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Principles of cancer management

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Introduction

Cancer is a chronic disease, and like any other chronic medical condition, cancer patients have families, jobs, businesses and other commitments. Therefore, our aim is to cure the cancer if possible, and if not curable, then control the symptoms to improve quality of life and prolong the person's life by a few months (for example 2, 3, 6, 18 months or, if lucky, longer).

Table1: Examples of curable and incurable cancers

Malignancy	Curable	Incurable
Lung-non small cell	Up to locally advanced	Metastatic
Lung-small cell	Limited stage	Extensive stage
Breast	Up to node positive	Metastatic
Colon	Up to node positive	Metastatic Except solitary liver or lung mets
Cervical	Early and locally advanced	Metastatic
Head and neck	Early and locally advanced	Metastatic
Germ cells/choriocarcinoma	Mostly	
Lymphomas	Mostly	

Malignancy	Curable	Incurable
Sarcomas	Even metastatic Ewings, osteosarcome	
Leukaemia	Mostly	

Increasingly, cancer is managed in a multidisciplinary team setting to improve outcome and decrease morbidity of treatment. Some centres make decisions at multidisciplinary tumour boards, while some centres have dedicated multidisciplinary clinics.

Members of multidisciplinary team include surgeons, radiation and medical oncologists/hematologists, palliative care physicians, radiologists, pathologists, general practitioners, nurses and allied health professionals. Cancer care coordinators also play an important role in the provision of coordinated care.

In Australia, training programs to become cancer specialists are determined by respective colleges.

Table 2: Examples of roles of various multidisciplinary team members

Specialties	Examples of roles
Medical oncologist	Chemotherapy, biological therapy, hormonal therapy
Radiation oncologist	External beam radiotherapy, brachytherapy, systemic radiation
Palliative care	Symptom control, hospice care
Oncological surgeons	Definitive and palliative surgery
Allied health: Dietician, physiotherapy, occupational therapy, social work, pharmacy and psychology	Relevant to each speciality
Cancer nurses	Care coordination, clinical trials, chemotherapy administration

Medical therapies including chemotherapy, biological therapy and hormones

Medical therapies are offered to patients with the following aims:

Curative

E.g. Leukaemia, lymphoma, germ cell tumours, choriocarcinoma, Ewing sarcoma/osteosarcoma

Adjuvant (to eliminate micro metastatic disease after surgery or radiotherapy)

E.g. Breast, colon, ovarian, sarcoma

Concurrent with radiation therapy (as radio sensitisers)

E.g. Head and neck, cervical, lung

Palliative (to improve quality of life and prolong survival)

E.g. Metastatic cancers

Radiation therapy

Curative

E.g. Head and neck, cervical, lung, prostate, sarcoma

Adjuvant (to eradicate micro metastatic disease after surgery)

E.g. head and neck, breast, brain

Palliative (to improve symptoms)

E.g. Advanced local disease and metastatic cancers

Palliative care

Aim of palliative care is to improve quality of life by controlling symptoms

If a tumour can be shrunk by chemotherapy or radiotherapy, this would be an efficient option for controlling symptoms. In most cases, concurrent use of palliative care services and active anti-cancer therapy are necessary to maintain quality of life.

In all these situations, it is important to identify and treat the cause of the symptoms rather than adopting a 'one size fits all' arbitrary management plan.

Examples of symptoms and management are outlined below:

Pain: simple analgesics, narcotics, parenteral narcotics

Nausea: metoclopramide, 5HT3 antagonist, steroids

Loss of appetite: steroids

Cough/SOB: codeine, narcotics, nebulisers.

Depression: control symptoms, correct causes, counselling, antidepressants
family support, aids, home visits, physiotherapy, nutrition, occupational therapy, social work

Surgery

Surgery is performed for cure by removing the primary cancer and lymph nodes and for palliation by removing the mass causing symptoms in selected cases. In some cases, removing solitary or limited metastasis could achieve cure.

