

Supplementary material

Literature Retrieval Strategy

1. Search Strategy in Pub-med:

("glioma"[MeSH Terms] OR "glioma"[All Fields] OR "gliomas"[All Fields] OR "glioma s"[All Fields] OR ("glioblastoma"[MeSH Terms] OR "glioblastoma"[All Fields] OR "glioblastomas"[All Fields]) OR ("astrocytoma"[MeSH Terms] OR "astrocytoma"[All Fields] OR "astrocytomas"[All Fields]) OR ("oligodendroglioma"[MeSH Terms] OR "oligodendroglioma"[All Fields] OR "oligodendrogliomas"[All Fields])) AND ("radiomic"[All Fields] OR "radiomics"[All Fields])OR ("radiogenomic"[All Fields] OR "radiogenomics"[All Fields]))

2. Search Strategy in WOS:

TS=((glioma) OR (glioblastoma) OR (astrocytoma) OR (oligodendroglioma))
AND TS=((radiomic) OR (radiogenomic))

3. Search Strategy in Embase:

('glioma'/exp OR glioma OR 'glioblastoma'/exp OR glioblastoma OR 'astrocytoma'/exp OR astrocytoma OR 'oligodendroglioma'/exp OR oligodendroglioma) AND (radiomic OR radiogenomic)

Table S1. The six key domains of the radiomics quality score.

Domain		score	RQS criteria	
1	Image protocol quality	Well-documented image protocols (for example, contrast, slice thickness, energy, etc.) and/or usage of public image protocols allow reproducibility/replicability	+1 (if protocols are well-documented) +1 (if public protocol is used)	1
	Multiple segmentations	Segmentation by different physicians/algorithms/software, perturbing segmentations by (random) noise, segmentation at different breathing cycles. Analyse feature robustness to segmentation variabilities	+1	2
	Phantom study on all scanners	Detect inter-scanner differences and vendor-dependent features. Analyse feature robustness to these sources of variability	+1	3
	Imaging at multiple time points	Collect images of individuals at additional time points. Analyse feature robustness to temporal variabilities (for example, organ movement, organ expansion/shrinkage)	+1	4
2	Feature reduction or adjustment for multiple testing	Decreases the risk of overfitting. Overfitting is inevitable if the number of features exceeds the number of samples. Consider feature robustness when selecting features	-3 (if neither is implemented) +3 (if either is implemented)	5
	Validation	The validation is performed without retraining and without	-5 (if validation is missing)	12

	adaptation of the cut-off value, provides crucial information with regards to credible clinical performance	+2 (if validation is based on a dataset from the same institute) +3 (if validation is based on a dataset from another institute) +4 (if validation is based on two datasets from two distinct institutes) +4 (if the study validates a previously published signature) +5 (if validation is based on three or more datasets from distinct institutes)		
3	Multivariable analysis with non-radiomics features (for example, EGFR mutation) - is expected to provide a more holistic model. Permits correlating/inferencing between radiomics and non radiomics features	+1	6	
	Detect and discuss biological correlations	Demonstration of phenotypic differences (possibly associated with underlying gene-protein expression patterns) deepens understanding of radiomics and biology	+1	7
	Comparison to 'gold standard'	Assess the extent to which the model agrees with/is superior to the current 'gold standard' method (for example, TNM-staging for survival prediction).	+2	13

		This comparison shows the added value of radiomics		
	Potential clinical utility	Report on the current and potential application of the model in a clinical setting (for example, decision curve analysis).	+2	14
4	Cut-off analyses	Determine risk groups by either the median, a previously published cut-off or report a continuous risk variable. Reduces the risk of reporting overly optimistic results	+1	8
	Discrimination statistics	Report discrimination statistics (for example, C-statistic, ROC curve, AUC) and their statistical significance (for example, p-values, confidence intervals). One can also apply resampling method (for example, bootstrapping, cross-validation)	+1 (if a discrimination statistic and its statistical significance are reported) +1 (if a resampling method technique is also applied)	9
	Calibration statistics	Report calibration statistics (for example, Calibration-in-the-large/slope, calibration plots) and their statistical significance (for example, P-values, confidence intervals). One can also apply resampling method (for example, bootstrapping, cross-validation)	+1 (if a calibration statistic and its statistical significance are reported) +1 (if a resampling method technique is also applied)	10
5	Prospective study registered in a trial database	Provides the highest level of evidence supporting the clinical validity and usefulness of the radiomics biomarker	+7 (for prospective validation of a radiomics signature in an appropriate trial)	11
	Cost-	Report on the cost-effectiveness	+1	15

	effective ness analysis	of the clinical application (for example, QALYs generated)		
6	Open science and data	Make code and data publicly available. Open science facilitates knowledge transfer and reproducibility of the study	+1 (if scans are open source) +1 (if region of interest segmentations are open source) +1 (if code is open source) +1 (if radiomics features are calculated on a set of representative ROIs and the calculated features and representative ROIs are open source)	16

Table S2 Top 10 productive countries/regions producing studies related to radiological research in gliomas.

Ran k	Country	Coun ts	Percenta ge	Total citations	Average citation per paper
1	USA	274	35.45	7959	29.05
2	China	242	31.31	4039	16.70
3	Germany	73	9.44	1617	22.15
4	South Korea	47	6.08	994	21.15
5	UK	45	5.82	539	11.98
6	Canada	36	4.66	627	17.42
7	France	33	4.27	383	11.61
8	Netherlan ds	32	4.14	441	13.78
9	Italy	31	4.01	161	5.19
10	Japan	25	3.23	338	13.52

