HOT SPOT

SUNNYBROOK & WOMEN'S

From the guest editor's desk

By Dr. Toni Barnes, MD, FRCP

This August issue of **Hot Spot** provides us with articles covering a wide range of palliative and supportive care topics. In our feature article, Dr. Kouroukis discusses lymphoma in the elderly. Continuing her series on psychosocial issues, Mary Vachon writes on demoralization in persons with advanced cancer. Dr. Scott Berry provides information on ethical issues in dealing with demands for futile treatment. Dr. Rebecca Wong's research corner covers developments in the palliation of esophageal cancer. Dr. Charles Hayter's historical vignette looks at the history of oxygen. Finally, for our **Hot Spot** insert, Dr. Chung reviews advances for end-of-life respiratory care. We hope this **Hot Spot** issue provides useful and interesting reading!

Lymphoma in the elderly

By C. Tom Kouroukis, MD, FRCPC

The incidence of non-Hodgkin's lymphoma has been steadily increasing over the past few decades at the same time that both the proportion of older persons in the population and life expectancy have been increasing. The increasing incidence of lymphoma has been most marked in older persons.

The International Prognostic Factors Project (IPI) has defined five prognostic factors for patients with aggressive histology lymphoma: age, serum LDH, stage, number of extranodal sites and ECOG performance status. Increased age (over 60 years) was associated with the highest relative risk for a poor treatment outcome. In age-adjusted IPI index in older patients, performance status, serum LDH and stage remain prognostic. The inferior outcome of older patients is not due to IPI-related characteristics at presentation. Other factors that may explain the worse outcome seen in older patients include a more aggressive disease biology, the presence of comorbid diseases, altered chemotherapy drug pharmacokinetics and poor host tissue reserves leading to increased toxicity. In view of such factors, physicians may be reluctant to administer aggressive chemotherapy to older patients. Comorbidity is common in older patients with lymphoma and may influence treatment choices and outcome, but this has not been well-studied in the literature.

The combination of cyclophosphamide, doxorubicin, vincristine and prednisone (CHOP) has evolved to be a standard chemotherapy regimen for aggressive-histology lymphoma. A number of randomized trials testing different chemotherapy treatments specifically in older patients with aggressive-histology lymphoma have been reported. They compared CHOP-like versus less aggressive regimens, anthracycline-containing versus anthracycline-lacking regimens, regimens with different anthracyclines and regimens with different schedules. These studies revealed improvements in survival with anthracycline-containing regimens compared against non-anthracycline regimens, and when CHOP-like regimens were compared with less aggressive regimens. Also, the use of doxorubicin (in CHOP) is superior to the use of mitoxantrone (in CNOP). The use of CHOP, however, is associated with increased toxicity. More recently, the

continued on page 4...

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In this issue: **Lymphoma in the elderly; Demoralization in persons with advanced cancer; Ethical issues in dealing with demands for "futile" treatment; Historical Vignette: Oxygen therapy; Research Corner.**

Insert - Advances for end-of-life respiratory care

Demoralization in persons with advanced cancer

By Mary L.S. Vachon, RN, PhD

In an attempt to better understand the needs of those living with advanced disease, a number of researchers have studied component parts of phenomena that might previously have been subsumed under the concept of depression. These will be the topic of the next few columns.

Kissane, Clarke and Street (*Journal of Palliative Care* 2001:17:1:12-21) have elucidated the concept of demoralization syndrome that they define as "a psychiatric state in which hopelessness, helplessness, meaninglessness, and existential distress are the core phenomenon." The syndrome is found in palliative care settings and "is associated with chronic medical illness, disability, bodily disfigurement, fear of loss of dignity, social isolation, and – where there is a subjective sense of incompetence - feelings of greater dependency on others, or the perception of being a burden." Because of the sense of helplessness and impotence, those suffering from the syndrome may progress to a desire to die, or to commit suicide.

