

Use of adjuvant chemotherapy (CT) and radiotherapy (RT) in incompletely resected (R1) early stage Non-Small Cell Lung Cancer (NSCLC): a European survey conducted by the European Society for Medical Oncology (ESMO) Young Oncologists Committee.

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Background

Early stage NSCLC is potentially curable with radical surgery. Cisplatin-based adjuvant CT improves survival and is recommended in the ESMO guidelines for stage II-III completely resected NSCLC. There is limited evidence to guide the use of adjuvant CT and RT in incompletely resected (R1) early stage NSCLC.

Design and objective

A European survey of oncologists treating lung cancer was conducted to evaluate the use of adjuvant CT and RT for R1-resected NSCLC and to identify factors influencing treatment decisions. Demographics were collected and outcomes such as clinical stage, regimens, cycles planned, radiotherapy site, multidisciplinary management and discussion about inconclusive evidence with the patient were analyzed. Logistic regression model was used to detect statistical association and to estimate Odds Ratio; Cochrane-Armitage test was used to detect trend.

Results

Country	N	%	Country	N	%
ITALY	138	18.0	SLOVENIA	6	0.8
UNITED KINGDOM	71	9.2	NORWAY	5	0.7
SPAIN	60	7.8	SWEDEN	5	0.7
FRANCE	59	7.7	ISRAEL	5	0.7
GERMANY	58	7.6	ALBANIA	4	0.5
TURKEY	44	5.7	CYPRUS	4	0.5
GREECE	43	5.6	SLOVAKIA	4	0.5
AUSTRIA	38	4.9	IRELAND	4	0.5
RUSSIAN FEDERATION	25	3.3	UKRAINE	4	0.5
BELGIUM	25	3.3	ESTONIA	3	0.4
ROMANIA	24	3.1	LATVIA	3	0.4
CZECH REPUBLIC	16	2.1	FINLAND	3	0.4
BULGARIA	16	2.1	BOSNIA AND HERZEGOVINA	2	0.3
PORTUGAL	16	2.1	BELARUS	2	0.3
HUNGARY	14	1.8	LUXEMBOURG	2	0.3
POLAND	12	1.6	LITHUANIA	1	0.1
DENMARK	12	1.6	ICELAND	1	0.1
SERBIA	11	1.4	CROATIA	1	0.1
NETHERLANDS	9	1.2	MACEDONIA	1	0.1
SWITZERLAND	8	1.0	MONTENEGRO	1	0.1
GEORGIA	8	1.0			

Between January and April 2012, 768 surveys were collected from 41 European countries (Table 1). The majority (82.9%) of participants are medical oncologists, about a half are ESMO members and more than one-third are based in a University Hospital (Demographics are summarized in Table 2).

Are you an ESMO Member?	N	%	Are you active in clinical research?	N	%
Yes	378	49.3	Yes	623	81.4
No	388	50.7	No	142	18.6
Missing data	2	0.3	Missing data	3	0.4
Gender			Which percentage of your patients has lung cancer?		
Male	458	59.8	<25%	257	33.6
Female	308	40.2	25-50%	240	31.3
Missing data	2	0.3	51-75%	121	15.8
Type of Institution			76-100%	148	19.3
University Hospital	285	37.1	Missing data	2	0.3
Cancer Center			How frequently do you consult ESMO Clinical Practice Guidelines?		
	228	29.3	Once a week	95	12.7
General Hospital	210	27.3	Once a month	203	27.2
Private Center	45	5.9	Once every two months	62	8.3
Specialty			Occasionally	318	42.6
Medical Oncology	637	82.9	Never	69	9.2
Radiation Oncology	131	17.1	Missing data	21	2.7
Years practising specialty					
	N	%			
0-5	200	26.1			
5<-10	184	24.0			
10<-15	133	17.3			
>15	250	32.6			
Missing data	1	0.1			

Multiple choice was allowed for different questions on prescription of adjuvant CT (Table 3) and adjuvant RT (Table 4). Adjuvant CT is prescribed by 91.4% of participants with wide variation according to stage. Most commonly chosen regimens are: Cisplatin/Vinorelbine (81.2%) and Cisplatin/Carboplatin (42.9%). Notably 13% and 44% of respondents prescribe adjuvant chemo for stage IA and IB, respectively. Furthermore, carboplatin-based doublets are largely used and, despite no indication in this setting, pemetrexed-based doublets are chosen by 17-26% of participants.