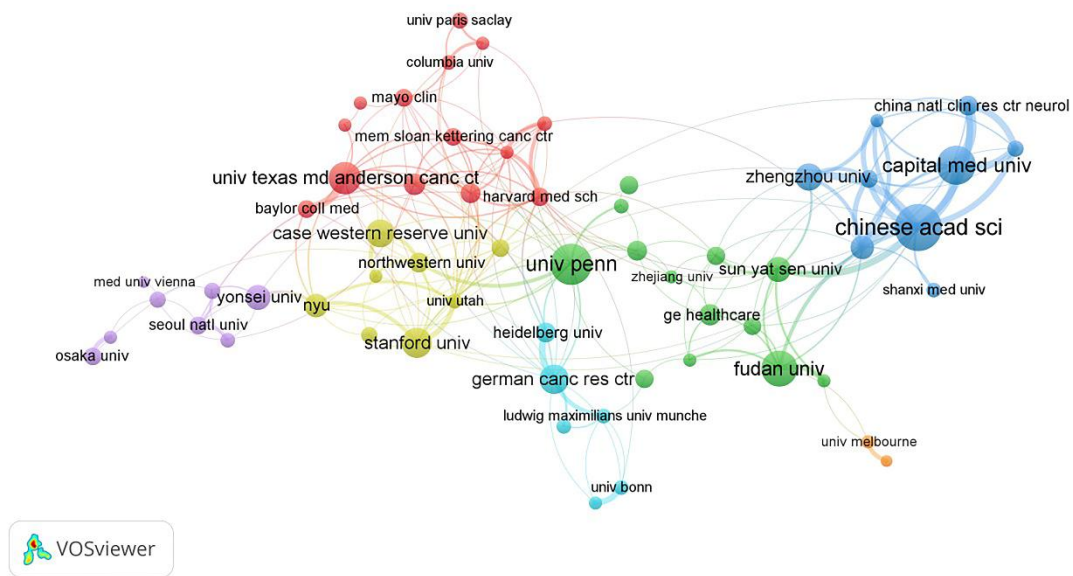


Figure S1. The total link strength between institutions, the lines between nodes indicate co-authorships between countries, where a thicker line indicates stronger cooperation.

Table S3. Top 10 institutes with publications researching the use of radiomics in gliomas

Rank	Institutions	Countries/reg ions	NP	Citatio ns	Average per item
1	Chinese Academy of Sciences	China	38	1566	41.21
2	University of Pennsylvania	USA	32	883	27.59
3	Capital Medical University	China	30	734	24.47
4	Fudan University	China	27	626	23.19
5	Stanford University	USA	24	693	28.88
6	The University of Texas MD Anderson Cancer Center	USA	24	413	17.21
7	German Cancer Research Center	Germany	21	1010	42.08

8	Case Western Reserve University	USA	20	314	15.70
9	Zhengzhou University	China	19	419	22.05
10	Sun Yat-sen University	China	17	528	31.06

Table S4. Detailed characteristics and RQS scores of 260 articles

Number of entries	goal of the research	year	Author	Journal	Journal type	IF in five-year	JCR division	Data mode	Dataset size	Total score of RQS
1	DD	2019	Artzi, M.	Journal of magnetic resonance imaging	1	4.80	1	T1C	439	10
2	DD	2019	Bao, S.	Magnetic resonance medical sciences	1	2.10	3	rCBV /AD C	20	0
3	DD	2019	Chen, C.	Frontiers in oncology	2	6.12	2	T1C	134	14
4	DD	2019	Dong, F.	European Radiology	1	6.02	1	T1/T1C/T	120	10
5	DD	2019	Kong, Z.	NeuroImage: Clinical	1	5.69	2	18F-FDG-PET	77	10
6	DD	2009	Kunimatsu, A.	Magnetic resonance medical sciences	1	2.10	3	T1C	76	12
7	DD	2019	Petruskić, K.	European journal of radiology	1	4.21	2	T1C/T2/SWI	55	1
8	DD	2019	Qian, Z.	Cancer letters	2	9.42	1	T1/T2/T1C	412	10
9	DD	2019	Wang, B. T.	Chinese medical sciences journal	2	0.74	1	T2	109	2
10	DD	2019	Yun, J.	Scientific reports	3	5.51	2	T1C	195	15
11	DD	2020	Bae, S.	Scientific reports	3	5.51	2	T1C/T2	248	12
12	DD	2020	Dastmalchiyan, S.	European journal of nuclear medicine and molecular imaging	1	9.11	1	T1T2 maps	31	11
13	DD	2020	Chen, C.	Frontiers in oncology	2	6.12	2	T1C	138	11
14	DD	2020	Ortiz-Ramón	Physica Medica-European	2	3.01	3	T1	100	10

			n, R.	Journal of Medical Physics							
15	DD	2020	Xia, W.	Journal of magnetic resonance imaging	1	4.80	1	1	T1C/T2/DWI/ADC	240	16
16	DD	2020	Csuta k et al.,	Brain sciences	2	3.70	6	3	T2	42	2
17	DD	2021	Xia, W.	Journal of magnetic resonance imaging	1	4.80	1	1	T1C/T2F/ADC	289	13
18	DD	2021	Bathl a, G.	European radiology	1	6.02	1	1	T1C/T2F/ADC	94	3
19	DD	2021	Priya, S.	Cancers	2	6.88	6	1	T1/T1C/T2/T2F/A DC	253	1
20	DD	2021	de Caus ans, A.	Frontiers in Oncology	2	6.12	2	2	T1/T1C	143	9
21	DD	2021	Zhan g, L.	Frontiers in Oncology	2	6.12	2	2	T1C/T2/A DC/18F-FDG-PET	100	9
22	DD	2021	Han, Y.	Frontiers in cell and developmental biology	2	6.57	6	1	T1C	350	16
23	DD	2021	Han, Y.	European journal of radiology	1	4.21	8	2	T1/T2	57	13
24	DD	2021	Priya, S.	Scientific reports	3	5.51	6	2	T1/T1C/T2/T2F/A DC	120	4
25	DD		Priya, S.	The neuroradiolog	1	1.63	1	4	T1/T1C/T	143	1

