Medical Oncology

Role of Internist

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Introduction

- Oncology is a specialty within the field of internal medicine.
- It focuses on the study and treatment of malignant diseases.
Oncologist

- A doctor who practices oncology
- Specialises in studying, diagnosing, and treating cancer
- Do patient care from the moment of diagnosis through the course of the disease
Oncologist

- Explain diagnosis, staging of disease, various treatment options, recommend best course, deliver optimum care and quality of life
Oncology: subspecialities

- Radiology
- Anatomical pathology
- Radiation oncology
- Surgical oncology
- Gynecologic oncology
- Pediatric oncology

Medical oncology:
Treatment primarily with drugs, chemotherapy, hormonal therapy, and targeted therapy.
Internist

- An internist, also called a **general internist** or **doctor of internal medicine**
- Specializes in the diagnosis and medical treatment of adults.
Internist

• Provide long-term, comprehensive care including intensive care

• Manage common and complex diseases

• Serve as a primary care physician or as a consultant to other medical specialists
Internist

• Also involved in research and teaching
• Coordinate treatment when other specialists are involved in a patient's care
Cancer epidemiology

- Cancer is a significant global health problem
- **Worldwide incidence:** 10 m new cases/year
- 46% of which are in developed countries
- More than **7 million deaths** per year
Distribution by region

- ~45% of cases in Asia
- 26% in Europe
- 14.5% in North America
- 7.1% in Central/South America
- 6% in Africa
- 1% in Australia/New Zealand
Worldwide overall annual cancer incidence, mortality and 5-year prevalence for the period of 1993–2001. (From Kamangar et al.)
Cancer epidemiology

Men: 44%

Women: 38%

At risk of developing cancer at some time during their lives
Risk factors

**Age:** most significant risk factor

2/3 of all cases: older than 65 years

Incidence increases: as 3rd, 4th or 5th power of age
Modifiable risk factors

- Smoking
- Alcohol consumption
- Obesity
- Physical inactivity,
- Low fruit & vegetable consumption
- Unsafe sex
- Air pollution
- Indoor smoke from household fuels
- Contaminated injections
Cancer epidemiology

- **Lung cancer**: most common cancer, most common cause of cancer death

- **Breast cancer**: Second most common cancer, fifth cause of cancer death
## Other 8 most common cancer

<table>
<thead>
<tr>
<th>Developed countries</th>
<th>Developing countries</th>
</tr>
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<tbody>
<tr>
<td>Lung: 2 fold</td>
<td>Liver: 2 fold</td>
</tr>
<tr>
<td>Breast: 3 fold</td>
<td>Cervical: 2 fold</td>
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<tr>
<td>Prostate: 2.5 fold</td>
<td>Esophageal: 2-3 fold</td>
</tr>
<tr>
<td>Colorectal: 3 fold</td>
<td></td>
</tr>
</tbody>
</table>

**Stomach cancer: similar in developed & developing countries**
The Five Leading Primary Tumor Sites for Patients Dying of Cancer Based on Age and Sex in 2007

<table>
<thead>
<tr>
<th>Rank</th>
<th>All Ages</th>
<th>Under 20</th>
<th>20–39</th>
<th>40–59</th>
<th>60–79</th>
<th>&gt;80</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M</td>
<td>Lung</td>
<td>Leukemia</td>
<td>Leukemia</td>
<td>Lung</td>
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<tr>
<td></td>
<td>F</td>
<td>Lung</td>
<td>Leukemia</td>
<td>Breast</td>
<td>Lung</td>
<td>Lung</td>
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<tr>
<td>2</td>
<td>M</td>
<td>Prostate</td>
<td>CNS</td>
<td>CNS</td>
<td>Colorectal</td>
<td>Prostate</td>
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<tr>
<td></td>
<td>F</td>
<td>Breast</td>
<td>CNS</td>
<td>Cervix</td>
<td>Lung</td>
<td>Breast</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>Colorectal</td>
<td>Bone sarcoma</td>
<td>Colorectal</td>
<td>Liver</td>
<td>Prostate</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>Colorectal</td>
<td>Endocrine</td>
<td>Leukemia</td>
<td>Colorectal</td>
<td>Colorectal</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>Pancreas</td>
<td>Endocrine</td>
<td>Lymphoma</td>
<td>Pancreas</td>
<td>Bladder</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>Pancreas</td>
<td>Bone sarcoma</td>
<td>Colorectal</td>
<td>Ovary</td>
<td>Pancreas</td>
</tr>
<tr>
<td>5</td>
<td>M</td>
<td>Leukemia</td>
<td>Soft tissue sarcoma</td>
<td>Lung</td>
<td>Esophagus</td>
<td>Pancreas</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>Ovary</td>
<td>Soft tissue sarcoma</td>
<td>CNS</td>
<td>Pancreas</td>
<td>Ovary</td>
</tr>
</tbody>
</table>

(From Kamangar et al.)
How the cancer is diagnosed?

- Complete history
- Thorough physical examination
- Bed side procedures/screening
- Appropriate investigation
How the cancer is diagnosed?

Role of internist in diagnosis

• 1st contact person?
• Strategical position of internist
• Wide knowledge & experience to formulate diagnosis
• In a position to perform simple bed side technique
• The primary role of the internist is to use all the available techniques for the early detection of cancer
How the cancer is diagnosed?

