

HOT SPOT



From the editor's desk

By Dr. Cyril Danjoux

Palliative care is aimed at the relief of suffering and improvement of quality of life for those living with or dying from an advanced illness or those who are bereaved. In this issue of **Hot Spot**, Dr. Mary Vachon summarizes a forthcoming chapter she is co-authoring on "suffering in terminal illness".

Cancer caregivers play a vital role in the care of cancer patients. The impact of providing cancer care on the well-being of caregivers is addressed by Dr. Eva Grunfeld.

Dr. Charles Hayter provides an informative historical vignette on the history of morphine.

The insert is on "palliation in lung cancer", by Dr. Andrea Bezjak et al. from the Palliative Radiation Oncology

Program (PROP) at Princess Margaret Hospital/University Health Network.

Dr. Rebecca Wong's research column summarizes our collaborative efforts and activities which led to the formation of the Palliative Radiation Oncology Group – Ontario (PROG-O).

Dr. Rebecca Wong has moved her practice to Princess Margaret Hospital as of August 1, 2001. Her interests are in gastrointestinal malignancies and palliative radiotherapy. We thank her for leading the Rapid Response Radiotherapy Program as the research coordinator for the last three years. She will continue to be the associate editor for **Hot Spot**, and contribute to the Research Corner. She can be reached at (416) 946-2000. We wish her continued success in her new position.

We wish you a happy summer.

Comfort and stress among cancer caregivers

By Dr. Eva Grunfeld

The primary focus of our concern is usually the quality of life and health status of cancer patients, as is appropriate. More recently, however, there has been a growing interest in the well-being of cancer caregivers: those people who care for cancer patients. Cancer caregivers can be divided into two broad groups: professional caregivers and non-professional (usually family) caregivers. Recent research has identified some important issues with respect to cancer caregivers.

The research shows that both professional and non-professional caregivers are strongly committed to caring for cancer patients. For example, in

a study of cancer care professionals responsible for systemic therapy in Ontario, we found that approximately 50% have spent over 10 years working in the cancer care system in Ontario and that their principal source of job satisfaction is patient care. Similarly, in a study of family caregivers of women with advanced breast cancer, we found that the majority of patients had family members who would provide care when needed, and that those caregivers were willing to make large sacrifices in order to care for their family member with advanced cancer. This level of commitment on the part of both professional and family caregivers towards cancer patients is very

continued on page three...

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In this issue: Comfort and stress among cancer caregivers; On suffering in terminal illness;
Historical Vignette: The history of morphine; Research Corner.

Insert - palliation in lung cancer

On suffering in terminal illness

By Mary L.S. Vachon, RN, PhD

“Suffering occurs when the impending disintegration of the person is perceived; it continues until the threat of disintegration has passed or until the integrity of the person can be restored in some other manner...., suffering extends beyond the physical. Most generally, suffering can be defined as the state of severe distress associated with events that threaten the intactness of the person.” (Cassell, *The Nature of Suffering*, 1991. **Goals of Medicine**)

At the recent National Hospice and Palliative Care Organization’s Second Joint Clinical Conference on Hospice and Palliative Care, William Shaver, a gastroenterologist, extended Cassell’s work to describe a simple paradigm of suffering involving three broad categories:

- 1) Abandonment of the Self (AOS),
- 2) Isolation,
- 3) Loss of Significance.

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Abandonment of the self occurs in early childhood development as a result of societal influences and the intolerance of negative emotions, and results in an unconscious abandonment of the intact sense of self. Compensatory mechanisms attempt to recreate the illusion of wholeness throughout adult life, but these defences collapse in the face of serious illness or impending death. Most of what is currently recognized as suffering is, in reality, damage and loss of these compensatory mechanisms, and the pain of suffering is a result of the unmasking of the underlying incomplete sense of self and an emerging, deep longing for wholeness and transcendence.

Clinical manifestations of AOS may include:

- 1) an inability to feel emotions,
- 2) guilt or embarrassment over one’s illness,
- 3) self-deprecating or abusive behaviour,
- 4) agitation or pain not responsive to the usual doses of medication, or
- 5) a deepening depression.

Isolation can occur at a personal level through AOS, or on a relational level with the breakdown of the family, community, and culture. The general denial of death in our culture and issues on control contribute to loss of significance.