		20		Journal				2/T2		
		21						F/A		
								DC		
2		20	Sarto	Scientific		5.51		APT		
6	DD	21	retti	Reports	3	6	2	w	48	9
2		20	Su, C.	Clinical		3.00				
7	DD	21	Q.	Radiology	1	3	2	T1C	225	9
2		20	Xiao,	Journal of		1.43		T1C/		
8	DD	21	D.	integrative	2	4	4	T2F	118	13
2		20	Bo, L.	neuroscience		5.49		T1/T		
9	DD	21	L.	Frontiers in	2	3	2	2	188	15
				Medicine						
3		20	Märg			3.70				
0	DD	22	inean	Brain sciences	2	6	3	CT	36	1
3		20	, L.							
1	DD	22	Mo,	European	1	6.02	1	T1C/	104	13
			H.	radiology				T2		
								T1C/		
3		20	Wen-	Journal of		4.00		T2F/		
2	DD	22	Feng	Personalized	2	5	2	DWI	51	8
			Wu	Medicine				/AD		
								C		
3		20	Pons-							
3	DD	22	Esco	European	1	6.02	1	T1C/	428	11
			da,	Radiology				DSC		
			Alber							
			t							
3		20	Yae					T1/T		
4	DD	22	Won	European	1	6.02	1	1C/T	302	13
			Park	Radiology				2/T2		
								F		
3		20	Eisen			3.70		DSC		
5	DD	20	hut,	Brain Sciences	2	6	3	/AD	74	1
			F.					C		
3		20	Guan	Frontiers in		4.32				
6	DD	22	g Lu	Neurology	2	1	2	CT	101	11
3		20	Yuku	Frontiers in		5.58		T1C/		
7	DD	22	n Liu	Neuroscience	2	2	2	T2	935	14
3		20	Dong			6.12		T1C/		
8	DD	22	ming	Frontiers in	2	2	2	T2	250	11
			Liu	Oncology						
3		20	Ya			6.12		T1/T		
9	DD	22	Huan	Frontiers in	2	2	2	1C/T	187	8
			g	Oncology						
4	DD	20	Xu	Scientific	3	5.51	2	T1C/	100	9

0		22	Cao	Reports		6			T2/1 8F- FDG- PET		
4	DD	20 22	Salar Bijari	BioMed Research International	2	3.76 7	3		T1/T 1C/T 2/T2 F	91	0
4	TR	20 19	Zhan g, Q.	Computational and Mathematical Methods in Medicine	3	2.88 7	2		T1/T 1c/T 2/T2f	51	9
4	TR	20 19	Kim, J. Y.	Neuro- Oncology	2	14.1 19	1		T1c/ T2f/ ADC /CB V	61	12
4	TR	20 22	Zhu, Z.	frontier in oncology	2	6.12 2	2		T1/T 1C/T 2/T2 F/AS L	15	11
4	TR	20 21	Ratho re, S.	journal of medical imaging	1	3.56	2		T1/T 1c/T 2/T2f /DTI /DS C	90	14
4	TR	20 21	Wan g, Z. H.	frontier in oncology	2	6.12 2	2		T1/T 2/T1 C	64	14
4	TR	20 21	Park, Y. W.	scientific reports	3	5.51 6	2		T2/T 1C/ ADC	127	15
4	TR	20 20	Gao, X. Y.	Cancer Management and Research	2	3.81 1	3		T1/T 1C/T 2f/T2 FC	56	11
4	TR	20 20	Lohm ann, P.	Cancer	2	6.88 6	1		FET PET	34	11
5	TR	20 19	Wan g, K.	European Journal of Nuclear Medicine and	1	9.11 1	1		18F- FDG- PET/ 11C-	160	14

				Molecular Imaging				MET PET/T1C/T2f		
51	TR	2020	Pan, Z. Q.	Behavioural Neurology	2	3.655	3	T1, T1c, T2, T2F	152	16
52	TR	2021	Ammari, S.	diagnostic	2	4.129	2	T1, T1c, T2F, DWI	194	11
53	TR	2022	Jing, H.	BioMed Research International	2	3.767	3	t2f/T1c	118	14
54	TR	2021	Zhang, Z.	frontier in oncology	2	6.122	2	t1/t1C/t2	84	17
55	TR	2021	Wang, J.	frontier in oncology	2	6.122	2	T1/T1C, T2F/T2F	122	15
56	TR	2022	Mammadov, O.	Heliyon	3	3.752	2	T1/T1C	124	9
57	TR	2022	Acquitter, C.	Cancer	2	6.886	1	T1/T1C/T2f/DWI/DSC	28	10
58	TR	2021	Shim, K. Y.	scientific reports	3	5.516	2	T1C/T2F/DSC	192	14
59	TR	2022	Müller, M.	Journal of Neuro-Oncology	2	4.444	2	FET-PET	151	9
60	TR	2020	Burr, J.	Journal of Imaging	1	7.5	1	T1C	35	9
61	TR	2019	Lin-Yan, J.	British Journal of Neurosurgery	2	1.124	3	T1C, T2F/ADC	57	12
62	TR	2021	Park, J. E.	European Radiology	1	6.02	1	T1C/ADC/CB	184	11
63	TR	2022	Hagiwara,	Journal of Neuro-	2	4.444	2	T1/T1C/T	463	9

			A.	Oncology				2/T2 F		
6 4	TR	20 21	Patel, M.	Clinical Radiology	1	3.00 3	2	T1C/ T2/A DC	76	5
6 5	TR	20 22	McKe nney, A. S.	Advances Radiation Oncology	1	2.71 4	1	T1C, DCE	74	3
6 6	TR	20 23	Jun Zhan g	European Radiology	1	6.02	1	T1/T 1/CT 2/D WI/ ASL	126	11
6 7	TR	20 23	Hao Long 1	Frontiers Oncology	2	6.12 2	2	T1C/ T2F/ DSC	24	8
6 8	TR	20 23	Chies a, S.	Frontiers medicine	2	5.49 3	2	T1C	90	11
6 9	TR	20 23	Santi ago Cepe da	Cancers	2	6.88 6	1	T1/T 1C/T 2/T2 F/A DC	55	12
7 0	TR	20 23	Leon e, R	Neuro- Oncology Advances	2	0		T1/T 1C/T 2/T2 F/A DC/ CBV	105	8
7 1	TR	20 21	Tana y Chou gule	NMR BIOMEDICIN E	1	4.03 7	2	T1C/ T2F/ DCE /AD C	29	1
7 2	TR	20 23	Guan jie Hu, MSc	Journal Of Computer Assisted Tomography	1	1.79 8	3	T2	97	9
7 3	TR	20 22	Asen a Petek Ari	scientific reports	3	5.51 6	2	T1C	131	8
7 4	PP	20 22	Wu, W.	Frontiers oncology	2	6.12 2	2	T1W 1	259	15
7 5	PP	20 21	Yan, J.	EBioMedicine	2	10.4 81	1	DTI	381	18