Presenting problems in oncology

- Palpable mass
- Weight loss and fever
- Finger clubbing
- Ectopic hormone production
- Neurological paraneoplastic syndromes
- Cutaneous manifestations of cancer
How the cancer is diagnosed?  
Physical examination

- To identify primary site, metastases
- To discover any other conditions that may have a bearing on the management plan.
How the cancer is diagnosed?

Physical examination/bedside technique

- Thyroid examination
- Breast examination
- PR/PV examination
- Indirect laryngoscopy
- Proctoscopy/sigmoidoscopy
- Oscopy paps smear
- Bone marrow
- FNAC: LN, Liver mass
Role of internist in diagnosis

• Look for co-morbidities
• General condition including immune status
• Psychologic strength of patient and family
• Social and economic condition
Information from history/examination:

• the type of tumour
• the extent of disease/staging
• the patient’s general condition/comorbidity
• the metastatic or paraneoplastic symptoms
• the overall fitness of a patient
DIAGNOSIS

• Cancer diagnosis relies mostly on invasive tissue biopsy

• No noninvasive diagnostic test is sufficient to define a cancer

• In rare clinical settings FNAC is acceptable
Diagnostic objectives are

- To define the primary site
- Histology of the tumor
- Its grade
- Its invasiveness
- Molecular diagnostic information
- To rule out the treatable causes
Breaking the news to patient and family
MANAGEMENT

Multidisciplinary tram approach

Co-ordination among the various professionals in cancer treatment is of the utmost importance in treatment planning.
Multidisciplinary team

- Primary care physician
- Medical oncologists
- Surgical oncologists
- Radiation oncologists
- Oncology nurse specialist
- Pharmacists
- Social workers
- Rehabilitation medicine specialists
- Other professionals working closely with each other and with the patient and family.

Internist
MAKING A TREATMENT PLAN

From information on the

- extent of disease

- prognosis

- patient’s wishes

it is to determine whether the treatment approach should be curative or palliative
MANAGEMENT

• General management
  • To prepare patient for specific treatment
• Specific treatment
MANAGEMENT

Specific cancer treatments are divided into:

1. Surgery

2. Radiation therapy (including photodynamic therapy),

3. Chemotherapy (including hormonal therapy and molecularly targeted therapy)

4. Biologic therapy (including immunotherapy and gene therapy).
MANAGEMENT

Specific treatment may again be

• Curative

• Palliative
Complication management

Cancer therapies are toxic, patient management involves addressing

- Complications of the disease
- Complications of its treatment
- Psychosocial problems associated with cancer
Response to treatment

Complete response: disappearance of all evidence of disease

Partial response: $>50\%$ reduction in the sum of the products of the perpendicular diameters of all measurable lesions.
Response to treatment

Progressive disease: appearance of any new lesion or an increase of >25% in the sum of the products of the perpendicular diameters of all measurable lesions

Stable disease: Tumor shrinkage or growth that does not meet any of these criteria is considered stable disease.
Response to treatment

Unmeasurable extension: involvement of sites e.g., bone or patterns of involvement e.g. diffuse pulmonary infiltrates

No response is complete without biopsy documentation
FOLLOW-UP

At the completion of treatment, sites originally involved with tumor are reassessed. By radiography or imaging techniques, and any persistent abnormality is biopsied.
Follow up

- Monthly for 6–12 months
- Alternate month for a year
- every 3 months for a year
- every 4 months for a year
- then annually
- every 6 months for a year
- then annually
FOLLOW-UP

- At each visit
  - a battery of laboratory, radiographic and imaging tests were assumed to be best to detect recurrence before it becomes symptomatic.
- But this assumption has been found to be invalid
FOLLOW-UP

• So during follow-up visits, the **history and physical examination** are the major investigations performed.

• As time passes, the likelihood of recurrence of the primary cancer diminishes.

• For many types of cancer, **survival for 5 years** without recurrence is tantamount to cure.
SUPPORTIVE CARE

- The success of cancer therapy depends on the supportive care
- It is a major determinant of quality of life
- Even when life cannot be prolonged, the physician must strive to preserve its quality
Death and dying

Unsuccessful treatment occurs in three phases

• **First:** optimism at the hope of cure

• **Second:** hope to live with disease if recurrence occurs

• **Finally:** At imminent death, another adjustment in outlook.

• This stage include **denial, isolation, anger, bargaining, depression, acceptance, and hope**
Death and dying

- It is best to speak frankly with the patient and the family.
- These are difficult for the physician and family.
- The critical features of the interaction are:
  - to reassure the patient and family.
  - that everything will be done to provide comfort.
Death and dying

- Many patients prefer to be cared in homes or in a hospice rather than a hospital
Death and dying

Common causes of death

- infection leading to circulatory failure
- respiratory failure
- hepatic failure
- renal failure
Cancer prevention

- **Goals:** To prevent cancer in those at risk

- By screening for early detection, manipulation of the biologic, environmental, and genetic factors
Cancer prevention

- Education and Healthful habit
  - Smoking cessation
  - Physical activity
  - Diet modification
  - Energy balance
  - Sun avoidance
  - Chemoprevention

- Chemoprevention
  - Upper aerodigestive tract
  - Breast cancer
  - Colon cancer
  - Prostate cancer
  - Vaccines: H. pylori, HBV, HPV,

- Surgical prevention
Conclusion

Oncology is a specialised area of medicine

The internist’s responsibilities lie in all phases of cancer from the primary diagnosis to the terminal care
Thank you all