If suffering represents a loss of psychological defences and resulting re-emergence into consciousness of the incomplete, fractured sense of self, then interventions that encourage one to recall, experience, and integrate their deepest and truest nature should facilitate emotional and psycho-spiritual healing. The major therapeutic goal of care for the suffering should be, therefore, to offer a corrective experience in which patients can experience their full range of emotions in a safe, supportive environment, and experience unconditional acceptance of their current situation and their present frame of mind. This will, in turn, facilitate an individual’s innate ability to move toward a more cohesive and integrated sense of self.

- AOS responds to validation, reflective listening, respectful presence and unconditional love.
- Isolation can be addressed through re-establishing relationships, a sharing of stories, and being real.
- Encouraging sustained focused introspection through a life review and attempting to re-orient the locus of control from cure to a search for meaning alleviates LOS.

Intervention with suffering

A greater understanding of the true essence of human suffering could lead to more consciously directed interventions, as well as less fear and reluctance on the part of caregivers to address these issues. Specific ways in which the fundamental causes of suffering can be more directly addressed include:

- Begin to consciously differentiate the myriad of external manifestations

(symptoms) of suffering from the underlying root causes – abandonment of self, isolation, and loss of significance.

- In every patient encounter, attempt to:
 - * perform a quick initial assessment of the patient’s baseline emotional state (angry, sad, afraid).
 - * verbally confirm, mirror, and validate that emotion for the patient.
 - * initially resist the urge to fix or make things right – appreciate the power of silent presence.
 - * strive to make the patient feel comfortable simply being who and what they are at that moment.
- The pathway through suffering unfolds, it is not forged. Strive to be a facilitator/catalyst for the process.
- Give permission and encourage surrender to the process. It is the deep inner intelligence of the patient that drives this awakening.
- Help re-establish relationships. Encourage the simple sharing of stories as an ice-breaker.
- Promote sustained, focused introspection through an ongoing life review.
- Encourage the active search for meaning. “If your disease could talk – what do you think it would be saying to you right now?”

Suffering should never be blindly eliminated, but should be consciously accessed and nurtured through specific interventions that promote the unity of the self. Methods that successfully address and help resolve these fundamental causes of suffering can promote emotional healing and help restore a deep sense of inner being and connectedness for the dying.

This article is excerpted from a forthcoming chapter in the Concise Oxford Textbook of Palliative Care co-authored by Drs. Vachon and Shaver.

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

Comfort and stress among cancer caregivers - continued from page one...

reassuring. However, the research does identify some issues of concern.

With respect to professional caregivers, a large proportion are experiencing burn-out with over 50% of oncologists and 35% of allied health professionals (such as nurses and pharmacists) experiencing high levels of emotional exhaustion, one of the components of the burn-out syndrome. As well, approximately one-third of all professional groups providing systemic therapy are considering leaving the cancer care system. Emotional

exhaustion was one of the most important predictors of consideration to leave the cancer care system.

With respect to family caregivers, in a longitudinal study of patients with advanced breast cancer, we found that levels of psychological morbidity are high. In the early palliative phase, when the diagnosis of advanced disease has already been made but the patients' functional status is still high, one-third of family caregivers are anxious and 10% depressed. By the terminal phase (approximately the last four weeks before death) 44% of caregivers are anxious and 30% depressed. The concern is that, despite the high

prevalence of psychological morbidity in this group, psychosocial interventions to treat anxiety and depression are not offered to family caregivers.

Cancer caregivers, both professional and non-professional, play a vital role in the care of cancer patients. Research shows a high level of both personal and professional commitment. However, growing evidence of psychological morbidity such as anxiety, depression and burn-out points to the need for psychological interventions targeted at these two distinct groups.

Historical Vignette: The history of morphine

By Charles Hayter, MA, MD,
FRCP, Radiation Oncologist,
T-SRCC

Morphine is a commonly prescribed analgesic which is used frequently in palliative care. It is derived from opium, the dried juice of the unripe seed capsules of the poppy (*Papaver somniferum*).

Opium is one of the oldest medical remedies. Its pain-relieving and soothing properties have been known since ancient times, and in many cultures such as Chinese, opium-smoking became an accepted recreational pastime.

In the sixteenth century physicians such as Paracelsus promoted the use of *laudanum* (opium dissolved in alcohol) to relieve pain, agitation, and diarrhea. It was common practice among some English writers to use *laudanum* to calm their nerves and stimulate their imaginations.

