

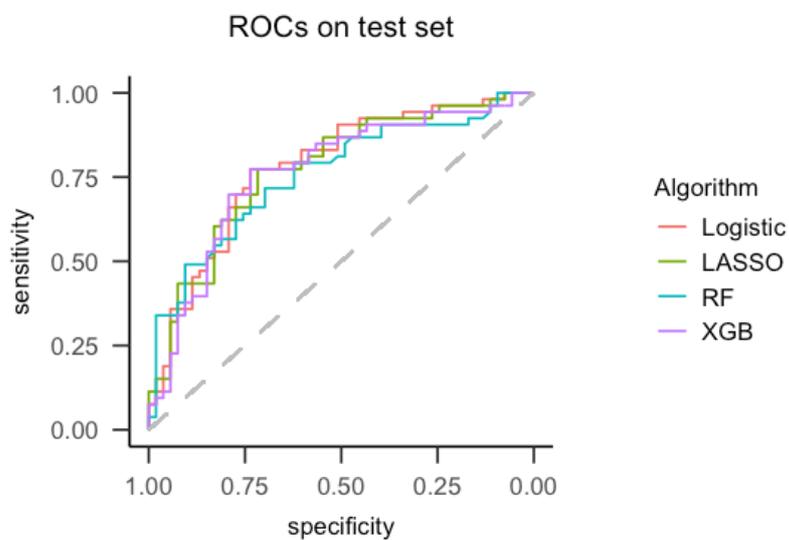
## Supplementary Files

**Table S1.** Algorithm performances on the train set (N = 249)

Algorithm	AUC
Logistic regression	0.72
LASSO regression	0.73
Random Forest	0.71
XGBoost	0.73

Algorithms performances are the result of 10-fold cross validation on the train set. 50% were insufficient responders. Insufficient response was determined at 3 months (DAS28>3.2)

**Supplementary Figure S1.** ROC curve of models tested on test set (N=106) after feature selection.



Features included in the model were: TJC28, HAQ, BMI, smoking, ESR, DMARD/cortico use  
Logistic= logistic regression, LASSO= LASSO regression, RF= random forest, XGB= XGBoost

**Supplementary Figure S2.** Confusion matrices on test set (N=106) after feature selection. Features included in the model were: TJC28, HAQ, BMI, smoking, ESR, DMARD/cortico use. Thresholds were chosen where sensitivity was highest and specificity was at least 0.60. Grey-scale cells are correctly identified patients. IR=insufficient responder (DAS28 >3.2), R=sufficient responder (DAS28 ≤3.2)

**Logistic regression**

		Actual response	
		IR (DAS28>3.2)	R (DAS28 ≤3.2)
Predicted	IR	44	21
	R	9	32

**LASSO**

		Actual response	
		IR (DAS28>3.2)	R (DAS28 ≤3.2)
Predicted	IR	42	21
	R	11	32

**Random Forest**

		Actual response	
		IR (DAS28>3.2)	R (DAS28 ≤3.2)
Predicted	IR	42	20
	R	11	33

**XGBoost**

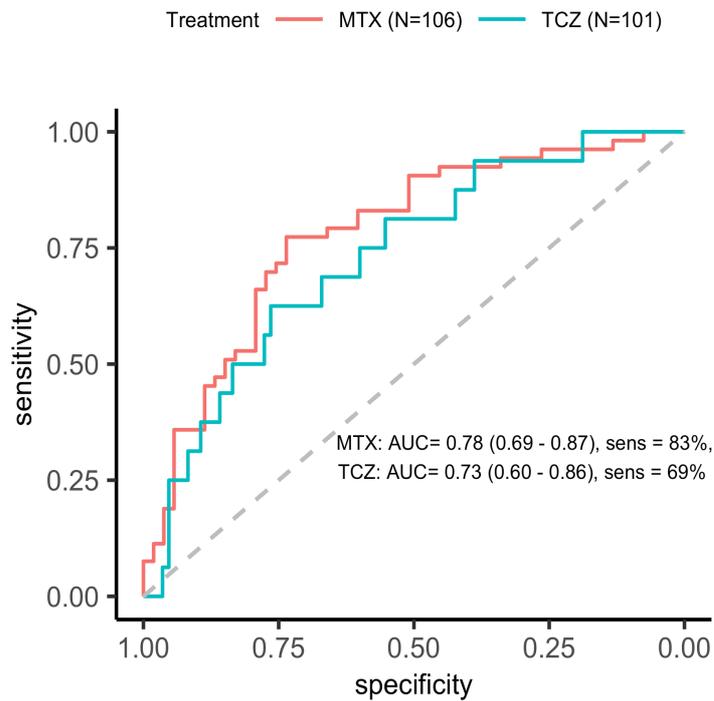
		Actual response	
		IR (DAS28>3.2)	R (DAS28 ≤3.2)
Predicted	IR	42	20
	R	11	33

**Figure S3. Confusion matrix of logistic regression on TCZ monotherapy group**

		Actual response	
		IR (DAS28>3.2)	R (DAS28 ≤3.2)
Predicted	IR	11	33
	R	5	52

IR=insufficient responder (DAS28 >3.2), R=sufficient responder (DAS28 ≤3.2)

**Supplementary Figure S4.** ROC curves of performance of final logistic regression model on test set MTX combination therapy and on TCZ monotherapy group.



Features included in the model: TJC28, HAQ, BMI, smoking, ESR, DMARD/corticosteroid use. Sensitivity in both groups was determined at its highest point for which the specificity was at least 0.60.

**Table S2.** Logistic regression on complete dataset (MTX combination + TCZ monotherapy)

	Estimate	St. error	P-value
Intercept	-3.15	0.73	<1.73 x 10 <sup>-5</sup>
Treatment (MTX combi)	0.86	0.82	0.29
Riskfactor	0.04	0.02	0.02
Treatment x riskfactor <sup>#</sup>	0.03	0.02	0.09

<sup>#</sup> Interaction term between predictors. Predictors included in calculation risk factor: BMI, HAQ, smoking, ESR, TJC28, DMARD/cortico use.