The authors distinguish demoralization syndrome from depression in that the latter is characterized by anhedonia, or a lack of pleasure or interest in life's activities, and the former is characterized by a sense of incompetence through loss of meaning or purpose. They further distinguish the two in that the person with demoralization syndrome can experience pleasure in the moment (consummatory pleasure), but is unable to anticipate pleasure in the future. The depressed person, on the other hand, loses both consummatory and anticipatory pleasure. This distinction is helpful clinically in that an essential characteristic of the demoralization syndrome is hopelessness, rather than happiness.

Mrs. P is a 70-year-old divorced woman with bony metastases from breast cancer. She lives alone and has three married adult sons with whom she has a somewhat tumultuous relationship. Her friendship system is limited. Many of the people in her social support system have been friends she has met through her cancer experience. She has watched several of them die over the past few years. Mrs. P has lived with stable metastatic disease for two years and considers herself fortunate to have not had the progressive disease that many of her friends have experienced. Mrs. P resents the fact that she has financial pressures at this point in her life and questions whether she made a poor decision in divorcing her husband several years ago. She wonders, if she were still married, whether she would have a better social status in the community as well as with her children.

Mrs. P is able to enjoy contact with her sons and their families, but wishes they were more available to her. She queries whether there were mistakes that she made in her sons' upbringing that led to their current ambivalent relationship, but she feels that they should respect the fact that she is their mother and give her more attention. Her family members are quite clear that they are giving her as much contact as they are prepared to give her.

Mrs. P says, "I can't see life getting much better. I am not sure I should just hang around waiting for death and am seriously considering suicide."

Kissane et al. note that the demoralized person may desire death "but not with the acceptance of a life replete with satisfaction and fulfilment, as commonly seen in the elderly, who patiently await their death. Rather, demoralized patients desire death with impatience, as the subtle distress that lies beneath the surface may mean that this life is perceived as meaningless and better ended".

The degree to which dependency intrudes into personal life has been found by other authors to predict the degree of demoralization. Women have been found to have greater demoralization than men. Rates of demoralization in the elderly are estimated to be double the rate of depression. Those who are isolated, lacking social support, and left without a sense of being valued appeared at greater risk of losing meaning and becoming demoralized.

Treatment for demoralization includes:

1. "Provide continuity of care and active symptom management.
2. Explore attitudes towards hope and meaning in life.
3. Balance support for grief with promotion of hope.
4. Foster search for renewed purpose and role in life.
5. Use cognitive therapy to reframe negative beliefs.
6. Involve pastoral counselling for spiritual support.
7. Promote supportive relationships and use of volunteers.
8. Conduct family meetings to enhance family functioning.
9. Review goals of care in multidisciplinary team meetings".

Mary Vachon, RN, PhD, is a psychotherapist in private practice. She can be reached at maryvachon@sympatico.ca.

Table One: Proposed diagnostic criteria for demoralization syndrome

A. Affective symptoms of existential distress, including hopelessness or loss of meaning and purpose in life.

B. Cognitive attitudes of pessimism, helplessness, sense of being trapped, personal failure, or lacking a worthwhile future.

C. Conative absence of drive or motivation to cope differently.

D. Associated features of social alienation or isolation and lack of support.

E. Allowing for fluctuations in emotional intensity, these phenomena persist across more than two weeks.

F. A major depressive or other psychiatric disorder is not present as the primary condition.

Ethical issues in dealing with demands for "futile" treatment

By Scott Berry, MD, FRCPC

You have just admitted a 75-year-old man with end stage prostate cancer to the hospital with severe pneumonia. He is rapidly declining and there is no "code status". As you probe a little deeper, it becomes clear that he has not discussed the gravity of his illness with his physician or family. Although he is very ill, he remains alert and can understand your explanations of what is happening to him. You explain how ill he is and that, in your opinion, while you will be offering all appropriate therapies to keep him comfortable, you would recommend against intubation, ventilation, or CPR and, in fact, are unable to offer them as treatment options. However, he tells you that he is a "fighter" and wants "everything done" including admission to the ICU and a "breathing machine".

