

Supplementary material has been published as submitted. It has not been copyedited, or typeset by Acta Oncologica

**Supplementary table 1:** Characteristics of patients with glioma WHO grade 2 and 3.

	WHO2				WHO 3			
	Total n = 230	No VTE n = 218	VTE n = 12	p Value	Total n = 317	No VTE n = 297	VTE n = 20	p Value
<b>Age at diagnosis (median, range)</b>	43 (18-87)	43 (18-87)	50 (31-73)	0.23	48 (18-83)	47 (18-83)	59 (30-78)	<b>0.009</b>
<b>Age groups</b>				0.37				0.13
<b>18-40</b>	91 (40%)	87 (40%)	4 (33%)		114 (36%)	110 (37%)	4 (20%)	
<b>40-60</b>	99 (43%)	95 (44%)	4 (33%)		125 (39%)	118 (40%)	7 (35%)	
<b>60-80</b>	NR	NR	4 (33%)		75 (24%)	66 (22%)	9 (45%)	
<b>&gt;80</b>	<3	<3	0 (0%)		3 (1%)	3 (1%)	0 (0%)	
<b>Sex</b>				1.00				0.25
<b>Male</b>	117 (51%)	111 (51%)	6 (50%)		176 (56%)	162 (55%)	14 (70%)	
<b>Female</b>	113 (49%)	107 (49%)	6 (50%)		141 (44%)	135 (45%)	6 (30%)	
<b>Focal deficit</b>				0.67				0.95
<b>Yes</b>	58 (25%)	NR	<3		100 (32%)	93 (31%)	7 (35%)	
<b>No</b>	147 (64%)	139 (64%)	8 (67%)		171 (54%)	161 (54%)	10 (50%)	
<b>Missing</b>	25 (11%)	NR	NR		46 (15%)	43 (14%)	3 (15%)	
<b>Epilepsy</b>				1.00				0.28
<b>Yes</b>	76 (33%)	NR	NR		77 (24%)	NR	<3	
<b>No</b>	35 (15%)	NR	<3		47 (15%)	NR	NR	
<b>Missing</b>	119 (58%)	113 (52%)	6 (50%)		193 (61%)	179 (60%)	14 (70%)	
<b>Cognitive change</b>				0.35				0.73
<b>Yes</b>	29 (13%)	26 (12%)	3 (25%)		42 (13%)	NR	<3	
<b>No</b>	82 (36%)	79 (36%)	3 (25%)		83 (26%)	NR	NR	
<b>Missing</b>	119 (52%)	113 (52%)	6 (50%)		192 (61%)	178 (60%)	14 (70%)	
<b>Headache</b>				1.00				0.73
<b>Yes</b>	18 (8%)	NR	<3		31 (10%)	NR	<3	
<b>No</b>	94 (41%)	NR	NR		94 (30%)	NR	NR	
<b>Missing</b>	118 (51%)	112 (51%)	6 (50%)		192 (61%)	178 (60%)	14 (70%)	
<b>Focality</b>				0.68				0.80
<b>Unifocal</b>	193 (84%)	183 (84%)	10 (83%)		257 (81%)	240 (81%)	17 (85%)	
<b>Multifocal</b>	13 (6%)	NR	NR		16 (5%)	16 (5%)	0 (0%)	
<b>Missing</b>	24 (10%)	NR	<3		44 (14%)	41 (14%)	3 (15%)	
<b>Midline crossing</b>				0.060				0.93
<b>Yes</b>	31 (13%)	27 (12%)	4 (33%)		37 (12%)	NR	<3	
<b>No</b>	168 (73%)	NR	NR		223 (70%)	NR	NR	

