

Table 1. Univariate analysis of factors affecting the overall occurrence of toxicities

Variable	With toxicities (n=484)	Without toxicities (n=438)	Total (n=922)	χ^2 value	P- value
	N (constituent ratio)	N (constituent ratio)	N (constituent ratio)		
<i>Gender</i>				0.441	0.507
Male	288 (59.5%)	270 (61.6%)	558 (60.5%)		
Female	196 (40.5%)	168 (38.4%)	364 (39.5%)		
<i>Age</i>				2.046	0.563
<18	32 (6.6%)	24 (5.5%)	56 (6.1%)		
18-39	134 (27.7%)	109 (24.9%)	243 (26.4%)		
40-59	233 (48.1%)	217 (49.5%)	450 (48.8%)		
>59	85 (17.6%)	88 (20.1%)	173 (18.8%)		
<i>KPS scale</i>				1.781	0.776
100	27 (5.6%)	30 (6.8%)	57 (6.2%)		
90	250 (51.7%)	235 (53.7%)	485 (52.6%)		
80	138 (28.5%)	118 (26.9%)	256 (27.7%)		
70	47 (9.7%)	40 (9.1%)	87 (9.4%)		
≤60	22 (4.5%)	15 (3.4%)	37 (4.0%)		
<i>Drug manufacturer</i>				0.088	0.766
Domestic	372 (76.9%)	333 (76.0%)	705 (76.5%)		
Import	112 (23.1%)	105 (24.0%)	217 (23.5%)		
<i>Radiotherapy</i>				9.117	0.003
Yes	323 (66.7%)	250 (57.1%)	573 (62.1%)		
No	161 (33.3%)	188 (42.9%)	349 (37.9%)		
<i>Chemotherapy cycle</i>				39.599	<0.001
1	210 (43.4%)	268 (61.2%)	478 (51.8%)		
2	81 (16.7%)	69 (15.8%)	150 (16.3%)		
3	48 (9.9%)	31 (7.1%)	79 (8.6%)		
4	39 (8.1%)	24 (5.5%)	63 (6.8%)		
5	27 (5.6%)	11 (2.5%)	38 (4.1%)		

6	35 (7.2%)	22 (5.0%)	57 (6.2%)	
7	21 (4.3%)	6 (1.2%)	27 (2.9%)	
8 or more	23 (4.8%)	7 (1.6%)	30 (3.3%)	
<i>Chemotherapy regimen</i>				32.858 <0.001
Concurrent chemoradiotherapy with adjuvant chemotherapy	284 (58.7%)	226 (51.6%)	510 (55.3%)	
Mono-chemotherapy	73 (15.1%)	118 (26.9%)	191 (20.7%)	
Combined chemotherapy	50 (10.3%)	58 (13.2%)	108 (11.7%)	
Complex chemotherapy regimen	55 (11.4%)	20 (4.6%)	75 (8.1%)	
Only as adjuvant chemotherapy after radiotherapy	22 (4.5%)	16 (3.7%)	38 (4.1%)	
<i>Clinical diagnosis</i>				8.652 0.124
Glioma	304 (62.8%)	256 (58.4%)	560 (60.7%)	
Lung cancer	39 (8.1%)	38 (8.7%)	77 (8.4%)	
Melanoma	35 (7.2%)	28 (6.4%)	63 (6.8%)	
Lymphoma	26 (5.4%)	17 (3.9%)	43 (4.7%)	
Neuroendocrine carcinoma	13 (2.7%)	25 (5.7%)	38 (4.1%)	
Others	67 (13.8%)	74 (16.9%)	141 (15.3%)	
<i>Clinical stage</i>				14.420 <0.001
Stage 1-2	123 (25.4%)	162 (37.0%)	285 (30.9%)	
Stage 3-4	361 (74.6%)	276 (63.0%)	637 (69.1%)	

KPS: Karnofsky Performance Status

Table 2. Different chemotherapy regimens and the associated toxicities

Temozolomide regimen	Number of patients(n=922)	Number of patients with toxicities (n=484)	Case of hematological system toxicity (n=275)	Case of Gastrointestinal system toxicity (n=195)	Case of liver function toxicity (n=139)	Case of other toxicity (n=178)	Total toxicity case (n=787)
	N (constituent ratio)	N (constituent ratio)	N (constituent ratio)	N (constituent ratio)	N (constituent ratio)	N (constituent ratio)	N (constituent ratio)
Concurrent chemoradiotherapy with adjuvant chemotherapy	510(55.3%)	284(58.7%)	174(63.3%)	78(40.0%)	98(70.5%)	86(48.3%)	435(55.3%)
Mono-chemotherapy	191(20.7%)	73(15.1%)	28(10.2%)	57(29.2%)	8(5.8%)	41(23.0%)	134(17.0%)
Combined chemotherapy	108(11.7%)	50(10.3%)	25(9.1%)	27(13.8%)	13(9.4%)	22(12.4%)	87(11.1%)
Complex chemotherapy regimen	75(8.1%)	55(11.4%)	34(12.4%)	22(11.3%)	15(10.8%)	17(9.6%)	88(11.2%)
Adjuvant chemotherapy after radiotherapy	38(4.1%)	22(4.5%)	14(5.1%)	11(5.6%)	5(3.6%)	12(6.7%)	42(5.3%)

