



Background

- Practice guidelines in non-small-cell lung cancer (NSCLC) list multiple therapy choices based on different levels of evidence but cannot account for variability in patient (pt)/tumor characteristics between individual pt cases
- To provide oncologists with expert guidance and feedback on choice of treatment for specific pt scenarios, in 2012 we implemented an **interactive Web-based decision support tool**, in which oncologist users input specific pt characteristics and selected among treatment options, then compared their selection with that of a NSCLC expert panel.^[1]
- Here we report data from **version 2.0** of this tool developed in 2014 with an international expert panel, capturing current treatment trends for advanced NSCLC and investigating the impact of this online tool on oncology practitioners

Study Components

- Online decision support tools developed in 2012 and 2014
 - Faculty (2012):** David R. Gandara, MD; Martin J. Edelman, MD; Giuseppe Giaccone, MD; Suresh S. Ramalingam, MD; and Howard "Jack" West, MD
 - Faculty (2014):** David R. Gandara, MD; Wilfried Eberhardt, MD; Tony Mok, MD; Nagahiro Saijo, MD, PhD; Giorgio V. Scagliotti, MD, PhD; and Yi-Long Wu, MD
- Each tool included **96 different NSCLC case variations** based on specific pt/tumor characteristics, including tumor histology, mutation status, age, performance status (PS), smoking history, and pt goals
- Users are prompted to enter pt/tumor characteristics and indicate their intended clinical approach
 - Recommendations from the experts are displayed
 - Users are asked whether the experts' recommendation confirmed or changed their intended clinical approach
- 2014 tool online at:**
<http://clinicaloptions.com/NSCLCTool2014>

Potential First-line and Maintenance Therapy Options Available in 2014 Tool

Targeted Therapy	Platinum Chemotherapy	Nonplatinum Chemotherapy
None	None	None
Afatinib	Carboplatin	Albumin-bound paclitaxel
Bevacizumab	Cisplatin	Docetaxel
Crizotinib	Unsure	Etoposide
Erlotinib		Gemcitabine
Gefitinib		Paclitaxel
Unsure		Pemetrexed
		Vinorelbine
		Unsure

Results

Tool Participant Demographics

- V1.0: 442 oncologists input 653 unique pt cases from March 2012 - July 2012
 - 88% practice outside the US
- V2.0: 218 oncologists input 344 unique pt cases from May 2014 - October 2014
 - 87% practice outside the US (30% Europe, 13% East Asia, 20% South/West Asia)

Characteristics of Pt Cases Entered by Oncologists

Case Characteristic	V1.0, n (%)	V2.0, n (%)
Tumor histology		
▪ Nonsquamous	483 (74)	233 (68)
▪ Squamous	170 (26)	111 (32)
Mutational status		
▪ EGFR+/ALK-	204 (31)	78 (23)
▪ EGFR-/ALK+	62 (9)	31 (9)
▪ EGFR-/ALK-	387 (59)	235 (68)
Age		
▪ < 70 yrs	519 (79)	275 (80)
▪ ≥ 70 yrs	134 (21)	69 (20)
Zubrod PS		
▪ 0/1	562 (86)	291 (85)
▪ 2	91 (14)	53 (15)
Smoking history		
▪ No/former light	281 (43)	141 (41)
▪ Former heavy/current	372 (57)	203 (59)
Pt goal		
▪ Improved RR, survival	486 (76)	265 (77)
▪ Better quality of life	167 (24)	79 (23)

NSCLC Tool Screenshots (Examples)

