hearing bad news. This may manifest in non-verbal ways, and physicians should be prepared to address and support emotions.

S is for **summarize** and strategize. Physicians should conclude the discussion with summarising the information that was discussed and the plans for the future.

Conclusion

Palliative therapy in the modern concept not only includes end-of-life care, but is broader and also includes care focused on improving quality of life and minimizing symptoms before the end-of-life period and is as important as curative treatment and should extend to the period of bereavement. Most of the respiratory symptoms are difficult to palliate. Palliative

treatment needs to be multidisciplinary, individually tailored and patient oriented. There is urgent need for increased awareness about palliation among the patients, relatives and health care providers.

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