Advances in chemistry eventually made it possible to recognize that opium contains about 20 alkaloid ingredients, amongst which are morphine (9-16%), codeine (0.8-2.5%), and papaverine (0.5-2.5%). Morphine was first isolated in 1806 by 22-year-old apothecary's assistant Frederick Serturmer who did not

recognize its potency and almost died from an overdose.

With the development of the hypodermic syringe in 1855, it became possible to bypass the GI tract in administration of morphine. The syringe and a supply of morphine became indispensable tools in the doctor's black bag. Morphine in its many forms remains the mainstay of palliative medicine.



Research Corner

- continued from page 4...

with a special focus on bone metastases.

Through a randomized trial design, she set out to evaluate the impact of a patient-centered one-on-one counselling session supplemented by short, written material to augment our patients' informational needs. It was hypothesized that satisfying our patients' informational needs would translate into improving our patients' ability to cope with their illness. The study proposal was met by much enthusiasm, leading to a follow-up meeting entitled: "Educational intervention for patients with bone metastases: methodological issues". **Dr. Levin** (PMH) helped us fine tune the proposal by sharing the results of his research, where he had examined the impact of an information fact sheet upon joint treatment decision. The study proposal was endorsed by PROG-O members, and is currently actively seeking funding support. Hopefully it will open for accrual in the not too distant future.

PROG-O has had a successful year! We are optimistic that through continued dialogue, we can stimulate enthusiasm, participation and collaboration in palliative radiation oncology research within our communities and beyond!

Interested in joining in on the discussions? Please call Su Horn, (416) 480-6165 for details.

PROG-O meetings are held on the fourth Tuesday of the month, 8-9:30 a.m. at PMH, TSRCC, and HRCC. Accredited by the Royal College of Physicians and Surgeons. Sponsored by Aventis at PMH and Orthobiotech at TSRCC.

Research Corner

By **Rebecca Wong, MBChB, FRCPC**

In the Summer 2000 issue of **Hot Spot**, Dr. Jackson Wu (HRCC) reported the proceedings of the first joint research meeting between palliative radiation oncology groups at Princess Margaret Hospital (PMH), Toronto Sunnybrook Regional Cancer Centre (TSRCC) and Hamilton Regional Cancer Centre (HRCC). Since then, our collaborative efforts have been consolidated, leading to the formation of the Palliative Radiation Oncology Group – Ontario (PROG-O). The objectives of the PROG-O were twofold: 1. To provide a forum to facilitate the development of research ideas, and 2. To provide a forum for the review of clinical practice issues in palliative radiation oncology. Since our first inaugural meeting, we have been having monthly meetings using videoconference as the medium. While we have had our share of equipment challenges, these have not detracted from our enthusiasm.

Throughout the year, a diverse range of issues was discussed, the agenda being driven by research interests of our members, ranging from methodological issues, to novel radiotherapy strategies, to the broader perspective of strategies that would improve our ability to care for patients living with advanced cancer. The following is a summary of our activities.

From a methodological perspective, pain measurement and the problems of incorporating this as an outcome measure have repeatedly surfaced. **Dr. Sussman** (HRCC) presented an overview on the methodological issues of pain measurement, aptly titled: “The pain of measuring pain”. His clear and thoughtful presentation stimulated the group to share our problems, solutions and insight into this issue through a follow-up session entitled “The pain of measuring pain: from theory to practice”. **Drs. Bezjak** (PMH), **Wong** (TSRCC) and **Wu** (HRCC) presented on behalf of the three participating centres, reviewing and comparing the lessons we have learned by combing through the literature and through our own experience. In another session, **Angela Turner** (PMH),

Stephen Scott (PMH) and **Jane Lea** (PMH) led us in a discussion entitled “Palliative radiation therapy: Outcomes unknown”. Here, the problems and objectives of maintaining follow-up data, concerns regarding patient burden, the handling of proxy responses and strategies to handle high attrition rates were discussed.

From a treatment perspective, the management of bone metastases represents a significant proportion of patients referred to the palliative radiotherapy clinics. Strategies to optimize the use of radiotherapy in patients with bone metastases, and improve our understanding of the pathophysiology behind it have captured much of the creative energy in our group.

