

# Results

## Comparatii date clinice1

Independent Samples T-Test

	t	df	p
Varsta	0.177	71	0.860

Note. Student's t-test.

## Comparatii date clinice2

Contingency Tables

tiphistologic	Mutatie_patogena_prezenta		Total
	0	1	
1	23	26	49
2	7	9	16
3	6	1	7
4	1	0	1
Total	37	36	73

Chi-Squared Tests

	Value	df	p
X²	4.992	3	0.172
N	73		

Contingency Tables

Grad	Mutatie_patogena_prezenta		Total
	0	1	
0	3	0	3
1	0	2	2
2	22	16	38
3	12	18	30
Total	37	36	73

Chi-Squared Tests

	Value	df	p
X²	7.135	3	0.068
N	73		

Contingency Tables

ER	Mutatie_patogena_prezenta		Total
	0	1	
0	12	14	26
1	25	22	47
Total	37	36	73

Chi-Squared Tests

	Value	df	p
X²	0.332	1	0.565
N	73		

Contingency Tables

PR	Mutatie_patogena_prezenta		Total
	0	1	
0	21	18	39
1	16	18	34
Total	37	36	73

Chi-Squared Tests

	Value	df	p
X²	0.335	1	0.563
N	73		

Contingency Tables

KI67cutoff	Mutatie_patogena_prezenta		Total
	0	1	
0	12	3	15
1	25	33	58
Total	37	36	73

Chi-Squared Tests

	Value	df	p
X²	6.491	1	0.011
N	73		

HER2	Mutatie_patogena_prezenta		Total
	0	1	
negativ	31	30	61
pozitiv	6	6	12
Total	37	36	73

Chi-Squared Tests

	Value	df	p
X²	0.003	1	0.959
N	73		

RadScore REZ. FINALE cu VAR CLINICE RandomForest

Model Summary: Random Forest Classification

Trees	Features per split	n(Train)	n(Validation)	n(Test)	Validation Accuracy	Test Accuracy	OOB Accuracy
51	1	46	12	14	0.500	0.929	0.526

Note. The model is optimized with respect to the *out-of-bag accuracy*.

Data Split



Confusion Matrix

	Predicted		
	0	1	
Observed	0	6	0
	1	1	7

Model Performance Metrics

	0	1	Average / Total
Support	6	8	14
Accuracy	0.929	0.929	0.929
Precision (Positive Predictive Value)	0.857	1.000	0.939
Recall (True Positive Rate)	1.000	0.875	0.929
False Positive Rate	0.125	0.000	0.063
False Discovery Rate	0.143	0.000	0.071
F1 Score	0.923	0.933	0.929
Matthews Correlation Coefficient	0.866	0.866	0.866
Area Under Curve (AUC)	0.990	1.000	0.995
Negative Predictive Value	1.000	0.857	0.929
True Negative Rate	0.875	1.000	0.938
False Negative Rate	0.000	0.125	0.063
False Omission Rate	0.000	0.143	0.071
Threat Score	3.000	7.000	5.000
Statistical Parity	0.500	0.500	1.000

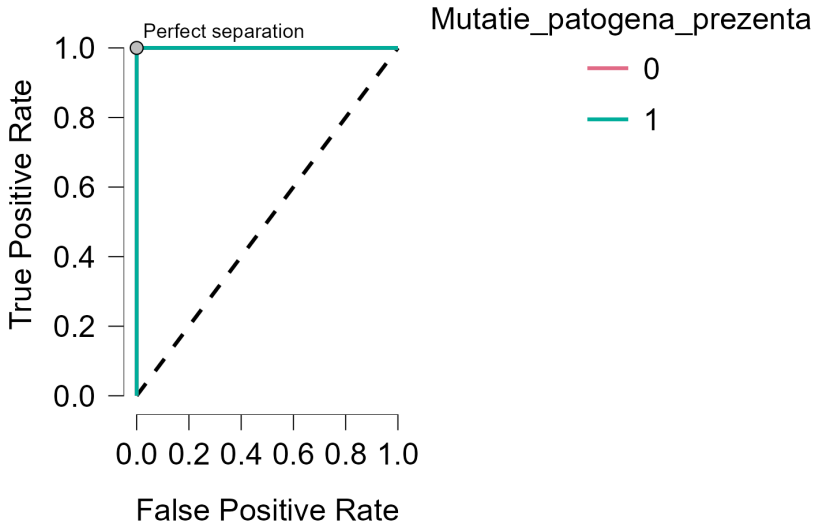
*Note.* All metrics are calculated for every class against all other classes.