Is he requesting a "futile" treatment? Should you agree to his request? For many years, the bioethics literature debated exactly what "futile" meant. Some claimed it was a matter of percentages – if it worked less than 1% of the time it was futile. Others brought forth the idea of physiologic futility – if you could keep the heart beating and the blood pressure above a certain point, your efforts weren't futile. Unfortunately, the debate raged on, but there was never a true consensus.

Instead of continuing the rather futile debate about what was meant by "futility", a different approach was needed. It was realized that whatever the definition of futility, patients and physicians could differ in their opinion of what was appropriate treatment, and conflict could ensue. There is sometimes a tendency for these situations to deteriorate into an uncomfortable battle with the health care team on one side and the patient and family on the other. Could we devise an ethical process for preventing or dealing with that type of conflict? The University of Toronto Joint Centre for Bioethics has developed a model policy on dealing with demands for inappropriate treatment and Sunnybrook and Women's College Health Sciences Centre based its policy on the Joint Centre's. The details of the policy are beyond the scope of this article, the key is a focus on using the resources available to encourage negotiation, consensus and conflict-resolution instead of a head-butting contest over what is appropriate or inappropriate treatment. The focus is on keeping lines of communication open – discussing the goals of treatment and details about the patient's situation. Some demands for "inappropriate" treatment might stem from a patient's misunderstanding about the status of their disease and prognosis. Many times, you will be able to handle these discussions yourself, but involving groups like social work, chaplaincy and clinical ethics to facilitate the negotiations can be a big help.

Drafters of the policy realized that even with this type of approach there might be continued disagreement, and the policy has provisions for transferring care to another facility or proceeding to legal methods to withdraw or withhold treatment if initial negotiations fail. However, if the conflict can be recognized early and the appropriate facilitators are involved, there is usually not a need to resort to these "big guns".

The next time you are dealing with a "fighter" who is making demands for treatment that you feel is inappropriate, try to de-escalate the situation and avoid an uncomfortable conflict. Focus on a process that keeps the lines of communication open and look to the other members of your team who might help you deal with these difficult situations.

Historical Vignette:

The history of oxygen therapy

By Charles Hayter, MA, MD, FRCPC

The insert in this issue of **Hot Spot** focuses on oxygen therapy, which is a common feature of modern medical practice. Physicians knew for centuries that air had life-sustaining properties, but it was not until the 1770s that the English theologian and amateur chemist, Joseph Priestley (pictured at right), first isolated oxygen. Subsequently, the French aristocrat and scientist, Antoine Lavoisier, made essential connections between oxygen and respiration. The first experiments in oxygen therapy were made in France in the 1780s when oxygen was given to patients with consumption (tuberculosis) and asphyxia.

In response to the excitement over these discoveries, the English physician, Thomas Beddoes, founded a "Pneumatic Institution" for inhalation gas therapy in 1798. Techniques were crude, the treatments offered no real clinical benefit, and the institute closed in 1802. Oxygen therapy remained at a standstill for the next 100 years. Progress was delayed because of a lack of understanding of pulmonary physiology and the difficulties of producing oxygen and transporting it to the patient's bedside. When it was administered, it was delivered by ineffective means, usually by a funnel held near the patient's face, and also by nasogastric tube, subcutaneously and even intravenously. Because of the lack of any clear benefit, most doctors doubted its effectiveness.

After 1900, technical discoveries led to cheap mass production and transportation of oxygen. In addition, greater understanding of pulmonary physiology and lung diseases led to recognition of patients who might benefit from oxygen. The modern era of oxygen therapy began after World War I, with publication of British physician and physiologist J.S. Haldane's experience in treating war gas injuries in a landmark paper, "The Therapeutic Administration of Oxygen" (*British Medical Journal*, February 10, 1917, pages 181-183.) Haldane made the important observation that, because the body has no stores of oxygen, therapy needs to be continuous. He developed techniques that delivered oxygen cheaply and effectively. Subsequent experiments showed that oxygen therapy indeed reduced mortality from such diseases as pneumonia, and it finally became an accepted medical intervention.

