



The TYROL Study SCLC Project: retrospective analysis of clinical features and therapeutic outcome in 484 small cell lung cancer patients diagnosed 1991 – 2011



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Introduction

To achieve respective results with long time follow up and to depict cohorts with long term survival, we analyzed consecutive SCLC cases treated in Innsbruck/Natters CCC.

Patients and Methods

We retrospectively analyzed all patients with SCLC aiming at describing this disease and treatments applied in consecutive lines in most possible detail.

Results – Patients Characteristics

Of 484 patients, 326 (67%) were male, further characteristics, see **Table 1**. Symptoms at initial diagnosis: hemoptysis 44/293 (15%), cough 165/299 (55%); dyspnoea 153/302 (51%); tumor pain 135/305 (44%); neurologic symptoms (incl. paraneoplasia) 69/314 (22%); hyponatremia (≤ 130 mmol/l)/SIADH 47/339 (14%); prior/present other malignancy 86/436 (20%).

Characteristics	N ^a	%
Male	326	67.4
Median age (range), years	62.1 (33.0 – 88.2)	
Localisation of primary, n = 482 ^a		
Right upper lobe	105	21.8
Right intermediate lobe	29	5.9
Right lower lobe	57	11.8
Right main bronchus	57	11.8
Left upper lobe	109	22.6
Left lower lobe	95	19.7
Left main bronchus	42	8.7
Central/Carinal	26	5.4
Localization undefined (multiple lesions)	3	0.6
Stage TNM, n = 450		
I	25	5.2
II	21	4.4
IIIA	46	9.8
IIIB	118	24.6
IV	270	56.3
Modified VALSG stage (IASLC 1989), n = 483		
Limited disease	214	44.3
Extensive disease	269	55.7
Performance status (WHO grade), n = 303		
0 – 1	203	67.0
2	85	28.1
3	15	5.0
Smoking, n = 323		
Present smoker	277	85.8
Former smoker (>2 years before diagnosis)	39	12.1
Never smoker	7	2.2
Abnormal laboratory values		
Anemia (Hb <120 g/L)	59/336	17.5
Leukocytosis (≥ 15 G/L)	25/332	7.5
LDH elevation (≥ 240 U/L)	129/297	43.4
C-reactive protein elevated (>1 mg/dL)	158/302	52.3
Hyponatremia (Na ≤ 130 mmol/L)	47/339	13.9

Table 1: Patients characteristics at primary diagnosis

Characteristic	Response according RECIST after completion of 1 st line palliative therapy					
	No. pts	CR	PR	PD	Not eval.	P value
All	411	72 (17.5)	161 (39.2)	127 (30.9)	51 (12.4)	233 (56.7)
Sex						0.121
Male	274	42 (15.3)	106 (38.7)	88 (32.1)	38 (13.9)	148 (54.0)
Female	37	30 (21.9)	55 (40.1)	39 (28.8)	13 (9.5)	63 (62.0)
Age						0.168
<70 years	315	64 (20.3)	119 (37.8)	103 (32.7)	29 (9.2)	183 (58.1)
≥ 70 years	92	8 (8.7)	38 (41.3)	24 (26.1)	22 (23.9)	48 (50.5)
LD, ED stage***						<0.001
LD	183	61 (33.3)	69 (37.7)	40 (21.9)	13 (7.1)	130 (71.0)
ED	228	11 (4.8)	62 (40.4)	87 (38.2)	38 (16.7)	103 (45.2)
Performance state						0.005
ECOG 0-1	185	42 (22.7)	76 (41.1)	54 (29.2)	13 (7.0)	118 (63.8)
ECOG 2	67	10 (14.9)	23 (34.3)	18 (26.6)	16 (23.9)	33 (49.3)
ECOG 3-4	10	0 (0.0)	2 (20.0)	3 (30.0)	5 (50.0)	2 (20.0)
Hyponatremia						0.368
None	280	50 (17.9)	110 (39.3)	85 (30.4)	35 (12.5)	160 (57.1)
≤ 125 mmol/L	23	6 (26.1)	5 (21.7)	7 (30.4)	5 (21.7)	11 (47.8)
LDH						<0.001
Normal	148	43 (29.1)	60 (40.5)	32 (21.6)	13 (8.8)	103 (69.6)
Elevated	111	7 (6.3)	42 (37.8)	41 (36.9)	21 (18.9)	49 (44.1)
Natrum						0.101
Normal	116	26 (24.6)	48 (40.7)	27 (22.9)	14 (11.9)	77 (65.3)
Elevated	143	20 (14.0)	59 (41.3)	45 (31.5)	19 (13.3)	79 (55.2)
CRP						0.619
Normal	239	45 (18.8)	96 (40.2)	68 (28.5)	30 (12.6)	141 (59.0)
Decreased (<12)	56	12 (21.4)	19 (33.9)	19 (33.9)	6 (10.7)	31 (55.4)
Therapy (LD)						0.002
Chemo	63	14 (22.2)	22 (34.9)	16 (25.4)	11 (17.4)	38 (57.1)
Radiochemo	119	47 (39.5)	47 (39.5)	23 (19.3)	2 (1.7)	94 (79.0)
Radiochemo (LD)						0.489
Concomitant	25	8 (32.0)	13 (52.0)	3 (12.0)	1 (4.0)	21 (84.0)
Sequential	94	39 (41.5)	34 (36.2)	20 (21.3)	1 (1.1)	73 (77.7)
Chemother (ED)						0.820
Evans	105	7 (6.7)	45 (42.9)	46 (43.8)	7 (6.7)	52 (49.5)
Platin/Etoposide	84	2 (2.4)	41 (48.8)	26 (29.6)	16 (19.0)	40 (51.2)

