

The Doctor Patient Conversation



Mr Archie Roach

Dr Lou Irving
Royal Melbourne Hospital
Peter MacCallum Cancer Centre

Session Plan

- Overview of lung cancer (5 minutes)
- Archie Roach's lung cancer experience (25 minutes)

with

- Comments, questions and discussion from audience
 - especially barriers, opportunities, actions, partnerships

Epidemiology of Lung Cancer

- Commonest cause of death from cancer worldwide
(more deaths than breast, colon and prostate combined)¹

Estimated Cancer Deaths USA – 2006*			
Males		Females	
Lung	31%	Lung	26%
Bowel	10%	Breast	15%
Prostate	9%	Bowel	10%
Pancreas	6%	Pancreas	6%
Leukaemia	4%	Ovary	6%
Liver	4%	Leukaemia	4%
Eosophagus	4%	NHL	3%
NHL	3%	Uterus	3%
Bladder	3%	Myeloma	2%
Renal	3%	Brain	2%

* Jemal et al, CA Cancer J Clin, 2006:106-30

- Approx 12,000 new cases per year in Australia
 - Approx 8,000 deaths per year in Australia²
- ¹ Parkin, Lancet Oncol. 2001, ² ALF Lung Cancer Update 2006, ³ Jemal et al, CA Cancer J Clin, 2006

Large Number of Lung Cancer Deaths

2 factors

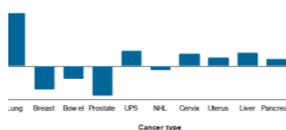
- 1. Common cancer
 - Smoking
 - Environmental pollution (traffic, in-door)
 - Other (unknown) factors
- 2. Low survival (<15% at 5 years)
 - Delayed diagnosis
 - Need to detect early



2013

Age-standardised rates^(a) for incidence, mortality, hospitalisation and 5-year crude survival^(b) for selected cancers, Indigenous Australians

Cancer site/type	Incidence ^(a) 2004–2008	Mortality 2007–2011	Hospitalisation 2006–07 to 2010–11	Survival 1999–2007
Lung (C33–C34)				
Indigenous	79.8	63.6	12.3	7.4
Non-Indigenous	43.0	33.2	7.9	10.7



Smoking (38% vs 18%)
Chronic lung infections
Other environmental factors

Poor access to health care
Comorbidities

Lung Cancer in Never Smokers (NS)

- Up to 25% of lung cancer in NS
- 7th leading cause of cancer death world-wide¹
- Different from tobacco smoke induced tumours clinically, at a molecular level
- Molecular profile quite different
 - Higher frequency of EGFR mutations, EML-ALK translocations
 - Greater alterations of mitochondrial DNA and whole genome changes in NS tumours²

¹ Sun et al. Nat Rev Cancer 2007

² Thu et al. Plos One 2012

Lung Cancer in Women

- Lung cancer causes 26% cancer deaths in Caucasian women (more than breast, ovarian and uterine cancers combined)¹
- 20% of lung cancer in Caucasian women is in never-smokers (cf 8% in males)²
- Most Asian women with lung cancer have not smoked³
- **Passive smoke, cooking oil vapours, indoor coal burning, fungal and TB infection, diets containing Chinese sausage, cured pork and chili and genetic factors⁴ have all been implicated. EGFR mutation likely**

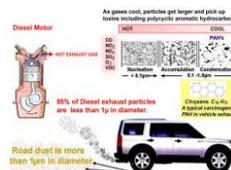
¹ Jemal et al, Cancer statistics, 2005. CA Cancer J. Clin. ² Wakelee et al, J Clin Oncol: Feb; 2007

³ Lam, Respiriology, 2005. ⁴ Hosgood et al. Mutat Res 2007

Traffic Pollution a Proven Cause of Lung Cancer

Range of pollutants in vehicle exhaust, but the most concerning are tiny, invisible particles from partially combusted diesel (PM 2.5 and smaller)

Now, very strong evidence that traffic pollution is a cause of lung cancer



- **ESCAPE study:** 17 European cohorts (312 944 members, 2095 lung cancer cases). 12.8 year follow up. Statistically significant associations were found between PM₁₀ and PM_{2.5} and adenocarcinomas of the lung (Lancet Oncology 2014)
- **Importantly** – no safe lower limit of exposure