Research Corner

By Rebecca Wong, MB, ChB, MSc, FRCPC, Princess Margaret Hospital

Research developments in the palliation of esophageal cancer

Dysphagia from esophageal cancer is a devastating symptom that is difficult to palliate well. For many patients, maintaining swallowing is a challenge throughout the course of their illness. Mechanical strategies (dilatation, laser, or stent) can provide expeditious and effective dysphagia relief in well-selected patients with shorter life expectancies. For others, the choice of a modality that can provide dysphagia relief by shrinking the tumour is desirable to avoid or delay other devastating local complications such as tumour overgrowth with stent occlusion, airway obstruction, fistula formation and pain.

An ideal palliative regimen should be completed in as short a time as possible, with favourable efficacy and toxicity profiles. Taking into account estimates of tumour doubling time, an accelerated fractionation approach holds the promise of fulfilling these characteristics in the palliation of esophageal cancer. At the University of Toronto, the Department of Radiation Oncology Gastrointestinal Site Group designed a phase II study to test this. In this study, 47 participated with 39 evaluable for response. The median survival of the participants was eight (±1) months. Sixty-seven per cent of patients had relief of their dysphagia. Those with a dysphagia score of ≥ 2 (pureed diet only) (11/15) 73% had ≥ 2 point improvement in their dysphagia. For the responders, median duration of response was 5.5 months (from start of treatment). Toxicity and quality of life profiles were favourable. Using the FACT-E QoL measure, improvements in more than half of the participants were observed in "emotional function", "dysphagia", "deglutition", and "eating" domains.

An alternative strategy being tested is the use of *combined modality in modest doses*. The National Cancer Institute of Canada Clinical Trials Group (NCIC CTG), in collaboration with the Trans–Tasman Radiation Oncology Group (TROG) (Australasian) is mounting an international study comparing short course radiotherapy (over two weeks daily treatments) with 5FU cisplatin versus radiotherapy alone. This study will be targeting patients similar to the ones who were enrolled in the previous study. The primary endpoint of the study is relief of dysphagia. Secondary endpoints of interest include dysphagia-free survival, time to response, quality of life (EORTC QLQ C30 & OES module), toxicities, survival, as well as Q-TWIST, a measure of time with and without symptoms and toxicity weighted by quality of life ratings. The study plans to accrue 250 patients over five years.

The successful accrual and completion of this study (ES2) not only will provide an answer to whether modest dose combined modality can be an effective palliative strategy in esophageal cancer, it will also serve to enhance and expand the network of researchers in esophageal cancer and symptom control both here in Canada and across the seas.

Watch for ES2 opening at a centre near you. We need your support!

Dr. Rebecca Wong is a radiation oncologist, Palliative Radiation Oncology Program at Princess Margaret Hospital, and NCIC CTG esophageal working group co-chair.

Lymphoma in the elderly...
continued from page 1...

inclusion of rituximab, a monoclonal antibody against CD20 to CHOP has resulted in improved survival. An important point to note is that virtually all the randomized trials have included patients with an ECOG performance status of less than four and with little or no comorbidity. There are, therefore, potential issues in generalizing the results of these randomized trials to all older patients with lymphoma.

Myelosuppression is a significant toxicity of CHOP-like chemotherapy. The ASCO and CCO guidelines on the use of colony-stimulating factors (CSF) have emphasized the role of CSF in secondary prophylaxis, that is, following a chemotherapy dose delay, or an episode of febrile neutropenia in patients on curative treatment. Since the elderly have an increased susceptibility to myelosuppression, several trials examined the role of granulocyte colony-stimulating factor (G-CSF) in primary prophylaxis. They show that G-CSF reduced the incidence of severe myelosuppression and the rate of infection. The rate of febrile neutropenia also appears to be lower in most trials. However, these benefits have not translated into improvements in disease control or overall survival. Retrospective studies have indicated that a poor ECOG performance status can be a powerful predictor of toxic death, and this might afford an opportunity to target primary prophylaxis with G-CSF to a higher-risk group. Importantly, within the group of older patients, increased chronological age has not been shown to be an independent risk factor for a poor outcome.

