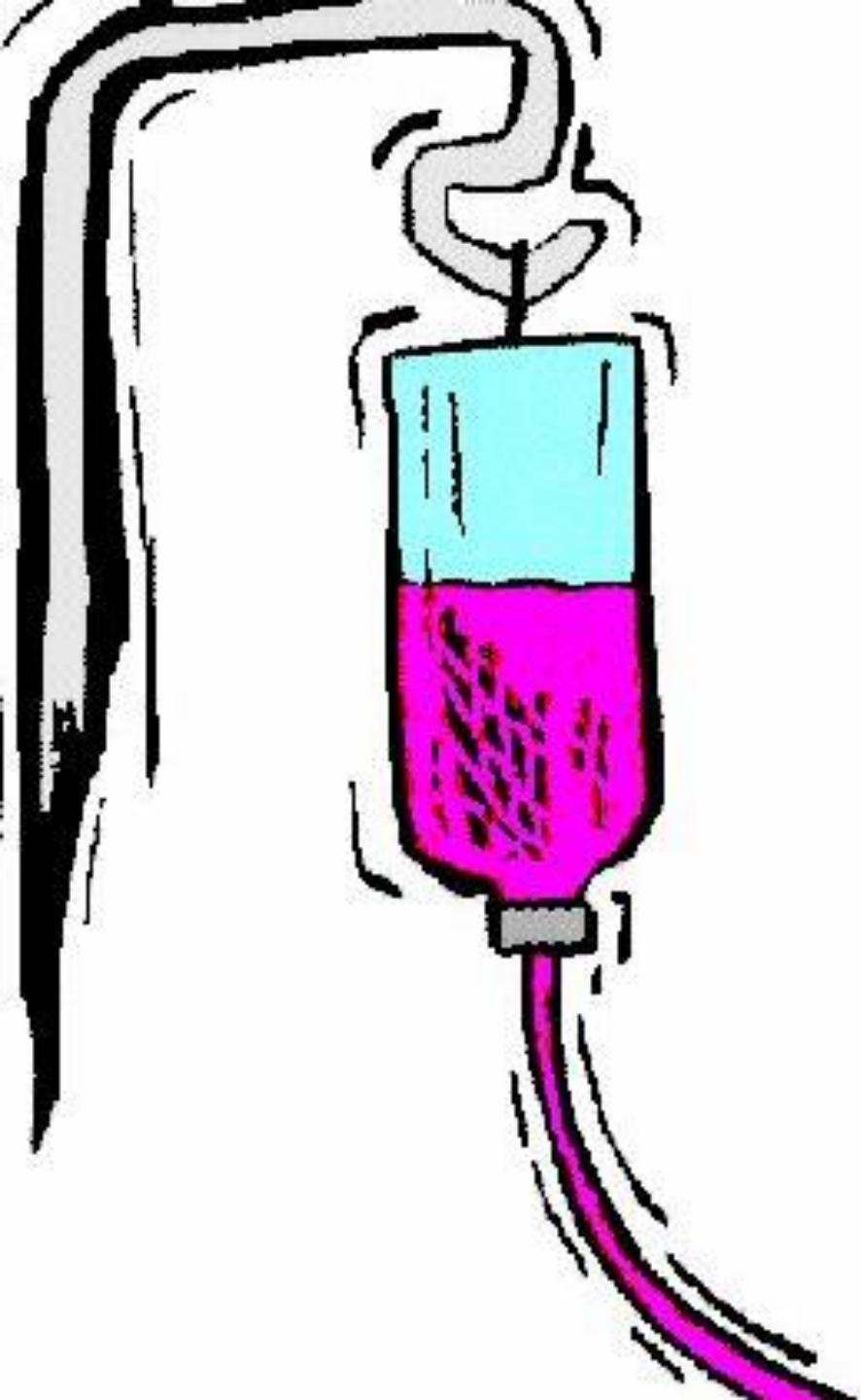


Managing Smoking and Lung Cancer Treatment: Clinical and Pharmacotherapy Implications



Samantha Bowyer
Medical Oncologist
SCGH





Medical Oncology Perspective

- Evidence supporting better prognostic outcomes in early stage lung cancer and secondary preventative benefit
 - Not our primary population
- Challenges to addressing smoking cessation in the clinic
 - Clinician factors: Lack of support, lack of knowledge & lack of time
 - Timing within the patient journey
 - Patients and relatives: Lack of perceived benefit “the damage is already done”, effects on QoL

Prognosis and treatment intent

ARTICLE

Lifetime Smoking History and Risk of Lung Cancer: Results From the Framingham Heart Study

Hilary A. Tindle, Meredith Stevenson Duncan, Robert A. Greevy, Ramachandran S. Vasani, Suman Kundu, Pierre P. Massion, Matthew S. Freiberg

See the Notes section for the full list of authors' affiliations.

Correspondence to: Hilary A. Tindle, MD, MPH, Vanderbilt University Medical Center, 2525 West End Ave, Suite 370, Nashville, TN 37203 (e-mail: hilary.tindle@vanderbilt.edu).