Feature Importance Metrics

	Mean decrease in accuracy	Total increase in node purity	Mean dropout loss
RadScore1	0.036	0.070	0.448
KI67cutoff	0.022	0.024	0.370

*Note.* Mean dropout loss (defined as 1 - area under curve (AUC)) is based on 50 permutations.

ROC Curves Plot



K-Nearest Neighbors Classification

Model Summary: K-Nearest Neighbors Classification

Nearest neighbors	Weights	Distance	n(Train)	n(Validation)	n(Test)	Validation Accuracy	Test Accuracy
1	rectangular	Euclidean	46	12	14	0.500	0.786

Note. The model is optimized with respect to the validation set accuracy.

Data Split



Confusion Matrix

	Predicted	
	0	1
Observed	053	106

Model Performance Metrics

	0	1	Average / Total
Support	8	6	14
Accuracy	0.786	0.786	0.786
Precision (Positive Predictive Value)	1.000	0.667	0.857
Recall (True Positive Rate)	0.625	1.000	0.786
False Positive Rate	0.000	0.375	0.188
False Discovery Rate	0.000	0.333	0.167
F1 Score	0.769	0.800	0.782
Matthews Correlation Coefficient	0.645	0.645	0.645
Area Under Curve (AUC)	0.813	0.813	0.813
Negative Predictive Value	0.667	1.000	0.833
True Negative Rate	1.000	0.625	0.813
False Negative Rate	0.375	0.000	0.188
False Omission Rate	0.333	0.000	0.167
Threat Score	1.667	1.000	1.333
Statistical Parity	0.357	0.643	1.000

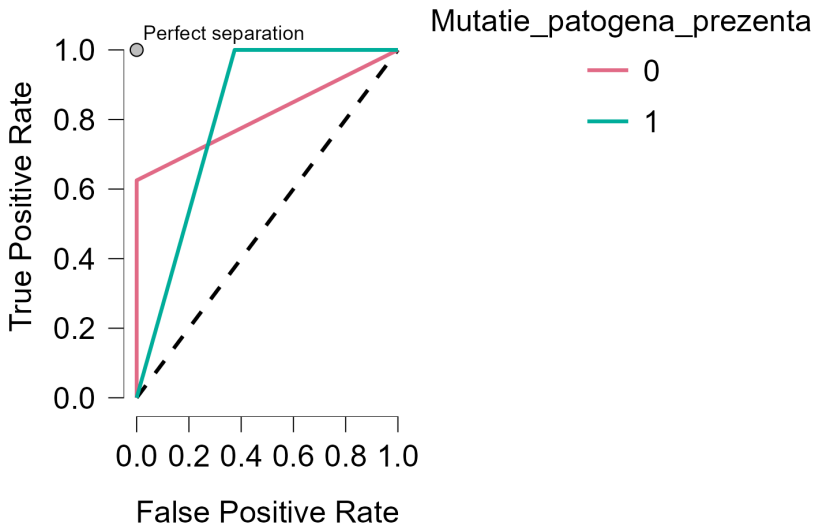
*Note.* All metrics are calculated for every class against all other classes.

Feature Importance Metrics

Mean dropout loss	
RadScore1	0.441
KI67cutoff	0.184

*Note.* Mean dropout loss (defined as 1 - area under curve (AUC)) is based on 50 permutations.