7		20	Wan	Mathematical biosciences and engineering	3	2.12	7	3	T1/T 1C/T 2/T2 F	210	6
6	PP	21	g, Y.								
7		20	Vils,	Frontiers in		6.12					
7	PP	21	A.	oncology	2	2	2		T1C	118	11
7		20	Park,	Scientific		5.51			T1C/ T2F/ DWI /DS		
8	PP	20	J. E.	reports	3	6	2		C	216	11
7		20	Chiu,	Journal of clinical medicine	2	5.09			T1C/ T2/T 2F/A		
9	PP	21	F. Y.			8	2		DC	54	5
8		20		Frontiers in		6.12			T1/T 1C/T 2/T2		
0	PP	22	Jia, X.	oncology	2	2	2		F	125	15
8		20	Osma	Frontiers in					T1/T 1C/T 2/T2		
1	PP	19	n, A. F. I.	computational neuroscience	2	3.47	2		F	163	14
8		20	Wei,	European					T1C/ T2F/ ADC		
2	PP	19	J.	radiology	1	6.02	1			105	12
8		20	Amm			4.12			T1/T 1C/T 2/T2		
3	PP	21	ari, S.	Diagnostics	2	9	2		F	210	16
8		20		Advances in		2.71			T1/T 1C/T 2/T2		
4	PP	21	Fu, J.	Radiation Oncology	1	4	1		F	285	13
8		20	Yang,	Frontiers in		5.58			T1/T 1C/T 2/T2		
5	PP	21	Y.	neuroscience	2	2	2		F	129	16
8		20	Li, G.			16.1					
6	PP	22	Z.	Brain	2	73	1		T2	652	18
8		20	Liu,	Journal of		4.50			T1/T 1C/T 2/T2		
7	PP	21	C.	Cancer	2	5	2		F/D WI	129	15
8	PP	20	Sun,	Radiology	1	17.4	1		T1/T	435	15

8		21	Q.				83			1C/T 2/T2 F		
8		20	Sun,	Frontiers in			5.58			T1/T 1C/T 2/T2		
9	PP	19	L.	Neuroscience	2	2	2			F	285	12
9		20	Feng,	Frontiers in						T1/T 1C/T 2/T2		
0	PP	20	X.	computational	3	3.47	2			F	285	14
9		20	Kazer	JCO Clinical						T1C	80	13
1	PP	19	ooni,	Cancer								
9		20	Fathi	Scientific						T1/T 1C/T 2/T2		
2	PP	22	A.	reports	3	5.51	6	2		F	516	18
9		20		European						18F- FET- PET		
3	PP	22	Li, Z.	journal of nuclear medicine and molecular imaging	1	9.11	1	1			141	7
9		20	Li, Z.	Translational						T1/T 1C/T 2/T2		
4	PP	21	Z.	oncology	2	4.65	6	2		F	704	17
9		20	Han,	AJNR.						T1C	178	11
5	PP	20	W.	American journal of neuroradiolog y	1	4.99	6	2				
9		20	Shbo	Frontiers in						T1/T 1C/T 2/T2		
6	PP	19	ul, Z. A.	neuroscience	2	5.58	2	2		F	396	10
9		20	Pasq	Journal of						T2F/ DWI /DS		
7	PP	21	uini, L.	neuroimaging	1	2.58	6	4		C	68	5
9		20	Chad	Cancers						T1/T 1C/T 2/T2		
8	PP	19	dad, A.	Proceedings	2	6.88	6	1		F	200	16
9	PP	20	Spyri		3	0	0	0		T1/T	101	1

9		20	don Bakas	of SPIE--the International Society for Optical Engineering				1C/T 2/T2 F		
1 0 0	PP	20 21	Lami chha ne, B.	Frontiers in neurology	2	4.32 1	2	rsFC	64	13
1 0 1	PP	20 21	Chat o, L.	Journal of personalized medicine	2	4.00 5	2	T1/T 1C/T 2/T2 F	335	15
1 0 2	PP	20 20	Ferac o, P.	Diagnostics	2	4.12 9	2	T1/T 1C/T 2/T2 F/A DC	22	4
1 0 3	PP	20 19	Prasa nna, P.	Scientific reports	3	5.51 6	2	T1C/ T2/T 2F	89	14
1 0 4	PP	20 19	Nie, D.	Scientific reports	3	5.51 6	2	T1C/ rsFC /DTI	68	15
1 0 5	PP	20 20	Choi, S. W.	Cancers	2	6.88 6	1	T1/T 1C/T 2/T2 F	144	18
1 0 6	PP	20 20	Yoon, H. G.	Cancers	2	6.88 6	1	T1/T 1C/T 2/T2 F/D WI/ ADC	118	14
1 0 7	PP	20 21	Wan g, B.	Frontiers in oncology	2	6.12 2	2	T1/T 1C/T 2/T2 F	134	12
1 0 8	PP	20 20	Bakas , S.	Journal of medical imaging	1	3.56	2	T1/T 1C/T 2/T2 F/DS C/D WI	101	11
1 0 9	PP	20 22	Shah een, A.	Frontiers in neuroscience	2	5.58 2	2	T1/T 1C/T 2/T2	178	13