JNCI J Natl Cancer Inst (2018) 110(11): djy041

doi: 10.1093/jnci/djy041

Article

- Among heavy former smokers, lung cancer risk drops within five years since quitting (YSQ) relative to continuing smokers, yet it remains more than threefold higher than never smokers after 25 YSQ.
- 5 year survival rates
 - Stage I: 70 - 90%
 - Stage II: 50 – 60%
 - **Stage III: 25 – 30%**
 - **Stage IV: <10%**

Benefits of smoking cessation
in the advanced setting

**Fairly limited evidence in this
specific population**



ORAL08.03 - Smoking Cessation Before the Initiation of Chemotherapy in Metastatic NSCLC: Impact on Overall Survival (ID 1746)

11:07 - 11:18 | Author(s): S. Chiasson, M. Lelièvre, B. Fortin, J. Dionne

Abstract

Presentation

Slides

Background:

It is well documented that active smoking affects the overall mortality in lung cancer. Smoking cessation has been associated with better prognostic outcomes in patients with early stage non-small cell lung carcinoma (NSCLC) and limited stage small cell lung carcinoma (SCLC). Smoking cessation impact in advanced stage NSCLC is less well characterized. We studied the benefit of smoking cessation, before the initiation of chemotherapy, on overall survival (OS) in advanced NSCLC.

Methods:

We retrospectively reviewed the clinical data of 306 patients with stage IV SCLC and NSCLC between 2008 and 2014 in our centre. The 237 NSCLC patients treated with at least one cycle of chemotherapy are the subjects of this study. Smoking status and smoking cessation duration at the chemotherapy initiation time, number of packs/years, comorbidities, histology, sites of metastases, type and number of cycles of chemotherapy were all collected. Never-smokers were defined by a smoking history of < 100 cigarettes during their entire lifetime. Survival curves were calculated by the Kaplan-Meier method and compared using log-rank test. Cox proportional hazard models were used for multivariable analyses.

Results:

Smoking cessation before the initiation of chemotherapy is associated with a better median overall survival of 16 vs 10 months (p=0.007). This is even seen in heavy smokers of > 30 pq/year, with a median OS of 15 vs 8 months (p=0.008). The multivariable analysis confirms that active smoking is an independent negative factor on survival (51% increase in the risk of death) after adjustment for gender, heart or vascular disease, diabetes, high blood pressure, ECOG performance status, histology, site of metastases (brain, liver, adrenals, lungs and bones). Figure 1



Conclusion:

Smoking cessation, before the initiation of chemotherapy, is associated with a better overall survival in chemotherapy treated stage IV NSCLC patients, even in previously heavy smokers and after adjustments for comorbidities. This retrospective analysis demonstrates the possible magnitude of the effect of smoking cessation on treatment efficacy with a potential gain of 6 months in median overall survival. Efforts to encourage smoking cessation are likely beneficial even among this population of patients.

Median 6 month improvement in overall survival

Tobacco Cessation May Improve Lung Cancer Patient Survival

Katharine A. Dobson Amato, MPH^{1,2}, Andrew Hyland, PhD¹, Robert Reed, MPH¹, Martin C. Mahoney, MD, PhD^{1,2,3}, James Marshall, PhD¹, Gary Giovino, PhD³, Maansi Bansal-Travers, PhD¹, Heather M. Ochs-Balcom, PhD², Michael A. Zevon, PhD¹, K. Michael Cummings, PhD⁴, Chukwumere Nwogu, MD, PhD¹, Anurag K. Singh, MD¹, Hongbin Chen, MD, PhD¹, Graham W. Warren, MD, PhD^{4,5}, and Mary Reid, PhD¹