In summary, the management of older patients with lymphoma is assuming increasing importance given the changes in the incidence of lymphoma and population demographics. Randomized trials support the use of CHOP or CHOP-like chemotherapy to improve survival in those elderly with a reasonable performance status and little comorbidity. The use of G-CSF as secondary prophylaxis follows established practice patterns and is supported by the ASCO and CCO guidelines. The use of G-CSF for primary prophylaxis is more complicated, in part based on different outcomes reported in the literature, the lack of a survival benefit, and arguments around cost-effectiveness. It may be expected that high-risk older patients (e.g., poor performance status) would benefit from the addition of G-CSF as primary prophylaxis. Finally, quality of life and patient treatment preferences need to be taken into account when planning treatment in older patients with lymphoma.

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HOT SPOT

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Advances for end-of-life respiratory care

It is important to differentiate between:

- **true hypoxia**
- **bronchial obstruction/restriction**
- **subjective sensation of discomfort**

Although many of the causes of dyspnea are treatable, the patient and family should be fully informed of the burdens versus the intensity of investigations, and treatments should be in keeping with the patient's choice.

- The recent outbreak of SARS has a tremendous impact on hospital health care
- The concept of home care as "a hospital without walls" is getting closer to reality with recent advances in miniaturization of equipment
- ECG, spirometer and oximeter as modular attachments to a laptop (SpirOx card, EKG card by QRS Diagnostic; www.QRSdiagnostic.com & Vitalaire) and hemoglobin analyzer (HemoCue Inc.) have empowered the home visit physicians to diagnose the different causes of dyspnea and monitor the progression of hypoxia

Nonpharmacological management

- Nonpharmacological treatments are equally important as medications and work in tandem
- The first priority for the clinician is to validate and acknowledge the suffering (physical and emotional discomfort)
- Anxiety on many occasions equates to the fear of the unknown. Anticipatory counselling and education regarding the progression of symptoms and signs at end of life alleviate unnecessary anxiety and stress
- Efficacy is defined as a person's need to believe in her/his ability to control the self and the environment
- Nonpharmacological interventions enhance the patient, the family and other caregivers' efficacy. They are meaningfully contributing to the care instead of feeling powerless.
- On the contrary, deep suctioning is undesirable as a futile intervention in most cases since it causes discomfort and generates more secretions.

Symptomatic management

Symptomatic treatments can be directed at several dimensions:

- The treatment for anxiety is psychosocial and spiritual support involving the whole team. Bezodiazepines such as lorazepam are usually effective.

Secretion control

A distinction between thin and thick secretion is important.

- Inhaling nebulized saline mobilizes thick secretion effectively with or without bronchodilators.
- Anticholinergic agents - scopolamine and glycopyrrolate (Robinul) provide good drying of thin secretions. Glycopyrrolate does not cross the blood brain barrier and is less likely to aggravate terminal delirium.

Cough control:

- Oral narcotics are effective
- Steroids are beneficial for cough caused by lymphangitic spread
- For more persistent cases carabinoids i.e., cesamet, can be the back-up remedies
- The new remedy for refractory cough is lidocaine solution by nebulizer. Current evidence indicates that lidocaine inhalation is synergistic with beta-agonist, reduces pulmonary eosinophilia and reduces steroid dependency in asthmatic patients. There is less systemic absorption, but a few cases of initial bronchospasm were reported.