Dr. Heath (PMH) led us through a review of “Urinary markers of bone metabolism”, taking us through the types of marker currently available, and their potential applications in trial design, leaving much food for thought. From a more pragmatic perspective, **Dr. Wu** presented “Two trial proposals: Palliative radiation for bone metastases”. The first proposal aimed to evaluate the efficacy of a higher dose single fraction regimen (1200cGy in one fraction), with particular emphasis on its use in long bones, while the second proposal aimed to define the role of repeat radiotherapy, and factors that may predict for response in bone metastases. Both research ideas have gained support from the PROG-O members and are currently under development. **Dr. Danjoux** (TSRCC) presented his study in a session entitled “Oral transmucosal fentanyl for

incidental pain in radiotherapy patients: an innovative approach”. The rapid absorption of sublingual fentanyl and its significant benefit for incident pain was elegantly captured in this phase II study. Further refinement of its optimal application will be explored through future studies that are being planned.

The optimization of radiotherapy is but only one perspective of how we can improve our patients’ well-being. **Ms. Joan Pope** (TSRCC) presented a study proposal in a session entitled “What is the impact of a patient education intervention for patients living with bone metastases?” Building on the findings of a survey on the informational needs of our patients that was performed a year ago, Ms. Pope designed a module consisting of short, written material addressing topic areas that are important to patients living with advanced cancer,

continued on page 3...

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By Dr. Andrea Bezjak, Dr. Catherine Heath, Ms. Jane Lea, Palliative Radiation Oncology Program (PROP), Princess Margaret Hospital/University Health Network. Supported by an educational grant from AstraZeneca and Purdue Pharma. PROP is supported by the Alan Kerbel Fund.

PALLIATIVE CARE: The care of patients with incurable disease. The focus is on symptom control and enhancing quality of life (QOL).

Relevant issues in assessing palliation in lung cancer patients:

1. Symptom relief - rapidity, degree and duration
2. Does the patient have one or many symptoms? (some may improve, some may not)
3. Which symptom was the main problem? (some symptoms may be better palliated than others)
4. The toxicity/side-effects of treatment
5. Improvement in performance status (may be influenced by cancer outside the area being palliated with RT)

Role of RT in palliation of thoracic symptoms

Symptom control:

- Short or intermediate palliative RT plays an important role in the management of hemoptysis, pain, cough, airway obstruction, and post-obstructive pneumonia with mild or modest toxicity.
- Symptoms due to nerve compression (eg, superior sulcus/Pancoast tumours and intercostal neuropathic pain) are more difficult to palliate (may require higher doses).
- RT is not effective for shortness of breath due to anemia, widespread disease, pleural effusion or lymphangitic carcinomatosis.

Is there an optimal RT schedule?

- Different dose-fractionation schedules offer similar palliation
- Shorter radiation schemes (including 17 Gy in two fractions one week apart, and 10 Gy in a single fraction) may provide better palliation, with equivalent symptom control, less toxicity and less burden to the patient and family, although for patients with better performance status there may be symptom and survival advantages to longer schedules

RT outcomes from shorter treatment protocols:

- Approximately 80-85% report improvement in hemoptysis; 60% improvement in cough; Pain improves in two out of three patients.
- On average, symptom relief lasts for 50% or more of the patient's survival time.

Radiotherapy for other metastatic sites

Bone metastases:

- Symptomatic painful metastases - one or five daily RT fractions commonly used: whether five fractions gives more durable pain relief is still controversial.
- RT may reduce the risk of pathological fracture.
- Response to RT may take two to four weeks for maximum effect. Optimization of analgesia is an important adjunct to RT while awaiting full benefit of pain relief.
- Patients with multiple sites of bony pain should have good analgesic management before RT is instituted to areas of worst pain; if analgesics and co-analgesics fail to provide relief, wide field or hemi-body RT may be considered.

Brain metastases:

- Initial symptom relief obtained with steroids; reduce steroid dose following RT to minimize toxicity. Avoid night-time steroid dosing to attempt to prevent insomnia.
- Most patients with multiple metastases receive five RT fractions to the whole brain.
- Solitary lesions may be treated with surgery or stereotactic radiation if appropriate.

Spinal cord compression:

- Rapid referral (<24 hours after symptoms onset) to radiation oncologist is vital to maximize neurological function: most important prognostic factor is whether the patient is still ambulant at time of treatment.
- Five RT fractions and dexamethasone is standard treatment.
- If cord compression treated surgically, post-op RT to prevent tumour regrowth.

Supraclavicular lymph nodes / Skin metastases:

- Short course RT indicated if painful, ulcerating, bleeding or rapidly growing lesions.

Liver metastases:

- Rarely irradiated due to RT toxicity to liver even with small doses.