Do you prescribe chemotherapy?	N	%	Other regimens	N	%
Yes	702	91.4	Cisplatin/Etoposide	26	3.9
No	66	8.6	Carboplatin/Etoposide	5	0.7
If YES, Stage			Bevacizumab, erlotinib, gefitinib, platinum doublet/bevacizumab, etoposide, carboplatin, Vinorelbine, oxaliplatin/irinotecan, cisplatin/irinotecan, cisplatin/irinotecan/irinotecan, cisplatin/irinotecan/irinotecan	18	2.7
IA	90	13.3	Missing data	540	84.8
IB	303	44.8	Regimen	97	15.2
IIA	567	83.9	Cisplatin/Vinorelbine	547	81.2
IIIB	612	90.5	Cisplatin/Carboplatin	289	42.9
IIIA	639	94.5	Missing data	65	9.3
Missing data	26	3.7	Yes	545	87.1
Regimen			No	81	12.9
Cisplatin/Vinorelbine	547	81.2	Missing data	76	10.8
Cisplatin/Carboplatin	289	42.9	Number of cycles planned		
Cisplatin/Docetaxel	144	21.4	1-3 cycles	50	7.5
Cisplatin/Paclitaxel	95	14.1	4 cycles	524	78.1
Cisplatin/Pemetrexed	178	26.4	Missing data	97	14.5
Carboplatin/Vinorelbine	213	31.6	Missing data	31	4.4
Carboplatin/Docetaxel	180	26.7	Missing data	28	4.0
Carboplatin/Paclitaxel	209	31.0	Missing data		
Carboplatin/Pemetrexed	116	17.2	Missing data		
Missing Data	28	4.0	Missing data		
			Yes	578	85.5
			No	98	14.5
			Missing data	26	3.7

Multidisciplinary discussion happens very frequently and lack of clinical evidence is discussed with the patient by 85% of physicians. About a half of respondents prescribe adjuvant RT and notably the majority (85%) suggest its use also for pN2 disease despite this is not recommended by ESMO guidelines neither for completely resected tumors. Univariate analysis showed that prescription of CT was associated with Medical Oncology specialty and ESMO membership (p<0.001 for both), activity in clinical research (p=0.002) and increased frequency of consultation of ESMO guidelines (p for trend <0.001). Prescription of RT was associated with Radiation Oncology specialty (p<0.001), years practicing specialty (p for trend = 0.001) and increased workload (p for trend = 0.027).

Do you prescribe radiotherapy?	N	%	Radiotherapy for surgical bed	N	%
Yes	359	48.3	Yes	289	84.8
No	384	51.7	No	52	15.2
Missing data	25	3.3	Missing data	18	5.0
Regimen			Regimen		
50 Gy in 20 Fx	64	23.4	50 Gy in 20 Fx	65	24.1
54 Gy in 27-30 Fx	81	29.6	54 Gy in 27-30 Fx	92	34.1
60 Gy in 30 Fx	125	45.6	60 Gy in 30 Fx	95	35.2
52.5 Gy in 20 Fx	10	3.6	52.5 Gy in 20 Fx	6	2.2
Missing data	17	5.8	Missing data	19	6.6
Other regimens	40	14.6	Other regimens	52	19.3
OVERALL			OVERALL		
55 Gy in 20 Fx	10	3.6	50 Gy in 25 Fx	13	4.8
66 Gy in 33 Fx	8	2.9	66 Gy in 33 Fx	4	1.5
Other	22	8.1	Other	35	13

Percentages are relative to respondents with not-missing data; Fx: Fractions

Conclusions

This European survey indicates that adjuvant CT and RT for incompletely resected (R1) NSCLC are commonly used in clinical practice despite limited clinical evidence. There is a high level of variability in the chemotherapy regimens prescribed and in the dose of radiotherapy delivered both to the surgical bed and for pN2 disease. Prospective clinical trials for R1-resected NSCLC are necessary to clarify optimal management.

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