Air hunger

- **Narcotics** are the standard treatment for dyspnea
- Current evidence in COPD patients indicates that narcotics improve dyspnea and exercise tolerance
- They are beneficial in several dimensions: reduced anxiety, cerebral sedation, reduced sensitivity to hypoxia and hypercapnia, enhanced cardiac function by peripheral vasodilation and reducing cardiac preload, analgesic effect and desensitization of the opioid receptors in the airway
- The oral dosage of narcotic required to control air hunger is usually two to three times the requirement for analgesia
- Narcotic should be started at a low dose and increased by 30 to 50% every 12 to 24 hours until comfort level is attained
- It may be wise to preload patient with prochlorperazine or metoclopramide at the start of narcotics because of the increased side effects at a higher dosage

Table One: Common causes of dyspnea

Modifiable	Non-cancer-related	Congestive heart failure	Diuretic, ACE inhibitors, beta-blockers
		Arrhythmia	Amiodarone, verapamil, diltiazem, digoxin, anticoagulants
		Chronic obstructive lung diseases	Long and short acting beta-agonist, anticholinergic inhalations, steroid, xanthine
		Myocardial infarction	TPA (malignancy is relative contraindication), antiplatelet agents, angioplasty and bypass
		Pulmonary embolism	Anticoagulant, embolectomy
	Cancer-related	Anxiety	Counselling, social & spiritual support, antianxiolytic
		Anemia	Blood transfusion, reduce blood loss
		Pleural effusion	Thoracocentesis, pleurodesis
		Pneumonitis	Antibiotics
		Superior Vena Cava Syndrome	Radiation, stent, steroid
Nonmodifiable		Enlarging malignancy	Palliative treatment
		Lymphangitic spread	
		Fibrosis from radiation or chemotherapy	

Table Two: Pharmacological treatments

Medication	Indications	Dosage	Adverse Effects
Morphine	Air hunger, cough	Starting dosage same as for pain control 5-10mg q4h and increases by 30-50% until comfortable. Reduce dosage in children, elderly & Asians	Nausea, dry mouth, dysphoria, delirium, constipation, sedation
Codeine, Hydrocodone		25-50 mg q4h initially	
Hydromorphone		1-2 mg q4h initially	
Scopolamine	Secretion control	0.4 mg sc q4-6h	Dry mouth, confusion, hallucination, blurring of vision, sedation, constipation, urinary retention
Glycopyrrolate (Robinul)		1-2 mg po tid or 0.1-0.2mg sc or im q4h	As above less confusion and hallucination
Nabilone (Cesamet)	Cough	1-2 mg Bid to qid (contraindicated in severe hepatic impairment)	Sedation, vertigo, dysphoria, dry mouth, ataxia, blurring of vision
Lidocaine	Cough, broncho-constriction	Start with 1-2 cc 0.5% preservative free solution (iv) q4h by nebulizer	Initial bronchospasm, transient pharyngeal anaesthesia and loss of gag reflex
Lorazepam	Anxiety, sedation	0.5-1 mg bid for anxiety and q30min.for terminal sedation	Confusion, especially in the elderly, paradoxical excitation
Midazolam	Sedation	1-5 mg sc, im or iv, reduced dosage in the dying or heavy narcotic patient	Hypotension, tachypnea

Advances for end-of-life respiratory care - *continued*

- When used in a stepwise fashion, narcotics are safe and do not alter respiration
- Nebulized narcotic has many advantages such as more acceptable by patient, a huge local absorption area in the lung, and reduced systemic side effects. However, there is a lack of evidence from any large clinical trials. They are generally considered only effective in opioid-naive patients.
- The eligibility criteria for **oxygen** and equipment coverage by the Ministry of Health under the ADP program are listed in Table Three.
- With good narcotic treatment, many patients do not require home oxygen.
- Provision of home oxygen in patients with hypoxia is beneficial.
- Most of the "nonhypoxic" patients will eventually become hypoxic in their final days as the disease progresses and complications set in.
- Palliative home oxygen for three months is more cost-effective than staying in a hospital for a couple of days. In my opinion, refusal of the request of home oxygen for a deteriorating "nonhypoxic" patient does not conform to the principles of autonomy and fairness as home oxygen enhances a deep-rooted sense of efficacy.
- Up to 70% of cancer patients experience dyspnea in the last six weeks of their life.
- The percentage is higher for primary lung cancer.
- Similar to uncontrolled pain, the impact of dyspnea on the quality of life for the patient and caregivers is so overwhelming that it diverts all their energy from pleasurable activities and meaningful personal connections.
- There is a tremendous pressure for the clinicians to go through a comprehensive assessment and to develop quickly a strong therapeutic alliance to guide the patient and family through the crisis (Figure One).

