Supplementary Materials: Radiomics Analysis in Characterization of Salivary Gland Tumors on MRI: A Systematic Review

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Table S1. Details of radiomics protocols used in each included study.

Study ID	Image acquisition and segmentation				Feature extraction and selection		Model	
	Investigated sequence(s)	ROI/VOI	Segmentation	Intra-observer (ICC)	Features selection method	Feature Validation	Classifier	Classifier Validation
1	DWI	Whole tumor	manual	> 0.75	PCC value, RFE algorithm	5-fold cross-validation	LDA	internal validation
2	T2WI	Whole tumor	manual	NA	Wilcoxon rank-sum test, PCC value	NA	SVM	NA
3	T1WI, fs-T2WI	Whole tumor	Manual	> 0.75	LASSO, ANOVA	10-fold cross-validation	LR	external validation
4	T1WI, T2WI CE-T1WI	Two slices	Manual/ automatic	NA	An operator-independent statistical system	NA	LR	cross-validation
5	DWI	VOI whole tumor	Manual	>0.75	LASSO, ANOVA	5-fold cross-validation	LR, SVM, KNN	cross-validation
6	T1WI, T2WI CE-T1WI	Whole tumor	Manual	>0.75	LASSO, The Select K Best	10-fold cross-validation	XGBoost, SVM, DT	internal validation
7	T1WI, T2WI	Whole tumor	Semiautomatic	NA	PCC	Bootstrap	NA	internal validation
8	T1WI, fs-T2WI	Whole tumor	Manual	>0.75	LASSO, ANOVA	10-fold cross-validation	NA	external validation
9	T1WI; CE-T1WI T2WI, DWI, DCE	Whole tumor	Manual	NA	AIC, BIC	Leave-one-out cross-validation	LDA, SVM	Cross-validation
10	T1WI T2WI	NA	Manual	>0.75	LASSO, t-test, Mann–Whitney U test	10-fold cross-validation	LR, SVM	internal validation
11	T1WI, fs-T2WI CE-T1WI	NA	Manual	NA	LASSO, t-test, Wilcoxon rank-sum test	10-fold cross-validation	LR	cross-validation
12	T1WI, T2WI	NA	Automatic	NA	LASSO	10-fold cross-validation	NA	NA
13	T2WI	Whole tumor	Manual	>0.75	LASSO, t-test	5-fold cross-validation	LR	internal validation
14	T2WI	Whole tumor	Manual	NA	Kruskal–Wallis test	NA	LR, SVM, NNET DT	internal validation

AIC: Akaike Information Criterion, ANOVA: One-way analysis of variance, BIC: Schwarz Bayesian Information Criterion, CE: contrast enhanced, DCE: dynamic contrast enhanced, DT: Decision tree, DWI: diffusion-weighted imaging, FS: fat saturation, ICC: intra-class correlation coefficient, KNN: K-nearest neighbor, LASSO: least absolute shrinkage and selection operator, LDA: linear discriminant analysis, LR: logistic regression, NA: not available, NNET: artificial neural network, PCC: Pearson correlation coefficient, RFE: recursive feature elimination, ROI/VOI: region/volume of interest, SVM: support vector machine, T1WI: T1 weighted image, T2WI: T2 weighted image, XGBoost: Extreme gradient boosting.

Table S2. QUADAS-2 assessment for each study.

Study	RISK OF BIAS				APPLICABILITY CONCERNS		
	PATIENT SELECTION	INDEX TEST	REFERENCE STANDARD	FLOW AND TIMING	PATIENT SELECTION	INDEX TEST	REFERENCE STANDARD
Study 1	☺	☺	☺	?	☺	☺	☺
Study 2	?	☺	☺	?	☺	☺	☺
Study 3	☺	☺	☺	?	☺	☺	☺
Study 4	☺	☺	☺	?	☺	☺	☺
Study 5	☺	☺	☺	?	☺	☺	☺
Study 6	☺	☺	☺	?	☺	☺	☺
Study 7	☺	☺	☺	?	☺	☺	☺
Study 8	☺	☺	☺	?	☺	☺	☺
Study 9	?	☺	☺	?	☺	☺	☺
Study 10	?	☺	☺	?	☺	☺	☺
Study 11	?	☺	☺	?	☺	☺	☺
Study 12	☺	☺	☺	?	☺	☺	☺
Study 13	☺	☺	☺	?	☺	☺	☺
Study 14	?	☺	☺	?	☺	☺	☺

☺ Low Risk   ☹ High Risk   ? Unclear Risk; QUADAS-2: Quality Assessment of Diagnostic Accuracy Studies-2.

Table S3. Individual and summarized RQS scores for each study.

Study ID	Image protocol	Multiple segmentations	Phantom study on all scanners	Multiple time points	Feature reduction	Non-radiomics features	Biological correlates	Cut-off	Discrimination	Calibration	Prospective study	Validation	Comparison to gold standard	Potential clinical utility	Cost-effectiveness analysis	Open science	Total
1	1	1	0	0	3	0	0	0	2	0	0	2	2	0	0	0	11
2	1	0	0	0	3	0	1	0	1	0	0	2	2	2	0	0	12
3	1	1	0	0	3	1	0	0	1	1	0	3	2	2	0	0	15
4	1	0	0	0	3	0	1	0	1	0	0	2	2	2	0	0	12
5	1	1	0	0	3	0	1	0	2	0	0	2	2	0	0	0	12
6	1	1	0	0	3	0	0	0	2	0	0	2	2	2	0	0	13
7	1	0	0	0	3	1	1	0	1	1	0	2	2	2	0	0	14
8	1	1	0	0	3	1	1	0	1	1	0	3	2	2	0	0	16
9	1	0	0	0	3	1	0	0	2	0	0	2	2	0	0	0	11
10	1	1	0	0	3	0	0	0	1	1	0	2	2	2	0	0	13
11	1	0	0	0	3	0	0	0	2	0	0	2	2	0	0	0	11
12	1	0	0	0	3	1	1	0	1	1	0	2	2	2	0	0	14
13	1	1	0	0	3	1	0	0	1	1	0	2	2	2	0	0	14
14	1	1	0	0	3	1	1	0	1	0	0	2	2	0	0	0	12

RQS: radiomics quality score.