ROC Curves Plot



Support Vector Machine Classification

Model Summary: Support Vector Machine Classification

Violation cost	Support Vectors	n(Train)	n(Validation)	n(Test)	Validation Accuracy	Test Accuracy
0.010	46	46	12	14	0.583	0.786

Data Split



Confusion Matrix

	Predicted	
	0	1
Observed	0	6
	1	5

Model Performance Metrics

	0	1	Average / Total
Support	8	6	14
Accuracy	0.786	0.786	0.786
Precision (Positive Predictive Value)	0.857	0.714	0.796
Recall (True Positive Rate)	0.750	0.833	0.786
False Positive Rate	0.167	0.250	0.208
False Discovery Rate	0.143	0.286	0.214
F1 Score	0.800	0.769	0.787
Matthews Correlation Coefficient	0.577	0.577	0.577
Area Under Curve (AUC)	0.792	0.792	0.792
Negative Predictive Value	0.714	0.857	0.786
True Negative Rate	0.833	0.750	0.792
False Negative Rate	0.250	0.167	0.208
False Omission Rate	0.286	0.143	0.214
Threat Score	1.500	1.000	1.250
Statistical Parity	0.500	0.500	1.000

*Note.* All metrics are calculated for every class against all other classes.

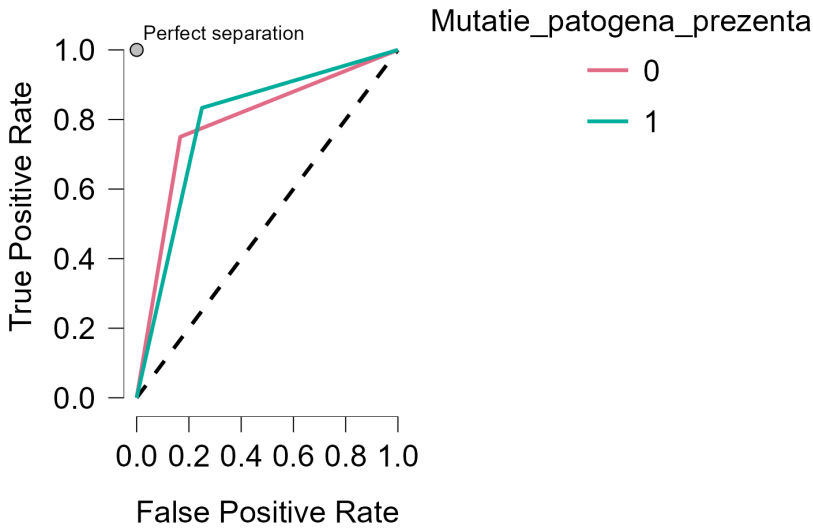
Feature Importance Metrics

Mean dropout loss	
RadScore1	0.480
KI67cutoff	0.296

*Note.* Mean dropout loss (defined as 1 - area under curve (AUC)) is based on 50 permutations.



ROC Curves Plot



Boosting Classification

Model Summary: Boosting Classification

Trees	Shrinkage	n(Train)	n(Validation)	n(Test)	Validation Accuracy	Test Accuracy
3	0.100	46	12	14	0.667	0.786

Note. The model is optimized with respect to the *out-of-bag accuracy*.

Data Split



Confusion Matrix

	Predicted	
	0	1
Observed	06	2
	11	5

Model Performance Metrics

	0	1	Average / Total
Support	8	6	14
Accuracy	0.786	0.786	0.786
Precision (Positive Predictive Value)	0.857	0.714	0.796
Recall (True Positive Rate)	0.750	0.833	0.786
False Positive Rate	0.167	0.250	0.208
False Discovery Rate	0.143	0.286	0.214
F1 Score	0.800	0.769	0.787
Matthews Correlation Coefficient	0.577	0.577	0.577
Area Under Curve (AUC)	0.781	0.781	0.781
Negative Predictive Value	0.714	0.857	0.786
True Negative Rate	0.833	0.750	0.792
False Negative Rate	0.250	0.167	0.208
False Omission Rate	0.286	0.143	0.214
Threat Score	1.500	1.000	1.250
Statistical Parity	0.500	0.500	1.000

*Note.* All metrics are calculated for every class against all other classes.

Feature Importance Metrics

	Relative Influence	Mean dropout loss
RadScore1	100.000	0.507
KI67cutoff	0.000	0.268

*Note.* Mean dropout loss (defined as 1 - area under curve (AUC)) is based on 50 permutations.