Continuous sedation

- Currently the treatment of dyspnea has limitations. It is not always effective or tolerated over time.
- Anticipatory input and directions from the patient and family are essential before proceeding with continuous sedation.
- The principle of "double effect" implies when the symptoms impair the quality of life so negatively, it is not acceptable morally to withhold treatment even though the treatment may have a negative impact on the quantity of life (i.e. the principle of beneficence overrides nonmaleficence).
- Sedation can be temporary, intermittent or until death occurs.
- Lorazepam orally or sublingually 0.5mg to 1mg every 30 minutes or short-acting midazolam iv. or sc. starting normally at 1 mg/hour and titrating up slowly.

Special gases

- Heliox (a combination of helium and oxygen which is lighter than air and brings a new frontier to deep sea diving) provides better penetration and aeration in very narrow airway.
- Nitric oxide is beneficial to patients with pulmonary hypertension.

The benefits of these special gases in special palliative situations such as in patients with severe pulmonary fibrosis, remain to be explored in future.

Acknowledgement

I would like to pay tribute to all the caregivers who endure, sacrifice and excel during the outbreak of SARS.

Table Three: Assisted device program (ADP) of Ontario Ministry of Health

For equipment e.g. nebulizer, suctioning machine	Basic requirements • Disability > 6 months • Not on Workplace Safety & Insurance Board (WSIB) or significant mental illness • Valid health card	Specific requirement Prescribed by **clinician**, assessed by **authorizer** e.g. specially designated O.T. before going to **vendor.**	Coverage up to 75%
For oxygen		**PO2 <55mm Hg**	Coverage 75% 100% if: 1. under social assistance 2. under CCAC 3. Long-term care institutions
		PO2 56-60mm Hg + one of the following: • Cor pulmonale • Pulmonary hypertension • Secondary polycythemia • Nocturnal hypoxemic • Exercise hypoxemia	
		Palliative care	Up to three months

Figure One

Guiding Principles

- Beneficence - do good
- Nonmaleficence - do no harm
- Autonomy - fully informed & empowered for decisions
- Fairness - individual versus collective
- Truthfulness
- Commitment - to professional relationship
- Accessibility & availability
- Accompaniment - follow patient all the way
- Team consistency - avoid conflicting messages
- Double effects - optimize treatment with conflicting principles

↓

Comprehensive Assessment

- Symptoms and signs
- Differential diagnoses
- Previous treatments
- Impact on the quality of life
- Caregiver burdens
- Patient's life choices, values and beliefs
- Family wishes and expectations

↓

Developing Therapeutic Alliance

- Validate the suffering
- Relieve physical symptoms
- Psychosocial support
- Explore spiritual needs
- Explore future treatment options and acknowledge limitations
- Discuss advanced directives with family involvement
- Emphatic presence

↓

Treatment for underlying pathology

↓

Palliative Treatment

Nonpharmacological

- Counselling and education regarding the progression of symptoms and signs at end of life:
  1. Reduced cardiac output with cold hands and feet & peripheral cyanosis
  2. Diaphoresis & perspiration
  3. Alteration in taste
  4. Alteration in respiration & death rattles
  5. Fever
  6. Delirium
  7. Inability to swallow
- Elevating and repositioning the patient
- Create a draft - fan or opening a window
- Providing shallow suctioning and relaxing music
- Administering previously-instructed chest physio and breathing exercises

Pharmacological - *details in Table Two*

- Anxiety: benzodiazepines
- Secretion control:
  1. Thin secretion - saline inhalation
  2. Thick secretions - scopolamine or glycopyrrolate
- Cough control:
  1. Narcotics
  2. Steroid
  3. Carabinoids, e.g. Cesamet
  4. Lidocaine inhalation
- Air hunger
  1. Narcotics
  2. Oxygen
- Terminal sedation:
  Lorazepam, Midazolam