<b>Missing</b>	31 (13%)	NR	<3		57 (18%)	53 (18%)	4 (20%)	
<b>Largest tumor diameter, mm (median, range)</b>	50 (3-123)	50 (3-123)	60 (40-120)	0.11	47 (4-120)	47 (4-120)	50 (20-80)	0.77
<b>Charlson Comorbidity Index</b>				<b>0.002</b>				0.73
<b>0</b>	104 (45%)	101 (46%)	3 (25%)		63 (20%)	60 (20%)	3 (15%)	
<b>1-2</b>	109 (47%)	105 (48%)	4 (33%)		229 (72%)	NR	NR	
<b>&gt;=3</b>	17 (7%)	12 (6%)	5 (42%)		25 (8%)	NR	<3	
<b>IDH status</b>				0.55				0.58
<b>Wild type</b>	0 (0%)	0 (0%)	0 (0%)		0 (0%)	0 (0%)	0 (0%)	
<b>Mutated</b>	79 (34%)	74 (34%)	5 (42%)		74 (23%)	71 (24%)	3 (15%)	
<b>Missing</b>	151 (66%)	144 (66%)	7 (58%)		243 (77%)	226 (76%)	17 (85%)	
<b>MGMT status</b>				0.35				0.92
<b>Unmethylated</b>	43 (19%)	NR	<3		32 (10%)	NR	<3	
<b>Methylated</b>	31 (13%)	NR	NR		37 (12%)	NR	<3	
<b>Missing</b>	156 (68%)	148 (68%)	8 (67%)		248 (78%)	231 (78%)	17 (85%)	
<b>Type of surgery</b>				<b>0.030</b>				0.56
<b>Biopsy</b>	69 (30%)	61 (28%)	8 (67%)		83 (26%)	79 (27%)	4 (20%)	
<b>Subtotal resection</b>	73 (32%)	70 (32%)	3 (25%)		119 (38%)	109 (37%)	10 (50%)	
<b>Maximum safe resection</b>	NR	NR	NR		115 (36%)	109 (37%)	6 (30%)	
<b>Missing</b>	<3	<3	NR		42 (13%)	39 (13%)	3 (15%)	
<b>Performance status before surgery</b>				0.42				0.45
<b>0</b>	147 (64%)	141 (65%)	6 (50%)		173 (55%)	164 (55%)	9 (45%)	
<b>1</b>	48 (21%)	45 (21%)	3 (25%)		65 (21%)	59 (20%)	6 (30%)	
<b>&gt;=2</b>	35 (15%)	32 (15%)	3 (25%)		79 (25%)	74 (25%)	5 (25%)	
<b>Radiotherapy</b>				<b>0.035</b>				0.79
<b>No</b>	129 (56%)	126 (58%)	3 (25%)		72 (23%)	67 (23%)	5 (25%)	
<b>Yes</b>	101 (44%)	92 (42%)	9 (75%)		245 (77%)	230 (77%)	15 (75%)	
<b>Chemotherapy</b>				0.74				1.00
<b>No</b>	168 (73%)	160 (73%)	8 (67%)		136 (43%)	127 (43%)	9 (45%)	
<b>Yes</b>	62 (27%)	58 (27%)	4 (33%)		181 (57%)	170 (57%)	11 (55%)	

Abbreviations: VTE, venous thromboembolism; IDH, Isocitrate dehydrogenase; MGMT, O<sup>6</sup>-methylguanine-DNA methyltransferase promoter.

**Supplementary table 2:** Supplementary characteristics of patients with and without VTE for patients with glioma WHO grade 4.