Table 2: Response to palliative therapy

Characteristics	No. of patients	Median PFS, Months	P value	Median OS, months	P value
All patients	416	6.9		11.4	—
Gender					
Male	277	6.5	0.021	11.2	0.139
Female	138	7.6		13.1	
Age					
<70 ys	323	6.9	0.047	12.6	<0.001
≥ 70 ys	92	5.7		9.2	
Stage VALSG ¹					
Limited	183	9.7	<0.001	17.2	<0.001
Extensive	232	5.3		9.4	
Performance ECOG					
0-1	187	7.6	<0.001	14.2	<0.001
2	68	6.1		9.5	
3-4	10	0.8		0.8	
Haemoglobin					
≥ 12 g/dL	240	6.9	0.767	11.9	0.383
<12 g/dL	59	6.4		9.9	
CRP					
<1 mg/dL	119	7.6	0.007	14.2	0.008
≥ 1 mg/dL	145	6.1		10.2	
LDH					
Normal	150	7.8	<0.001	15.4	<0.001
Elevated	112	5.1		8.4	
Natrum					
≤ 125 mval	24	6.8	0.074	11.8	0.218
>125 mval	281	6.0		9.7	
Therapy (LD)					
Chemo	64	6.6	<0.001	10.4	<0.001
Radiochemo	118	11.3		20.5	
Radiochemo (LD)					
Concomitant	24	11.2	0.859	22.3	0.963
Sequential	94	11.3		20.5	
Chemother (ED)					
Evans	108	5.8	0.367	9.9	0.771
Platin/Etoposide	85	5.7		9.8	
Response					
CR	72	21.7	<0.001	39.3	<0.001
PR	157	8.2		14.1	
PD	127	4.2		8.5	
Interruption	20	2.3		2.5	
Death on therapy	31	0.9		0.9	

Table 3: PFS and OS after start of palliative therapy

Therapy line	N patients	N therapy cycles	ORR %	PFS months	OS months
1 st	423	6	57	6.9	11.4
2 nd	208	3	24	2.6	5.7
3 rd	93	2	15	2	4.3
4 th	26	3.5	12	2.5	5.3
5 th	9	3	11	2.5	4.1

Table 4: Therapy results in higher lines of palliative therapy

Results – Response

27 patients (6%) did not receive any treatment. In the 411 evaluable patients with palliative therapy, overall response was 57% (**Table 2**); however, best response (at any time during treatment) was 78%. ORR was dependent on patients' characteristics (**Table 2**).

Results - Survival

Median PFS from start of palliative therapy, evaluable in 415 patients, was 6.9 months (detailed in **Table 3**). Median OS from start of palliative therapy was 11.3 months: more interestingly, there is plateau of long term survivors (5-ys survival 9.3%), mainly attributable to radiochemotherapy in limited disease (n = 118, median OS 20.5 months, 5-ys survival 22%). Therapy results in higher lines of palliative therapy are presented in **Table 4**.

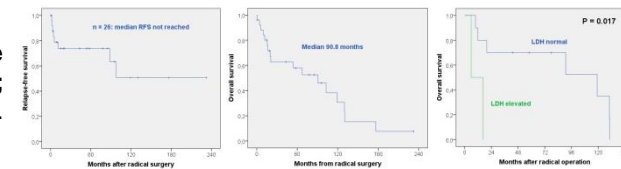


Figure 1: RFS and OS after radical operation (n = 26)

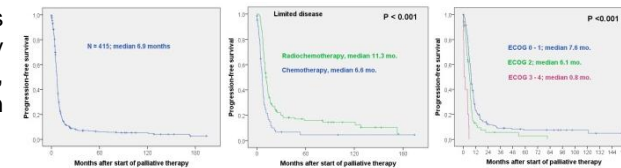


Figure 2: PFS after start of palliative therapy (including radio-chemotherapy)

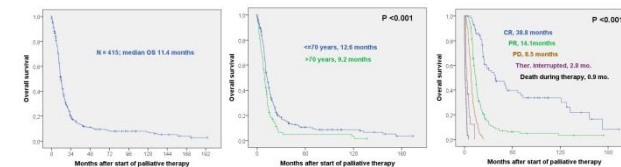


Figure 3: OS after start of palliative therapy (including radio-chemotherapy)

Conclusion

There are patients with a chance of long term survival, even cure. We are working on the establishment of diagnostic and therapeutic algorithms for an optimized management in this unfavourable disease.