Practical RT issues for lung cancer patients

Side effects after palliative radiotherapy:

- Patients are given information about common side effects they can expect after RT.
- Acute toxicity in palliative RT is self-limiting – onset may take several days, and last up to one week.
- Fatigue is a common general side effect; other toxicity depends on treated site:
- **Thoracic radiation:** transient esophagitis (treat with analgesia, sucralfate); skin erythema (plain moisturizer, cortisone cream if very itchy); chest discomfort/occasional fever (tylenol); dry cough (cough medications).
- **Bone metastases:** pain may flare up 24 to 48 hours after RT; other side effects depend on site e.g. nausea/vomiting after RT to thoracolumbar spine (prophylactic 5HT3 antagonists e.g. ondansetron); transient diarrhoea after pelvic RT (loperamide); sore throat after cervical spine irradiation (analgesia, mouthwash, exclude candida infection).
- **Brain metastases:** hair loss; blocked ear sensation (clean wax prn); transient nausea and headaches due to raised intracranial pressure (increase decadron)

What to watch for after palliative radiotherapy:

- Ongoing attention to symptom management is needed.
- Chronic toxicity after palliative radiotherapy is less important than for radical treatments as lower RT doses are used, and patients have shorter life expectancy.
- Radiation pneumonitis, typically two to four months later - less common than after radical treatment (Rx = steroids if needed, oxygen).

When will symptoms improve?

- Usually two to four weeks after RT.

When to re-refer:

- If patient develops new symptomatic sites, or recurrence of symptoms at previously treated site after a response of a few months.
- Discussion with treating radiation oncologist regarding management of symptoms or side effects is welcome any time.

PALLIATIVE CHEMOTHERAPY

Goals of palliative chemotherapy (CT) in non-small cell lung cancer (NSCLC):

- To relieve symptoms, prolong survival and maintain or improve quality of life (QoL).

Results from the literature:

- CT provides palliation for both small cell and non-small cell lung cancer.
- Studies comparing best supportive care (BSC) vs. CT+BSC in NSCLC report better clinical outcomes for the CT arm – prolonged survival and improved QoL.
- Results from second line CT vs. BSC also favour the CT arm: (eg TAX317 - Second line Docetaxel (Taxotere) vs. BSC in NSCLC).

1. Improved symptom control (especially pain) in the CT arm.
2. Decreased medication usage with Docetaxel (i.e. 50% decrease in opiate usage).
3. RT was less frequently required in patients in the CT arm (16 vs 41%).

Toxicity concerns:

- Patients are reporting improvements in QoL despite the effects of toxicity - thus survival gains are not outweighed by toxicity.
- Single chemotherapy agents and regimens that don't include cisplatin are helping to reduce toxicity and maximize the treatment benefits of chemotherapy.

By Dr. Andrea Bezjak, Dr. Catherine Heath, Ms. Jane Lea, Palliative Radiation Oncology Program (PROP), Princess Margaret Hospital/University Health Network. Supported by an educational grant from AstraZeneca and Purdue Pharma. PROP is supported by the Alan Kerbel Fund.

PALLIATIVE CARE: The care of patients with incurable disease. The focus is on symptom control and enhancing quality of life (QOL).

Superior vena cava obstruction (SVCO)

Contributing author: Dr. Murray Asch

What is SVCO?

- Caused by a blockage or narrowing of the superior vena cava, a major vein which drains the upper body.
- Predominantly occurs secondary to cancer, most commonly bronchogenic carcinoma (70-80%), lymphoma, breast cancer.

Symptoms:

- Common clinical symptoms are a direct result of increased venous pressure and include dyspnea, chest pain, cough, dysphagia, facial swelling, arm swelling, headaches, and cyanosis.
- The nature of the underlying disease determines both the severity of symptoms and the rapidity of symptom development.
- Patients may remain asymptomatic if the onset is gradual (i.e. if the lesion is above the azygous vein or if the tumour is slow-growing) for this allows for sufficient venous collateral development.

Treatment options:

- RT (palliative or occasionally radical, if tumour is localized) for NSCLC – however symptoms may take one to three weeks to improve.
- Chemotherapy for small cell lung cancer.
- The use of stents in the management of SVCO is a relatively new treatment option and is considered an alternative or adjunct to conventional management.

Stents for SVCO

Indications for stent placement:

- Stenting is appropriate for acute cases of SVCO with a rapid onset of severe symptoms, and for patients with chronic or recurrent SVCO following conventional treatment.
- Stents should be considered when the goal of treatment is palliation with expedient symptom relief.