	<b>Total</b> n = 3,083	<b>No VTE</b> n = 2,875	<b>VTE</b> n = 208	<b>p Value</b>
<b>Age groups</b>				0.22
<b>18-40</b>	196 (6%)	188 (7%)	8 (4%)	
<b>40-60</b>	922 (30%)	858 (30%)	64 (31%)	
<b>60-80</b>	1,766 (57%)	1,639 (57%)	127 (61%)	
<b>&gt;80</b>	199 (6%)	190 (7%)	9 (4%)	
<b>Focal deficit</b>				0.60
<b>Yes</b>	2,037 (66%)	1,906 (66%)	131 (63%)	
<b>No</b>	915 (30%)	847 (29%)	68 (33%)	
<b>Missing</b>	131 (4%)	122 (4%)	9 (4%)	
<b>Epilepsy</b>				0.49
<b>Yes</b>	607 (20%)	571 (20%)	36 (17%)	
<b>No</b>	1,637 (53%)	1,528 (53%)	109 (52%)	
<b>Missing</b>	839 (27%)	776 (27%)	63 (30%)	
<b>Cognitive deficit</b>				0.62
<b>Yes</b>	1,158 (38%)	1,086 (38%)	72 (35%)	
<b>No</b>	1,103 (36%)	1,027 (36%)	76 (37%)	
<b>Missing</b>	822 (27%)	762 (27%)	60 (29%)	
<b>Headache</b>				0.48
<b>Yes</b>	719 (23%)	665 (23%)	54 (26%)	
<b>No</b>	1,512 (49%)	1,418 (49%)	94 (45%)	
<b>Missing</b>	852 (28%)	792 (28%)	60 (29%)	
<b>Midline crossing</b>				0.59
<b>Yes</b>	491 (16%)	462 (16%)	29 (14%)	
<b>No</b>	2,351 (76%)	2,191 (76%)	160 (77%)	
<b>Missing</b>	241 (8%)	222 (8%)	19 (9%)	
<b>Largest tumor diameter, mm (median, range)</b>	43 (2-150)	43 (2-150)	43 (3-107)	0.71

Characteristics of patients with glioma WHO grade 4. Continuous measures are presented as median (range) and are compared using the Wilcoxon rank sum test. Categorical measures are presented as n (%) and are compared using the  $\chi^2$ -squared test or Fisher's exact test if <5 values were observed.

Abbreviations: VTE, Venous thromboembolism.

**Supplementary table 3.** Distribution of VTE during time intervals before the diagnosis of glioma grade 4.

Months from glioma diagnosis	<-36	-36;-24	-24;-12	-9;-6	-6;-3	-3;0	Total
VTE freq. in interval (%)	41 (56%)	9 (12%)	8 (11%)	4 (5%)	4 (5%)	8 (11%)	74 (100%)
IR /1000 PY (95%CI)	1.2 (0.8-1.6)	3.0 (1.5-5.7)	2.6 (1.3-5.3)	1.3 (0.2-9.4)	5.3 (2.0-14.1)	8.0 (3.6-17.7)	1.6 (1.2-2.0)
Crude VTE incidence	1.3%	0.3%	0.3%	0.1%	0.1%	0.3%	2.3%

The number of VTE events (%), the incidence rate (95% confidence intervals), and the crude VTE incidence for time intervals before the glioma diagnosis.

Abbreviations: Freq., frequency; IR, incidence rate; PY, person-years.

**Supplementary table 4.** Distribution of venous thromboembolism during time intervals after the diagnosis of glioma WHO grade 4.

Months from glioma diagnosis	0;3	3;6	6;9	9;12	12;24	24;36	>36	Total
VTE freq. in interval (%)	53 (26%)	42 (21%)	34 (17%)	22 (11%)	30 (15%)	10 (5%)	9 (5%)	200 (100%)
IR /1000 PY (95%CI)	74.2 (56.7-97.1)	71.7 (53.0-97.0)	71.4 (51.0-99.9)	57.1 (37.6-86.8)	32.9 (23.0-47.0)	23.4 (12.6-43.5)	14.0 (7.3-27.0)	48.3 (42.0-55.5)
Crude VTE incidence	1.7%	1.6%	1.6%	1.3%	2.2%	1.7%	3.0	6.5%
Patients alive	3,083	2,579	2,107	1,728	1,385	576	304	3,083

The number of VTE events (%), the incidence rate (95% confidence intervals), and the crude VTE incidence for time intervals after the glioma diagnosis as well as the number of patients alive at the beginning of the interval.

Abbreviations: VTE, venous thromboembolism; Freq., frequency; IR, incidence rate; PY, person-years.