Recent Advances

- Screening
- Diagnosis and staging
- New treatments
- Tobacco control

NLST – 20% Reduction in Lung Cancer Mortality with CT Screening



Reduced Lung-Cancer Mortality with Low-Dose Computed Tomographic Screening

The National Lung Screening Trial Research Team*

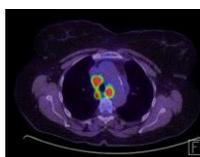
New Tools for Diagnosis and Staging of Lung Cancer



Linear and radial EBUS



Electromagnetic navigation bronchoscopy



PET scanning

Management of NSCLC

- Surgery
 - for early stage disease, for cure
- Radiotherapy
 - for cure, or palliation
- Chemotherapy
 - for modest prolongation of life in metastatic disease and palliation
- Molecular therapy
 - for metastatic disease
- Supportive care

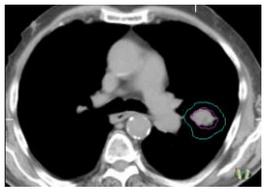
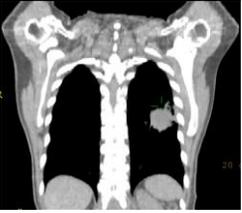


Multidisciplinary advice and management is the standard of care

(Stereotactic) Radiotherapy for Lung Cancer



Fiducial marker inserted by electromagnetic bronchoscopy guidance to guide stereotactic radiotherapy



Randomised trial of efficacy of stereotactic radiotherapy for inoperable early stage lung cancer at PeterMac

Targeted Therapy with Small Molecules

- Multiple genetic abnormalities in NSCLC, some can be blocked
- EGFR inhibitors – erlotinib, gefitinib
- EML4-ALK fusion oncogene inhibitor – crizotinib
- Similar effect to chemotherapy, but more prolonged and less toxicity
- Trials of other agents, including for squamous cell carcinoma



Chemotherapy then relapse



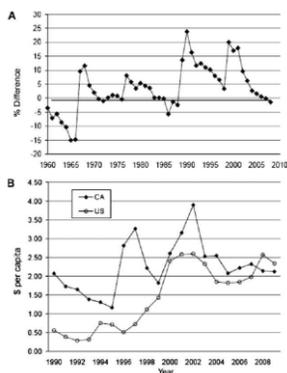
6 weeks of Tarceva – 36 month response

54 yo man, non-smoker, p/w large R pleural effusion due to mucinous AdenoCa

Early Palliative Care for Metastatic NSCLC – Temel et al NEJM 2010

- 151 patients with stage 4 NSCLC randomised to standard care or early palliative care plus standard care
- Almost all received some form of anti-cancer care (chemotherapy etc)
- Early palliative care group had:
 - ↑ QOL at 12 weeks
 - ↓ depression at 12 weeks
 - ↑ survival (11.6 vs 8.9 months, $p=0.2$)
- Increasing awareness of “whole body” issues, mindfulness, exercise, diet, meeting patients (and their families) needs
- Trials of early implementation of palliative care at RMH and PeterMac

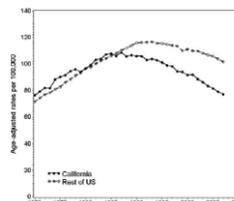
Tobacco Control by Government



Cost of tobacco, and expenditure on tobacco control, California and rest of USA



Smoking rates California and rest of USA



Lung cancer deaths California and rest of USA

Cancer Epidemiology, Biomarkers & Prevention

Forty Years of Faster Decline in Cigarette Smoking in California Explains Current Lower Lung Cancer Rates

Jiali F, Peiris H, Meier M, Mathis M, Wang, et al

Cancer Epidemiol Biomarkers Prev 2010;19:2001-2010. Published Online September 17, 2010.



Are these advances fully available to indigenous Australians?

Screening
New diagnostic tests
Multidisciplinary care and new treatments
Tobacco control

Maintaining Meaning in Life

- 1. Image of self
 - Self esteem, self worth, achievements, aspirations
- 2. Relationships with family, friends and society
- 3. Spirituality and belief systems
- 4. Attachment to nature

Archie Roach – The Journey

- **Warning signs**
 - First symptoms
 - Incentives to act
 - Who to see
- **Establishing the diagnosis**
 - Contact with the medical system (many tests)
 - Period of uncertainty
 - Receiving bad news
- **Initial treatment**
 - Hospital experience
 - Recovery and healing
- **Continuing to live**
 - Check-ups
 - Getting on with life

**Keeping control
(autonomy)**

Being supported

Staying well

Maintaining hope

Thank you for your attention



“Our lungs, our mob”