Table 3. Occurrence of toxicities in combined temozolomide chemotherapy

Combined drug	Number of patients	Number of patients with toxicities	Rate of occurrence (%)
Capecitabine	58	15	25.9
Cisplatin	43	30	69.8

Bevacizumab	28	11	39.3
Irinotecan	22	17	77.2
Rituximab	20	15	75.0
Methotrexate	17	12	70.6
Recombinant Human			
Endostatin	17	12	70.6
Pemetrexed	10	8	80.0

Table 4. Occurrence of toxicities at different clinical tumor stages

Clinical diagnosis	Clinical stage 1-2			Clinical stage 3-4		
	With toxicity	Without toxicity	Rate of toxicity (%)	With toxicity	Without toxicity	Rate of toxicity (%)
Glioma	92	100	47.9	286	82	77.7
Lung cancer	1	2	33.3	38	36	51.3
Melanoma	4	9	30.8	31	19	62.0
Lymphoma	7	8	46.7	19	9	67.9
Neuroendocrine		2				

carcinoma	1		33.3	12	23	34.3
Other	18	41	30.5	49	33	59.8

Table 5. Severity of toxicity

Types of toxicity	Grade 1-2 (n=726)	Grade 3 and above(n=61)	Total (n=787)
	N (constituent ratio)	N (constituent ratio)	N (constituent ratio)
Hematological system	249(34.3%)	26(42.6%)	275(34.9%)
Gastrointestinal system	188(25.9%)	7(11.5%)	195(24.8%)
Liver function	134(18.5%)	5(8.2%)	139(17.7%)
Other	155(21.3%)	23(37.7%)	178(22.6%)

Table 6. Multivariate analysis of factors affecting the overall occurrence of toxicities

Variable	B	Standard error	Wald	Significance	OR (95% CI)
<i>Gender</i>					

Female	0.137	0.144	0.901	0.343	1.147 (0.864-1.521)
Male					Ref (1.00)
<i>Age</i>					
<18	0.279	0.338	0.683	0.409	1.322 (0.682-2.563)
18-39	0.275	0.222	1.544	0.214	1.317 (0.853-2.033)
40-59	0.062	0.191	0.107	0.744	1.064 (0.732-1.549)
>59					Ref (1.00)
<i>Clinical diagnosis</i>					
Lung cancer	1.000	0.459	4.740	0.029	2.718 (1.105-6.688)
Melanoma	1.135	0.469	5.867	0.015	3.112 (1.242-7.800)
Glioma	0.799	0.427	3.508	0.061	2.224 (0.964-5.135)

Lymphoma	0.894	0.529	2.859	0.091	2.444 (0.867-6.886)
Others	0.789	0.440	3.216	0.073	2.201 (0.929-5.211)
Neuroendocrine carcinoma					Ref (1.00)

Chemotherapy regimen

Complex chemotherapy regimen	1.400	0.398	12.388	<0.001	4.057 (1.860-8.849)
Only as adjuvant chemotherapy after radiotherapy	1.080	0.677	2.5441	0.111	2.944 (0.781-11.094)
Combined chemotherapy	0.423	0.279	2.301	0.129	1.526 (0.884-2.635)
Concurrent chemoradiotherapy with adjuvant chemotherapy	1.214	0.596	4.153	0.042	3.366 (1.047-10.818)
Mono-chemotherapy					Ref (1.00)

Chemotherapy cycle

2	0.407	0.199	4.160	0.041	1.502 (1.016-2.221)
3	0.702	0.259	7.350	0.007	2.019 (1.215-3.354)

4	0.605	0.296	4.177	0.041	1.831 (1.025-3.271)
5	1.128	0.387	8.508	0.004	3.091 (1.448-6.597)
6	0.582	0.309	3.557	0.059	1.790 (0.977-3.278)
7	1.215	0.483	6.328	0.012	3.370 (1.308-8.685)
8 or more	1.396	0.465	8.992	0.002	4.038 (1.622-10.055)

1 Ref (1.00)

Radiotherapy

Yes	0.376	0.568	0.438	0.508	1.456 (0.478-4.432)
No					Ref (1.00)

Clinical stage

Stage 1-2	-	0.157	13.844	<0.001	0.557 (0.409-0.758)
Stage 3-4	0.586				Ref (1.00)

OR: odds-ratio, CI: confidence-interval