								F		
1			Garci					T1/T		
1		20	a-			5.51		1C/T		
0	PP	21	Ruiz, A.	Scientific reports	3	6	2	2/T2	144	12
1								F		
1		20	Cepe			6.88		T1/T		
1	PP	21	da, S.	Cancers	2	6	1	1C/T	203	15
1								2/T2		
1		20	Pak,	Korean journal of radiology		5.93		T1/T		
2	PP	21	E.		1	7	1	1C/T	150	13
1								2/T2		
1		20	Tixier			3.70		T1/T		
3	PP	19	, F.	Oncotarget	2	7	3	1C/T	159	12
1			Verd					2/T2		
1		20	uin,			6.88		T1C/		
4	PP	21	M.	Cancers	2	6	1	T2	142	15
1								T1/T		
1		20	Ma,	Mathematical Biosciences and Engineering		2.12		1C/T		
5	PP	20	C.		3	7	3	2/T2	455	13
1								F		
1		20	Nuec	Neuro-				T1/T		
1		21	hterle	oncology				1C/T		
6	PP	21	in, N.	advances	2	0	0	2/T2	46	13
1								F		
1		20	Beig,	Clinical cancer		13.9		T1/T		
7	PP	20	N.	research	2	75	1	1C/T	203	13
1								2/T2		
1		20	Ismai	IEEE transactions on medical imaging		12.3		T1C/		
8	PP	22	l, M.		1	69	1	T2/T	207	14
1			Hsu,					2F		
1		20	J. B.			6.88		T1C/		
9	PP	20	K.	Cancers	2	6	1	ADC	116	13
1		20	Wan	Frontiers in		5.58		T1/T		
2	PP	21	g, S.	neuroscience	2	2	2		142	15

0								1C/T 2/T2 F		
1								T1/T 1C/T 2/T2 F		
2	PP	20 19	Sasaki, T.	Scientific reports	3	5.51 6	2		201	14
1							1 月	T1/T 1C/T 2/T2 F		
2	PP	20 20	Suter, Y.	Cancer Imaging	1	4.98	2 日		63	15
1				Contrast media & molecular imaging				T1/T 1C/T 2/T2 F		
2	PP	20 22	Yang, G.		1	3.31 8	3		241	15
1				American journal of neuroradiology				T1/T 1C/T 2/T2 F		
2	PP	20 22	George, E.		1	4.99 6	2		205	8
1				Frontiers in computational neuroscience				T1/T 1C/T 2/T2 F		
2	PP	20 19	Wenger, L.		2	3.47	2		211	13
1				Neuro-oncology				T1/T 1C/T 2/T2 F		
2	PP	20 21	Beig, N.		2	14.1 19	1		313	13
1				NMR in biomedical science				T1/T 1C/T 2/T2 F		
2	PP	20 22	Moya-Sáez, E.		1	4.03 7	2		199	13
1				Medical & Biological Engineering & Computing				T1C/ T2F		
2	PP	20 20	Wijetunge, N.		3	2.85 2	3		331	4
1				European Radiology				T1/T 1C/T 2/T2		
2	PP	20 19	Zhang, X.		1	6.02	1		105	15

								F		
1								T1/T		
3		20	Zhan	European				1C/T		
0	PP	20	g, X.	Radiology	1	6.02	1	2/T2	104	14
								F		
1								T1/T		
3		20	Ye, J.	Scientific		1.46		1C/T		
1	PP	21	M.	Programming	3	8	3	2/T2	285	7
								F		
1				European				T1/T		
3		20	Yang,	Journal of		4.21		1C/T		
2	PP	22	Y.	Radiology	1	8	2	2/T2	187	14
								F		
1				AJNR				T1/T		
3		20	Verm	Journal of		4.99		1C/T		
3	PP	22	a, R.	Neuroradiolo	1	6	2	T2/T	150	10
				gy				2F		
1				European				T1C/		
3		20	Tan,	Journal of		4.21		T2F		
4	PP	19	Y.	Radiology	1	8	2		147	14
1				European				T1/T		
3		20	Park,	Radiology				1C/T		
5	PP	22	Y. W.		1	6.02	1	2/T2	93	17
								F		
1				European				T1/T		
3		20	Park,	Radiology				1C/T		
6	PP	20	C. J.		1	6.02	1	2/T2	150	15
								F		
1				Laboratory				T1C		
3		20	Luo,	Investigation		5.86		、		
7	PP	20	H.		3	7	1	T2F	655	13
1				Magnetic				T1C		
3		20	Lu,	Resonance		2.72				
8	PP	20	Y.	Imaging	1	2	3		181	15
1				Brain Imaging				T1C/		
3		20	Liu,	and Behavior		3.80		rsFC		
9	PP	19	L.		1	7	2		68	11
1				European				T1C/		
4		20	Liu,	Radiology				T2F		
0	PP	22	D.		1	6.02	1		219	15

1 4 1	PP	20 19	Kim, J. Y.	Neuroradiology	1	3.11 2	3	T1C/ T2F/ FA/ CBV	83	12
1 4 2	PP	20 21	Kim, A. R.	Cancer Immunology, Immunotherapy	2	3.69 3	2	T1/T 1C/T 2F/A DC/ CBV	51	4
1 4 3	PP	20 19	Kim, B. S.	World Neurosurgery	2	2.33 6	4	ADC	93	8
1 4 4	PP	20 21	Com pter, I.	Radiotherapy and Oncology	2	6.72 4	1	CT	218	14
1 4 5	PP	20 21	Islam , M.	Computerized Medical Imaging and Graphics	1	6.14 1	1	T1/T 1C/T 2/T2 F	331	5
1 4 6	PP	20 20	Choi, Y. S.	European Radiology	1	6.02	1	T1/T 1C/T 2/T2 F	296	14
1 4 7	PP	20 20	Baid, U.	Frontiers in Computational Neuroscience	2	3.47	2	T1C/ T2F	163	15
1 4 8	PP	20 22	Gera ghty, B. J.	Journal of Neuro- Oncology	2	4.44 4	2	T1C/ T2/T 2F/A DC	235	11
1 4 9	PP	20 21	Choi, Y.	European Radiology	1	6.02	1	T1/T 1C/T 2/T2 F	120	11
1 5 0	PP	20 22	Wan, Y.	Academic Radiology	1	4.07 6	1	T1C	153	6
1 5 1	PP	20 21	Wan g, J.	European Radiology	1	6.02	1	T1C/ T2F	149	16
1 5 2	PP	20 19	Choi, Y.	European Journal of Radiology	1	4.21 8	2	T2	114	10
1 5 5	PP	20 19	Chen, X.	Academic Radiology	1	4.07 6	1	T1C	127	12

