CANCER EDUCATION DAY

An Overview of Lung Cancer

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OUTSTANDING CARE – NO EXCEPTIONS!

Presenter Disclosure

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Objectives

- At the conclusion on this presentation, participants should be able to:
  - Understand the burden of disease
  - Risk factors
  - Have a better understanding of different types of lung cancer
  - Staging

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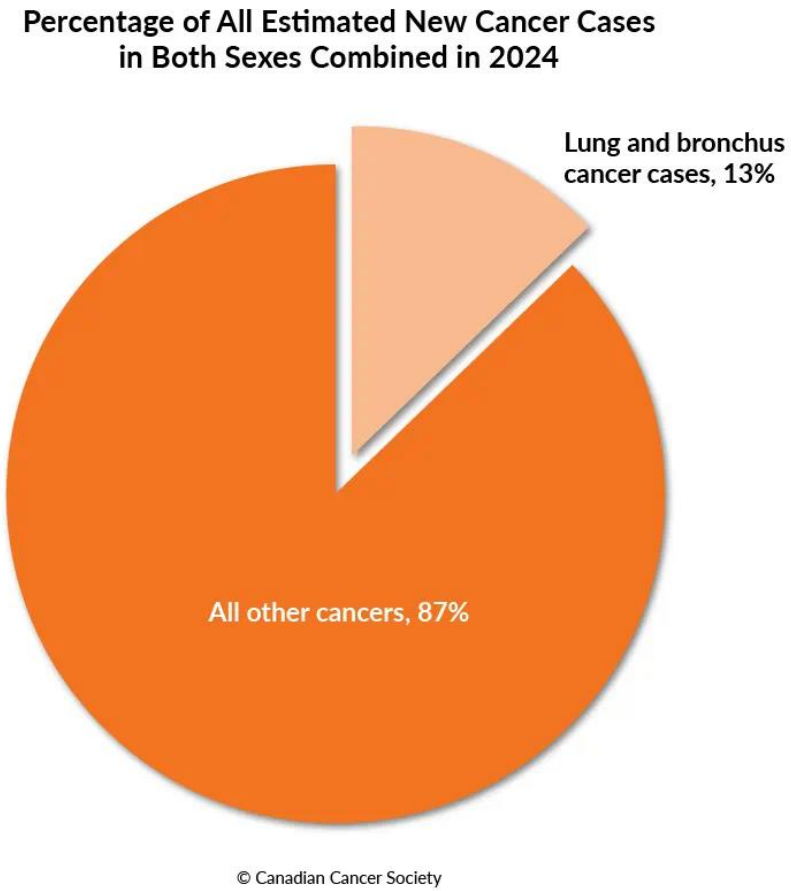
Burden of Lung Cancer in Canada

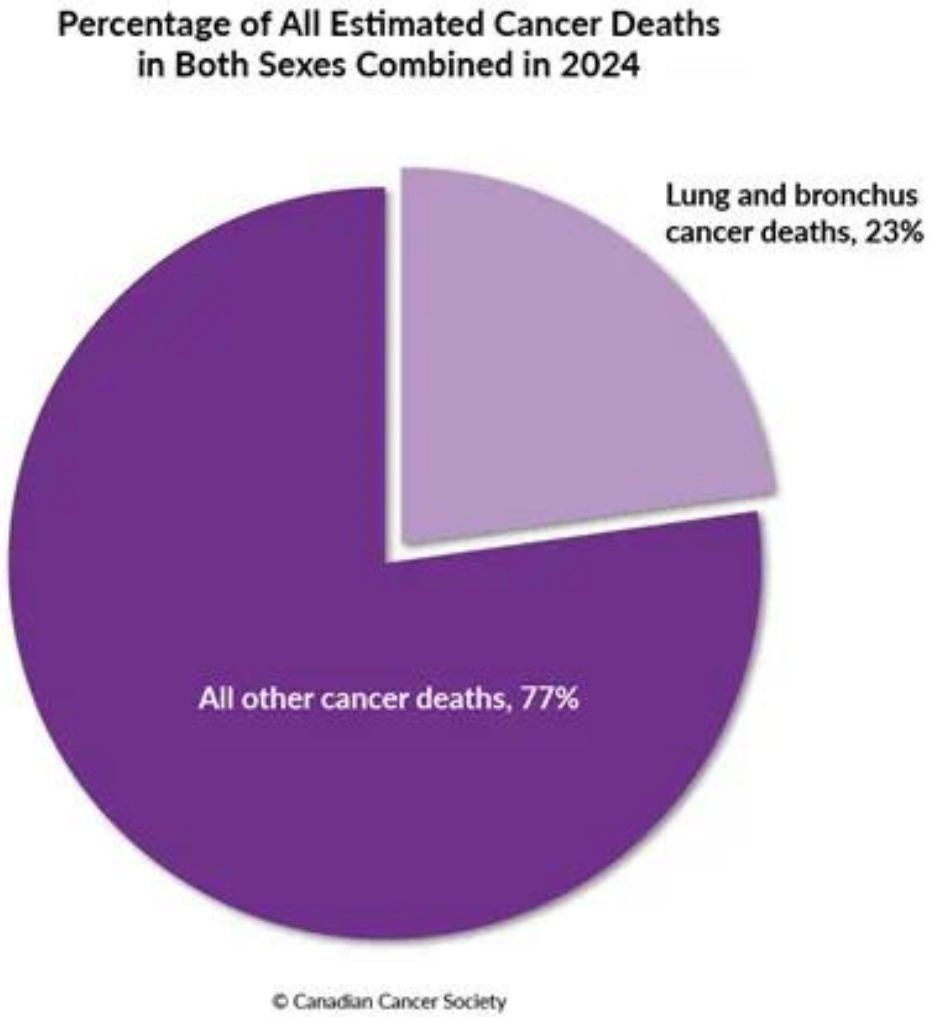
Category	Men	Women
New cases	14,800	17,300
Deaths	10,900	9,800
5-year net survival (estimates for 2015 to 2017)	19%	26%