Patient Disease and Characteristics

Tumor Histology: Nonsquamous

Mutational Status: EGFR and ALK Negative

What are the primary outcomes that the patient desires?: Response and survival

Patient Age: Younger than 70 years of age

Zubrod ECOG Performance Score: 0, 1

Smoking History: Former heavy smoker/current smoker

Are you planning to treat this patient? Treatment Regimen: First-line Therapy

Next

Expert Insight

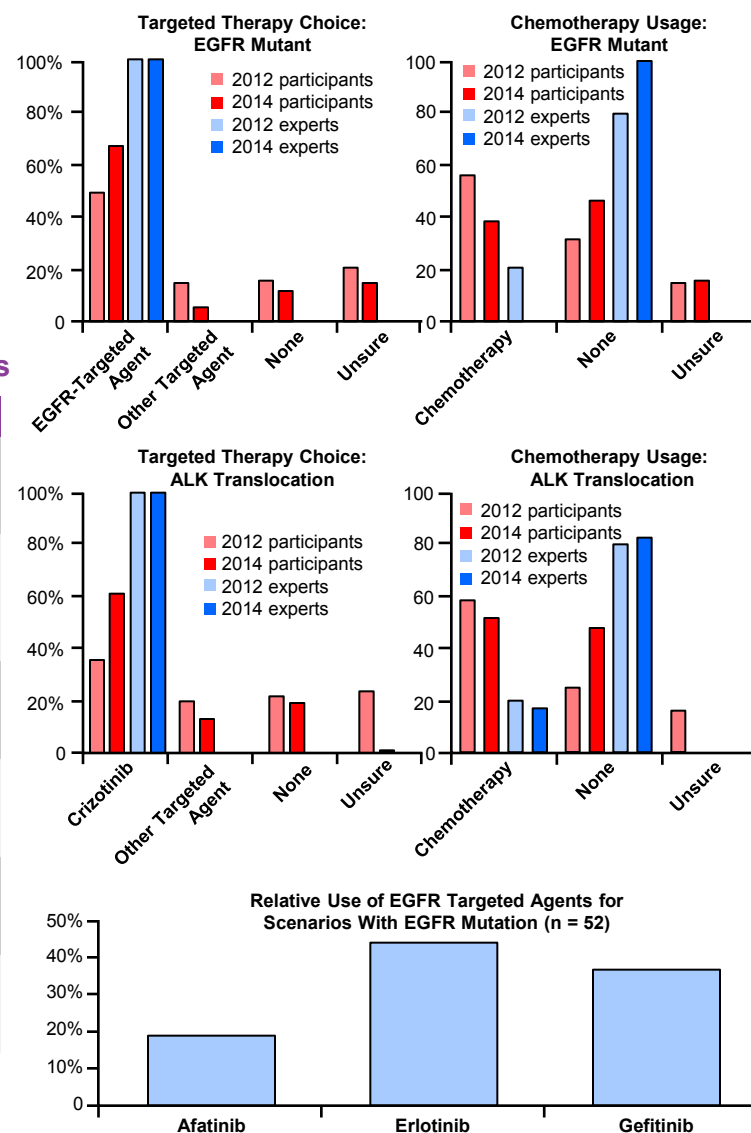
Patient Disease and Characteristics	First-line	Maintenance
Expert - Italy	Cisplatin + Pemetrexed	Pemetrexed
Expert - Germany	Cisplatin + Paclitaxel	Pemetrexed
Expert - USA	Bevacizumab + Cisplatin + Paclitaxel	Bevacizumab
Expert - Japan	Cisplatin + Pemetrexed	Pemetrexed
Expert - Hong Kong	Bevacizumab + Cisplatin + Paclitaxel	Pemetrexed + Bevacizumab
Expert - China	Carboplatin + Pemetrexed	Pemetrexed

Next

Entry of Pt Characteristics

Expert Recommendations

First-line Therapy for NSCLC Case Scenarios With EGFR Mutations or ALK Translocations

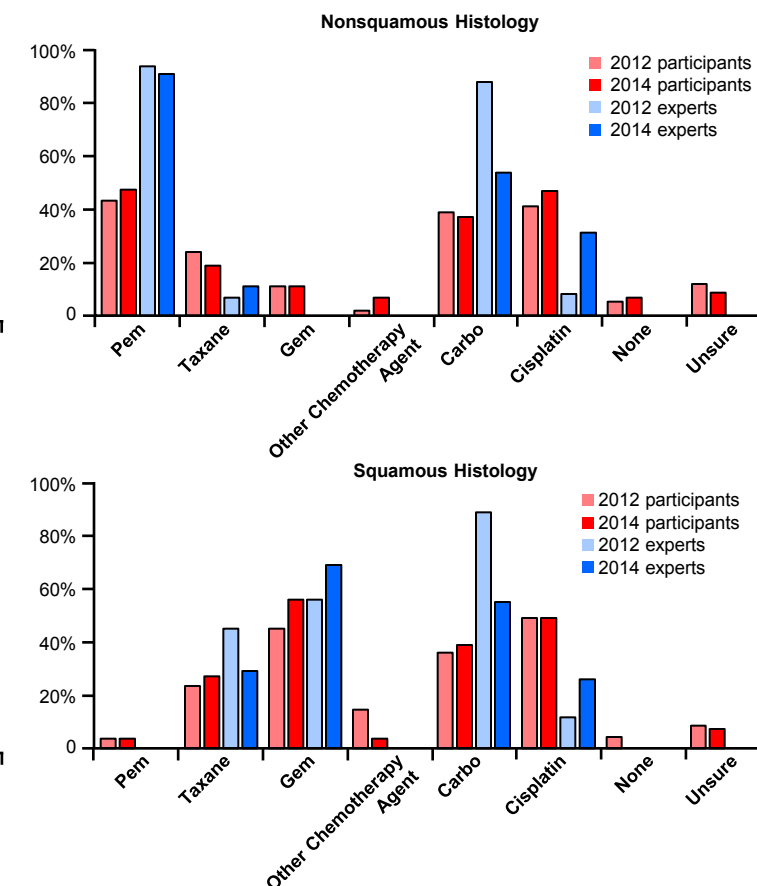


Participant Responses: Did This Tool Affect (Change) Your Treatment Choice?

- Optional question; presented after users viewed the experts' treatment recommendation
- Answered for 182 of 344 eligible cases (53%)

Impact (n = 182)	Overall, n (%)
Changed my treatment plan to agree with the expert recommendations	28 (15)
Confirmed my treatment plan (I agree with the expert recommendations)	130 (71)
I disagree with the expert recommendations	10 (5.5)
There are barriers to implementing the expert recommendations	14 (8)

Choice of First-line Chemotherapy for NSCLC Case Scenarios Without Actionable Mutations



Conclusions

- Expert consensus recommendations were largely unchanged from 2012 to 2014, and there was a high degree of concordance
- More oncologist users chose targeted agents as first-line therapy for EGFR mutations and ALK translocations in 2014
- Users' treatment approach was confirmed in 71% of cases where this optional question was answered
 - Viewing the expert insights led to a planned treatment change in 15% of cases
- Users of V2.0 disclosed that barriers were present in their practices implementing expert recommendations in 8% of cases
- Online tools that provide customized, pt-specific expert advice may aid decision making for clinicians managing pts with advanced NSCLC, serve an educational purpose, and capture practice trends

Reference

1. Chow H, Edelman MJ, Giaccone G, et al. J Thorac Oncol. 2015;[Epub ahead of print].

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