3										
1										
5		20	Priya,	Neuroradiolo						
4	PP	21	S.	gy Journal	1	1.63	4	T1C	85	3
1								T1/T		
5		20	Wu,	Medical		4.35		1C/T		
5	PP	19	G.	physics	2	4	2	2	221	13
1								18F-		
5		20	Wiltg	Radiation		4.26		FET-		
6	PP	23	en, T.	Oncology	1	9	2	PET	25	9
1			Kesle							
5		20	r, S.	Scientific		5.51				
7	PP	22	R.	Reports	3	6	2	T1	305	4
1				Quantitative				T1/T		
5		20		Imaging in		4.48		1C/T		
8	PP	23	Li, Z.	Medicine and	1	5	2	2/T2	162	11
1				Surgery				F		
1				Computers in				T1/T		
5		20	Xu, P.	Biology and		5.75		1C/T		
9	PP	23	F.	Medicine	2	2	1	2/T2	180	15
1								F		
1				JOURNAL OF				T1/T		
6		20	Wan	MAGNETIC		4.80		1C/T		
0	PP	21	g, J.	RESONANCE	1	1	1	2/T2	190	16
1				IMAGING				F		
1				BMC Medical				T1/T		
6		20	Carol	Informatics		3.89		2F/D		
1	GMP	20	e H.	and Decision	2	4	3	SC	333	5
1			Sudre	Making						
1				Journal of						
6		20	Sun	Central South		1.92				
2	GMP	21	, X	University	2	7	2	T1C	146	4
1								T1/T		
1			Zhiw	Journal of				1C/T		
6		20	ei	of		4.66		2/T2		
3	GMP	20	Zhan	Digital	1	5	2	F/DT	108	10
1				Imaging				I		
1				Journal of				T1C/		
6		20	Syed	Medical				T2/T		
4	GMP	19	M. S	Imaging	1	3.56	2	2F	357	13
1										
6		20	Yang	Frontiers in		6.12		T1C/		
5	GMP	19	Zhan	Oncology	2	2	2	T2F	101	11
1										
6		20	Chen	Frontiers in		6.12		1C/T		
6	GMP	22	an Xu	Oncology	2	2	2	2	470	13

167			Hong zhan g Zhou	International Journal of Clinical Practice	2	3.09	3	2	T1C	114	11
168			Bora n Chen	Frontiers in Oncology	2	6.12	2	2	T1/T1C/T2/T2F	175	10
169			Jing Guo	NEURORADIOLOGY	1	3.13	2	3	T1/T1C/T2/T2F	152	14
170			Min Gao	Frontiers in Oncology	2	6.12	2	2	T1C	367	9
171			Zhen yuan Ning	Annals of Translational Medicine	2	4.26	3	3	T1C/T2F	567	15
172			Taka hiro Naka moto	Scientific Reports	3	5.51	6	2	T1C/T2	224	15
173			Huan gqi Zhan g	Frontiers in Oncology	2	6.12	2	2	T1/T1C/T2/T2F	142	12
174			Yae Won Park	Korean JOURNAL OF RADIOLOGY	1	5.93	7	1	T2/T2F/T1C	299	16
175			Chan glian g Su	American Journal of Translational Research	2	3.88	5	3	T2F/DWI/DKI	139	7
176			Kong , Z.	Cancer Imaging	1	4.98	4	2	T1C/T2F	107	14
177			Lang en, K. J.	Journal of nuclear medicine	1	9.83	7	1	18F-FDO PA-PET	72	6
178			Hedy ehza deh, M.	Journal of digital imaging	1	4.66	5	2	T1/T1C/T2/T2F	166	3
179			Evan Calab	Scientific Reports	3	5.51	6	2	T1/T1C/T	199	14

9			rese					2/T2 F/S WI/ DWI /ASL /HA RDI			
1								T2/T 2F/T 1C/ APT			
8	GMP	20	Han, Y.	Frontiers in neuroscience	1	5.58	2	2	W	59	11
0		20									
1									T1/T 1C/T 2/T2 F/A		
8	GMP	20	Meng , L.	Medicine	2	2.22	7	3	DC	123	12
1											
8	GMP	20	Zhao, S. S.	BMC neurology	2	3.18	9	3	T1C/ T2F	36	7
2		20									
1									T1/T 1C/T 2/T2		
8	GMP	20	Lo, C. M.	Medicine	2	2.22	7	3	F	39	4
3		20									
1				European							
8	GMP	20	Casal e, R.	Journal of Radiology	1	4.21	8	2	T1/T 2	209	14
4		21									
1											
8	GMP	20	Liu, X.	Aging	3	6.45	8	2	T2	260	13
5		19									
1									T1/T 1C/T 2/T2		
8	GMP	20	Do, D. T.	Scientific reports	3	5.51	6	2	F	53	8
6		22									
1									T1/T 1C/T 2/T2		
8	GMP	20	Santi nha, J.	Journal of medical imaging	1	3.56	2	2	F	77	14
7		21									
1									18F- FET- PET		
8	GMP	20	Zhou , W.	Frontiers in oncology	2	6.12	2	2		58	8
8		21									
1									T1/T 1C/T 2/T2		
8	GMP	20	Shbo ul, Z. A.	Frontiers in medicine	2	5.49	3	2	F	108	15
9		21									
1	GMP	20	Sudre	Visual	2	2.83	3	3	T1/T	80	15

90		20	, C. H.	Computer		5		2/T2 F		
191	GMP	2020	Sakai, Y.	International journal of molecular sciences	2	2.617	2	T2F/ DWI	100	5
192	GMP	2021	Mani kis, G. C.	Cancers	2	6.886	1	DSC	160	17
193	GMP	2020	Rathore, S.	Neuro-oncology advances	2	0	0	T1/T1C/T2/T2F	473	12
194	GMP	2022	He, J.	BMC medical imaging	1	2.822	3	T1/T1C/T2/DWI/ADC	81	6
195	GMP	2021	Xiao, Z.	Frontiers in oncology	2	6.122	2	T1/T1C/T2	614	15
196	GMP	2021	Kihira, S.	Neuro-oncology advances	2	0	0	T1C/T2F/DWI	111	6
197	GMP	2020	Tian, H.	BioMed research international	2	3.767	3	T1/T1C/T2/T2F/MRS	128	8
198	GMP	2022	Kandalkar, P.	Frontiers in oncology	2	6.122	2	T1C/T2	100	8
199	GMP	2019	Kim, D.	Frontiers in Computational Neuroscience	2	3.47	2	T1/T1C/T2/T2F	167	17
200	GMP	2020	Qian, J.	International journal of radiation oncology, biology, physics	1	7.5	1	18F-DOPA-PET	86	8
201	GMP	2021	Li, Z. C.	European Journal of Nuclear	1	9.111	1	18F-FET-PET(r	159	5