Overall approach to cancer management

Three main questions to consider are:

1. What is the type of cancer?

In most cases, this requires a tissue diagnosis. In modern oncology, it is unusual or inappropriate to start treatment based on clinical diagnosis alone without tissue diagnosis. Tissue diagnosis is also important to perform molecular studies to select appropriate targeted therapies.

2. What is the extent of the spread of the cancer?

This is answered by staging scans including CT scans, bone scans and PET scans.

3. Is it curable or not curable?

This depends on the type of cancer and the presence or absence of and the extent of metastasis.

For curable cancers, rate of cure is determined by prognostic factors (for example: tumour size and nodal status in breast cancer).

For incurable cancers, duration of survival is expressed in median survival rather than in absolute time frame.

Incurable metastatic cancers

Aim is to prolong survival and improve quality of life.

Why is quality of life important?

- Good for the patient and families
- Cost effective to the patient and health system by continuing to function normally, having less hospital admissions, causing less burden on community support systems

How does treating with chemotherapy or radiotherapy improve quality of life?

- By shrinking the cancer mass
- By decreasing the need for the sedative effect of analgesics

- By living longer

Concept of median survival

Survival figures are obtained from large data bases. Therefore, we can only quote median figures rather than absolute numbers for expected duration of survival. The meaning of median survival needs to be clearly explained to patients and families to illustrate uncertainty.

Table 3: Examples of median survival for selected cancers

Malignancy	Without treatment	With treatment
Non-small cell lung	6-9 months	9-12 months
Small cell lung	6-8 weeks	12 months
Colon	6-9 months	20 months
Breast	1-2 years	3-4 years

(Note: With current treatment options, survival figures continue to increase)

Case study

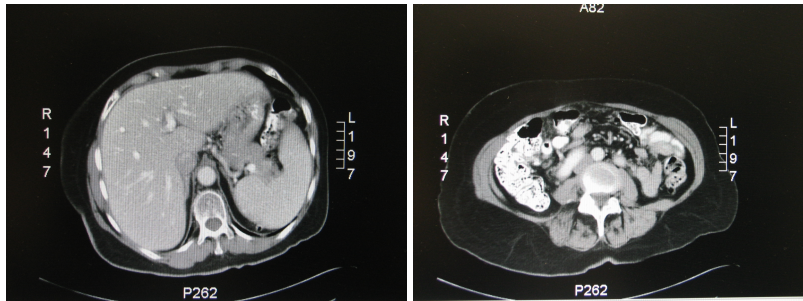
A 70-year-old lady presented with abdominal pain, vomiting and bloating. She commenced on morphine which was complicated by confusion and loss of mobility. CAT scan show extensive peritoneal deposits and cancer was protruding through umbilicus as well.

Figure 1: CAT scan of abdomen and pelvis of the patient



Biopsy of the umbilical mass reveals that the patient has metastatic ovarian cancer. She was deemed fit for palliative chemotherapy and underwent 6 cycles of Carboplatin and Paclitaxel with complete resolution of masses and symptoms. She did not require narcotics anymore. Chemotherapy was well tolerated. She lived for 4 years with good quality of life.

Figure 2: CAT scan of the abdomen and pelvis after chemotherapy.



Models of care

In larger cities, cancer care is delivered at dedicated cancer centres. In regional or rural centres, it is through shared care models where local doctors and visiting specialists work in partnership. At smaller centres where outreach visits are not viable or feasible, telemedicine models (teleoncology) are increasingly adopted.

Teleoncology

Teleoncology models are used for seeing new cases, reviewing urgent cases and for conducting multidisciplinary meetings at rural centres to provide specialist services closer to home. At some centres, various chemotherapy agents are supervised remotely by medical oncologists. These models are acceptable to Indigenous and non-Indigenous patients, welcomed by health professionals and provide savings to the health systems. However, further studies are needed to see if these models improve outcomes above and beyond improving access to disadvantaged populations. An example of a video case study is found here:

<http://www.youtube.com/watch?v=N5I7UexKcTU>