Lung cancer is most common cause of cancer related death in males and females.

Canadian Cancer Society

Cancer Statistics 2024





Canadian Cancer Society

Risk Factors

- Smoking- Relative risk of cancer in long term smokers Vs Non- smokers is 10- 30 fold
- Asbestos- specially with pulmonary fibrosis
- Radon – Increased concentration in homes
- Smoke from wood/ coal burning in home
- Air pollution
- Radiation treatment in the past
- Lung diseases- Pulmonary fibrosis, COPD
- Family history of lung cancer

Types of Lung Cancer

Major histopathological subtypes- 1)Non-Small Cell Lung Cancer (NSCLC)

Major subtypes- A)Adenocarcinoma

B) Squamous cell carcinoma

C) Other types

2)Small Cell Lung Cancer (SCLC)

Why these subtypes are important?

- NSCLC- Need biomarker testing based on which different subtypes are treated
- Required tests- 1. PDL-1 for both Adenocarcinoma and squamous cell carcinoma
- Adenocarcinoma requires - 2.NGS testing which includes mutation testing for -

- EGFR, ALK, ROS-1, Her-2, NTRK, KRAS, Braf etc.

SCLC- No further tests currently

Staging NSCLC- why it's important

- Stage is important for treatment and prognosis

- Stage I and II- considered curable- options include surgery or RT, if not a surgical candidate
- Stage III- some are curable- Usually some are resectable, while others need combined chemo / RT
- Stage IV- Incurable- usually systemic treatment based on biomarker testing

SCLC

- For Practical purpose-

- Limited stage- Usually treated with Chemo/RT- small chance of CURE
- PCI- prophylactic cranial irradiation is offered if good response to initial treatment

- Extensive stage- Systemic treatments- incurable

TNM staging

- Current AJCC 8th

T_x	Tumor in sputum/bronchial washings but not be assessed in imaging or bronchoscopy
T_0	No evidence of tumor
T_{is}	Carcinoma in situ
T_1	≤ 3 cm surrounded by lung/visceral pleura, not involving main bronchus
$T_{1a(mi)}$	Minimally invasive carcinoma
T_{1a}	≤ 1 cm
T_{1b}	> 1 to ≤ 2 cm
T_{1c}	> 2 to ≤ 3 cm
T_2	> 3 to ≤ 5 cm *or* involvement of main bronchus without carina, regardless of distance from carina or invasion visceral pleural *or* atelectasis or post obstructive pneumonitis extending to hilum
T_{2a}	>3 to ≤4cm
T_{2b}	>4 to ≤5cm
T_3	>5 to ≤7cm in greatest dimension *or* tumor of any size that involves chest wall, pericardium, phrenic nerve *or* satellite nodules in the same lobe
T_4	> 7cm in greatest dimension *or* any tumor with invasion of mediastinum, diaphragm, heart, great vessels, recurrent laryngeal nerve, carina, trachea, oesophagus, spine *or* separate tumor in different lobe of ipsilateral lung
N_1	Ipsilateral peribronchial and/or hilar nodes and intrapulmonary nodes
2	Ipsilateral mediastinal and/or subcarinal nodes
3	Contralateral mediastinal or hilar; ipsilateral/contralateral scalene/ supraclavicular

TNM staging-

	N0	N1	N2	N3
T1	IA	IIB	IIIA	IIIB
T2a	IB	IIB	IIIA	IIIB
T2b	IIA	IIB	IIIA	IIIB
T3	IIB	IIIA	IIIB	IIIC
T4	IIIA	IIIA	IIIB	IIIC
M1a	IVA	IVA	IVA	IVA
M1b	IVA	IVA	IVA	IVA
M1c	IVB	IVB	IVB	IVB

What investigations are ordered for lung cancer staging?

- CT of Chest/ Abdomen / Pelvis
- CT brain
- Bone scan

- Ideally, we need PET scan and MRI of brain, specially for early stage/ resectable disease.

Summary

- Lung cancer is the most common cause of cancer related death in men and women
- About 90% lung cancers are diagnosed in smokers
- Its important to know different subtypes of lung cancer for treatment and prognosis
- Accurate staging is very important for treatment planning and prognosis.
- If a patient is diagnosed with lung cancer, then order all the staging investigations to expedite the care.

Thank you!