				Medicine and Molecular Imaging				e+ds)		
2 0 2	GMP	20 21	Fan, Z. W.	Frontiers in Oncology	2	6.12 2	2	T1/T 1C/T 2	157	12
2 0 3	GMP	20 21	Cao, M.	BioMed research international	2	3.76 7	3	T1/T 1C/T 2/T2 F	102	4
2 0 4	GMP	20 21	Huan g, W. Y.	Cancer science	2	6.62 2	2	T1/T 1C/T 2/T2 F	53	19
2 0 5	GMP	20 20	Sun, X. J.	Journal of International Medical Research	2	1.80 3	4	T1/T 2	92	6
2 0 6	GMP	20 22	Wan g, H.	Cancer medicine	2	4.84 2	2	T1C/ T2F/ ADC	174	19
2 0 7	GMP	20 21	Sun, C.	Frontiers in oncology	2	6.12 2	2	T1/T 1C/T 2/T2 F/A DC	335	7
2 0 8	GMP	20 20	Zhan g, L. Y.	Frontiers in Oncology	2	6.12 2	2	T1/T 1C/T 2/T2 F	629	16
2 0 9	GMP	20 20	Fang, S.	Frontiers in oncology	2	6.12 2	2	T1/T 1C/T 2	164	14
2 1 0	GMP	20 19	Wu, S.	Journal of cancer research and clinical oncology	2	4.17 6	2	T1/T 1C/T 2/T2 F	126	11
2 1 1	GMP	20 22	Li, Y. P.	Cancers	2	6.88 6	1	T1/T 1C/T 2/T2 F	212	16
2 1 2	GMP	20 21	Sohn, B.	Journal of Neuro- Oncology	2	4.44 4	2	T1/T 1C/T 2/T2 F	418	13

2				BioMed						
1		20	Niu,	research		3.76				
3	GMP	20	L.	international	2	7	3	T1C	182	11
2										
1		20	Kong	Frontiers in		4.32		T1C/		
4	GMP	20	, Z. R.	Neurology	2	1	2	T2	96	13
2								T1/T		
1		20	Kim,			6.88		1C/T		
5	GMP	22	B. H.	Cancers	2	6	1	2/T2	420	19
2								F		
1		20	Le,	Journal of				T1/T		
6	GMP	20	N. Q.	personalized		4.00		1C/T		
2		20	K.	medicine	2	5	2	2/T2	53	6
2								F		
1		20	Wan	Chinese		3.80		T1/T		
7	GMP	20	g,J	medical	2	4	1	1C/T		
2				journal				2/DT		
1		20						I	38	4
2										
1		20	Wu,	European				T1C/		
8	GMP	22	S.	Radiology	1	6.02	1	T2F/	111	11
2								CBF/		
1		20		Clinical		3.00		ADC		
9	GMP	22	Lu, J.	Radiology	2	3	2		176	13
2								T1C		
2		20	Wan	European		4.21		2/T2f		
0	GMP	22	g, J.	Journal of	1	8	2	/DW	100	12
2				Radiology				I/DC		
2		20	Tan,					E		
1	GMP	19	Y.	European	1	6.02	1		105	16
2				Radiology				T1C/		
2		20		Clinical		3.00		T2F/		
2	GMP	20	Su, X.	Radiology	1	3	2	ADC	122	15
2										
2		20	Jiang,	Neuroradiolo		3.11		T1/T		
3	GMP	20	C. D.	gy	1	2	3	1C/T	116	10
2								2/T2		
2		20	Park,	Neuroradiolo		3.11		F	122	15
4	GMP	19	C. J.	gy	1	2	3		168	9
2								DTI/		
2		20	Jiang,	European		4.21		T1C/		
2	GMP	19	C.	Journal of	1	8	2	T2	122	11

5				Radiology						
2				European						
2		20	Choi,	Journal of		4.21				
6	GMP	20	Y.	Radiology	1	8	2	T2	182	13
2				WORLD				T2/T		
2		20	Lee,	NEUROSURG		2.33		2F/T		
7	GMP	19	M. H.	ERY	2	6	4	1C/ DSC /DW	123	9
2				Journal of				T1/T		
2		20	Pease	Neuro-		4.44		1C/T		
8	GMP	22	, M.	Oncology	2	4	2	2/T2	235	10
2				European				T1C/ T2/T		
2		20		Radiology				2F/D		
9	GMP	19	Su, C.	Radiology	1	6.02	1	WI/ ADC /ASL	220	3
2				Clinical				T1C/ T2/T		
3		20		Neurology				2F/D		
0	GMP	22	Xu, J.	and Neurosurgery	2	2.11	3	WI/ ADC	113	9
2				Neuroradiolo				T1/T		
3		20	Liu,	gy		3.11		1C/T		
1	GMP	21	X.		1	2	3	2/T2 F/D KI	82	8
2				European				T1C/ T2F/ DKI		
3		20	Tan,	Journal of		4.21		(M		
2	GMP	20	Y.	Radiology	1	8	2	K) /DTI	62	14
2				NEUROSURG				(M		
3		20	Taha,	ERY	2	5.71		D)	326	9
3	GMP	21	B.			6	1	T1C		
2				Journal of				T1/T		
2		20	Zhan	Magnetic		4.80		1C/T		
3		21	g, S.	Resonance				2/T2		
4	GMP	21		Imaging	1	1	1	F	162	3
2		20	Peng,	Journal of		4.80		T1C/ T2/A	105	1
3	GMP	20	H.	Magnetic	1	1	1			