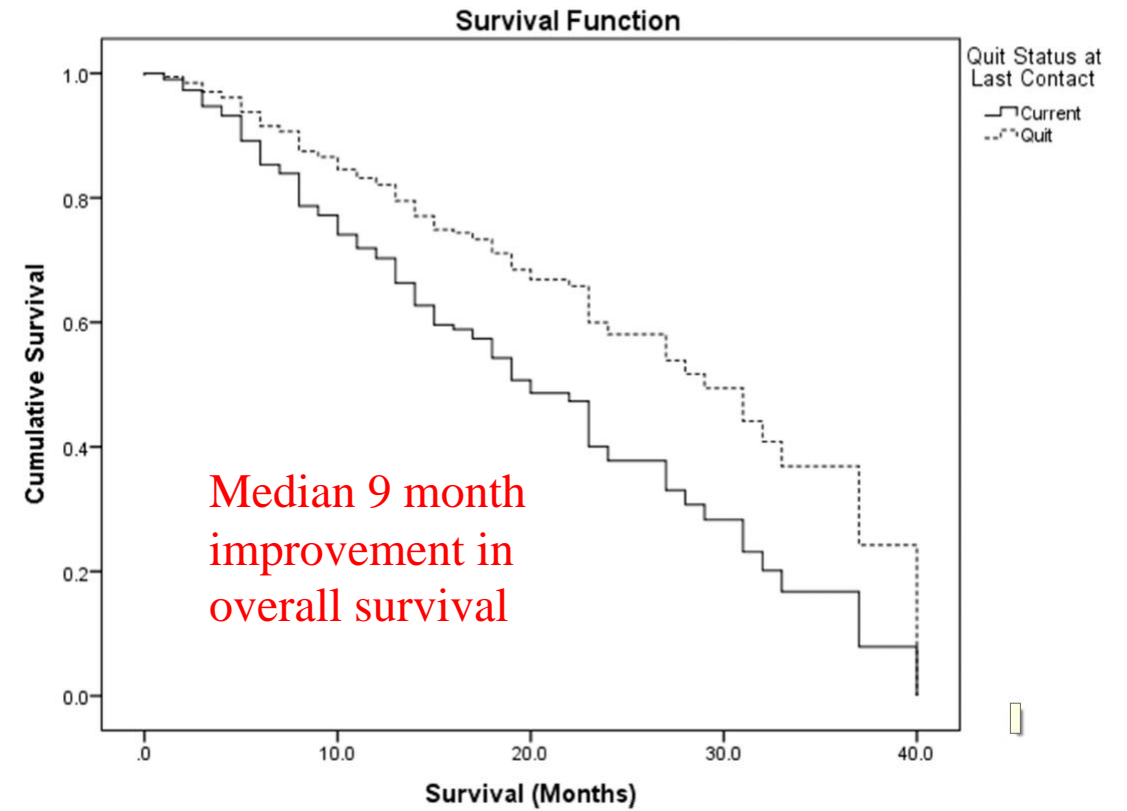
Adjusted hazard ratios for death among lung cancer patients contacted at least one time between October 2010 and October 2012 (n=224[†]).

Continuous variables	N	Mean	Hazard Ratio	95% CI	p-value
Age at diagnosis (years)	224	61.9	1.04	1.02-1.06	0.001*
Pack-years	224	59.7	1.00	0.99-1.01	0.495
Days between diagnosis and last contact	224	100.9	0.999	0.998-1.001	0.227
Categorical variables	N	%	Hazard Ratio	95% CI	p-value
Sex					
Female	134	59.8	1.00	Ref.	0.051
Male	90	40.2	1.45	1.01-2.14	
Clinical Stage					
Stage I/II	81	36.2	1.00	Ref.	<0.001*
Stage III	65	29.0	2.53	1.79-4.61	
Stage IV	78	34.8	8.72	4.93-15.40	
ECOG status					
0	127	56.7	1.00	Ref.	0.265
≥1	97	43.3	1.26	0.84-1.89	
Tumor histology					
NSCLC	197	87.9	1.00	Ref.	0.626
Other lung cancer	27	12.1	0.87	0.50-1.52	
Quit status at referral					
Quit	48	21.4	1.00	Ref.	0.393
Current	176	78.6	0.80	0.48-1.34	
Quit status at last contact					
Quit	95	42.4	1.00	Ref.	0.012*
Current	129	57.6	1.79	1.14-2.82	

Note: 115 of 224 (51.3%) patients were deceased by the end of the follow-up period. The model is adjusted for all variables shown in this table based upon a Cox proportional hazards model.

* Statistically significant at p<0.05.

[†]N=224/250 due to 22 records missing clinical stage, 2 missing pack-years and 2 missing both clinical stage and pack-years.



Controversy...

The benefits of smoking and immunotherapy

The NEW ENGLAND JOURNAL *of* MEDICINE

ORIGINAL ARTICLE

Nivolumab plus Ipilimumab in Lung Cancer with a High Tumor Mutational Burden

M.D. Hellmann, T.-E. Ciuleanu, A. Pluzanski, J.S. Lee, G.A. Otterson, C. Audigier-Valette, E. Minenza, H. Linardou, S. Burgers, P. Salman, H. Borghaei, S.S. Ramalingam, J. Brahmer, M. Reck, K.J. O'Byrne, W.J. Geese, G. Green, H. Chang, J. Szustakowski, P. Bhagavatheeswaran, D. Healey, Y. Fu, F. Nathan, and L. Paz-Ares

Smoking status — no. (%)

Current or former smoker	130 (93.5)	146 (91.2)
Never smoked	7 (5.0)	11 (6.9)
Unknown	2 (1.4)	3 (1.9)

This article was published on April 16, 2018, at NEJM.org.

Current practice in the lung cancer clinic at SCGH

- Probably deference to the Resp physicians and CNCs
 - FDA recommendations: 5 As (Ask, Advise, Assess, **Assist**, **Arrange**)
- CNC
 - Mandatory online training
 - Fagerstrom Assessment for Nicotine Dependence
 - Recommendation to seek assistance from GP
 - DoH webpage – getting ready to quit smoking



Risks of not addressing smoking cessation

- Optimising cure rates
- Improving survival outcomes
- Maximising resilience in a vulnerable population