Clinical outcomes:

- Stenting results in symptomatic relief within 24 to 48 hrs for up to 92% of patients in some studies; overall symptom alleviation success rate between 68-100%.

Benefits:

- Rapid alleviation of symptoms.
- Permits the patient to concurrently receive more radical treatment for the underlying malignant disease causing SVCO.

Risks and complications:

- Severe complications are relatively uncommon but include migration of the stent to the heart/lungs and cardiac failure (due to an increase in venous return).
- The most common complication is a 0-45% symptom recurrence rate. This is most commonly due to thrombosis or tumour ingrowth through the stent or tumour overgrowth at the end of the stent
- Accurate long-term patency rates are currently unknown, but many stents have remained patent throughout the remainder of the patient's life; however, patients in this population typically have a limited life expectancy (three to 10 months).

Ongoing care:

- Current practice includes anticoagulation following stent insertion to prevent re-occlusion.

Brachytherapy for palliation of lung cancer

What is brachytherapy?

- Brachytherapy is a type of RT where radioactive materials (e.g. radioactive seeds or sources) are placed in direct contact with the tissue being treated, which allows delivery of a concentrated dose to a small tumour volume and limits dose to adjacent tissues.
- In lung cancer, endobronchial brachytherapy consists of temporary insertion of radioactive sources into the bronchial lumen through a catheter placed at bronchoscopy.

Indications:

- External beam radiotherapy remains the mainstay of palliative RT for lung cancer
- Endobronchial brachytherapy may be effective for patients with symptoms (e.g. cough, wheezing, obstructive pneumonia, dyspnoea) due to:
 - recurrent disease after previous external beam RT
 - tumour causing obstruction of a major airway
- can also be useful for selected patients as a boost RT dose for patients treated with radical RT

Main limitation is poor RT dose delivery to tumour that surrounds a bronchus, i.e. more suitable for intrinsic rather than extrinsic obstruction.

Procedure:

- Patient is sedated and throat sprayed with local anaesthetic.
- Thoracic surgeon (or respirologist) inserts bronchoscope and defines extent and site of tumour; laser may be used to open airway of significant obstruction (may not be feasible to do laser in same sitting).
- Catheter is placed beyond the distal extent of tumour, a film is taken to document the length of bronchus that needs to be irradiated (eg. four cm length) and treatment is planned to deliver an exact dose to the tumour (eg. 10 Gy at one cm distance from source).
- Catheter is then connected to a machine containing the radioactive source, which automatically sends the source along the catheter into the treatment position (termed 'afterloading').
- Staff is outside the room, monitoring the patient via a camera for the four to five-minute duration of the brachytherapy treatment ("high dose rate brachytherapy").
- Catheter then removed from patient after treatment complete.

Risks and complications:

- Risks of sedating & bronchoscopy in a patient with compromised airway.
- Small increased risk of fistula and massive fatal haemoptysis due to erosion into pulmonary arteries (median time of event is several months after brachytherapy); however this can occur even if lesion is untreated.
- Radiation bronchitis and stenosis subacutely after the procedure (managed with steroids, bronchodilators, cough suppressants).

Ongoing care:

- Small degree of transient haemoptysis post procedure may occur.
- Response rates vary from 70 to 90% in appropriately selected patients, often within 24 to 48 hours (especially haemoptysis and obstructive pneumonia).
- Procedure can be repeated, if necessary.

How to choose the most appropriate modality for palliation in lung cancer

- Palliative RT is most appropriate if symptoms are localized (even if there are metastases elsewhere) and require urgent palliation (because of their severity or potential complications if they progress). For example...
 - lung symptoms* – especially hemoptysis, obstructive symptoms
 - spinal cord compression* – actual or impending
 - bone metastases* – localized pain or risk of fracture
 - brain metastases* – if neurological symptoms present
 - lymph node or skin lesions* – if ulceration or pain
- Palliative chemotherapy is most appropriate if symptoms are relatively mild, constitutional (rather than localized) or multifocal (eg. symptoms from lung, adrenal and liver metastases). Many patients are unaware of palliative benefit of chemotherapy, and may be overly concerned about its side effects. Patients with no or minimal symptoms may choose to undergo chemotherapy with the aim of prolongation of life, rather than symptom palliation.
- Supportive measures, including pain control, are always appropriate and necessary adjuncts to any anti-neoplastic treatment.