5				Resonance Imaging				SL		
2				Journal of						
3				Magnetic				T2F/		
6	GMP	20	Ren, Y.	Resonance Imaging	1	4.80	1	ASL/DWI	57	3
2								T1/T		
3								1C/T		
7	GMP	20	Hajia nfar, G.	WORLD NEUROSURGERY	2	2.33	6	2/T2 F	82	1
2										
3								T2/T		
8	GMP	20	Koca k, B.	European Radiology	1	6.02	1	1C	107	10
2								T1/T		
3								1C/T		
9	GMP	20	Chad dad, A.	Neurocomputing	2	5.41	6	2/T2 F	151	11
2										
4				Journal of						
0	GMP	20	Wan g, Q. Y.	Magnetic Resonance Imaging	1	4.80	1	T1C/T2/F ADC	85	14
2								T1/T		
4								1C/T		
1	GMP	20	Wei You1	Frontiers in Oncology	2	6.12	2	2/T2 F	102	18
2										
4				Quantitative						
2	GMP	20	Junqi Xu1	Imaging in Medicine and Surgery	1	4.48	5	T1C/T2F/DWI	216	11
2										
4								T1C/		
3	GMP	20	Ding qian Wan g	Frontiers in Bioinformatics	2			T2F/BLTP	217	12
2										
4								T1C/		
4	GMP	20	Yongj ian Sha	Cancers	2	6.88	6	T2F	498	18
2										
4								T1/T		
5	GMP	20	Pei, D.	European Radiology	1	6.02	1	1C/T2F/T2/DS C	272	14
2										
4								T1/T		
6	GMP	20	Yae Won Park	KOREAN JOURNAL OF RADIOLOGY	1	5.93	7	1C/T2F/T2/DS C/D	88	10

WI										
2 4 7	GMP	20 23	Jingren Niu	Mathematical Biosciences and Engineering	3	2.12 7	3	T1/T 1C	131	9
2 4 8	GMP	20 23	Yan Liu	Quantitative Imaging in Medicine and Surgery	1	4.48 5	2	T1/T 1C/T 2F/T 2	302	9
2 4 9	GMP	20 23	Shing o Kihira	Cancers	2	6.88 6	1	T2F/ T2	103	10
2 5 0	GMP	20 23	Seyyed Ali Hoss eini	Cancers	2	6.88 6	1	T1C/ T2F	57	9
2 5 1	GMP	20 22	Ailing He	Diagnostics	2	4.12 9	2	T1/T 1C/T 2F/T 2	99	10
2 5 2	GMP	20 23	Sham imeh Ahra ri	Cancers	2	6.88 6	1	18F- FDO PA	57	9
2 5 3	GMP	20 23	Hongbo Zhang	Journal of Magnetic Resonance Imaging	1	4.80 1	1	T1/T 1C/T 2F/T 2	274	13
2 5 4	GMP	20 21	Wei- yuan Huang	Journal Of Computer Assisted Tomography	1	1.79 8	3	T1/T 1C/T 2F/T 2	59	7
2 5 5	GMP	20 23	Yang Guo	Journal of Magnetic Resonance Imaging	1	4.80 1	1	T1/T 1C/T 2F/T 2/A DC	894	12
2 5 6	GMP	20 23	Souha Aouadi	Biomedical Physics & Engineering Express	3	1.39 8	3	T1/T 1C/T 2F/T 2	369	10
2 5 7	GMP	20 21	Jianhong Chen g	IEEE JOURNAL OF BIOMEDICAL AND	2	6.96 8	1	T1/T 1C/T 2F/T 2	446	12

HEALTH INFORMATICS										
2			Shen	JOURNAL OF				T1/T		
5		20	Zhon	NEUROSURG		5.26		1C/T		
8	GMP	22	g	ERY	2	6	1	2	329	10
2			Zhen							
5		20	hua	Future		3.39				
9	GMP	21	Wan	Oncology	2	2	3	T2F	108	14
2			Takas	JOURNAL OF						
6		20	hi	COMPUTER						
0	GMP	21	Hash	ASSISTED		1.79		ADC		
			ido	TOMOGRAP	1	8	3	/ASL	52	7

goal of the research:DD, differential diagnosis; TR, treatment response; PP, prognosis prediction; GMP, grading or molecular typing. Journal type:1, imaging journals; 2, clinical journals; 3, comprehensive journals.

Table S5. A pairwise comparison of the type of study and the type of journal within each subgroup

	Ima				DD					
Radiomics	-				X-	DD				G
quality score	Co	Ima-	Com-	DDX-	GM	X-	RTT-	RTT	MP	
score(points)	m	Cli	Cli	RTT	P	PP	GMP	-PP	-PP	
								0.00	0.1	
Total	NA	NA	NA	0.62	1	0	1	7	33	
Domain 1	1	0.036	0.765	1	0.81	0.0	1	0.01	1	

Multivariable									
analysis with									
non-						<		<	
radiomics				<		0.0		0.00	0.0
features	NA	NA	NA	0.001	0	01	0.746	1	05
Detect and									
discuss									
biological						0.0			0.0
correlates	NA	NA	NA	0.193	1	09	0.141	1	08
Comparison						<		<	
to 'gold				<	0.04	0.0		0.00	0.0
standard'	NA	NA	NA	0.001	5	01	0.061	1	69
Potential					0.54	0.0			
clinical utility	NA	NA	NA	0.029	2	51	1	1	1
								0.00	0.0
Domain 4	NA	NA	NA	0.035	0	0	1	1	02
						<		<	<
Cut-off						0.0		0.00	0.0
analyses	NA	NA	NA	0.379	1	01	1	1	01
Discriminatio								0.25	
n statistics	NA	NA	NA	0.244	1	1	0.197	4	1
Calibration				<	0.00	<		<	0.0
statistics	NA	NA	NA	0.001	4	0.0	0.165	0.00	11

						01		1	
						0.0			0.1
Domain 5	NA	NA	NA	1	1	01	0.001	1	09
Prospective study registered in a trial database	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cost- effectiveness analysis						0.00			< 0.0 01
	NA	NA	NA	1	1	1	0	1	01
Domain 6									
open science and data						0.01	0.0		
	NA	NA	NA	0.062	8	52	1	1	1

Ima, imaging journals; Cli, clinical journals; Com, comprehensive journals; DD, differential diagnosis; TR, treatment response; PP, prognosis prediction; GMP, grading or molecular typing.