Title

Prediction of future gastric cancer risk using a machine learning algorithm and comprehensive medical check-up data: A case-control study

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Table S1. Results of predicting patients at risk of developing gastric cancer.

	TP[a]	FN[b]	FP[c]	TN[d]
Model A	12	3	86	186
Model B	15	0	103	169
Model C	13	2	87	185
Model D	15	0	68	204
Model E	14	1	63	209
Model F	0	15	0	272
Model G	0	15	0	272
Model H	15	0	105	167
Model I	0	15	2	270
Model J	9	6	27	245

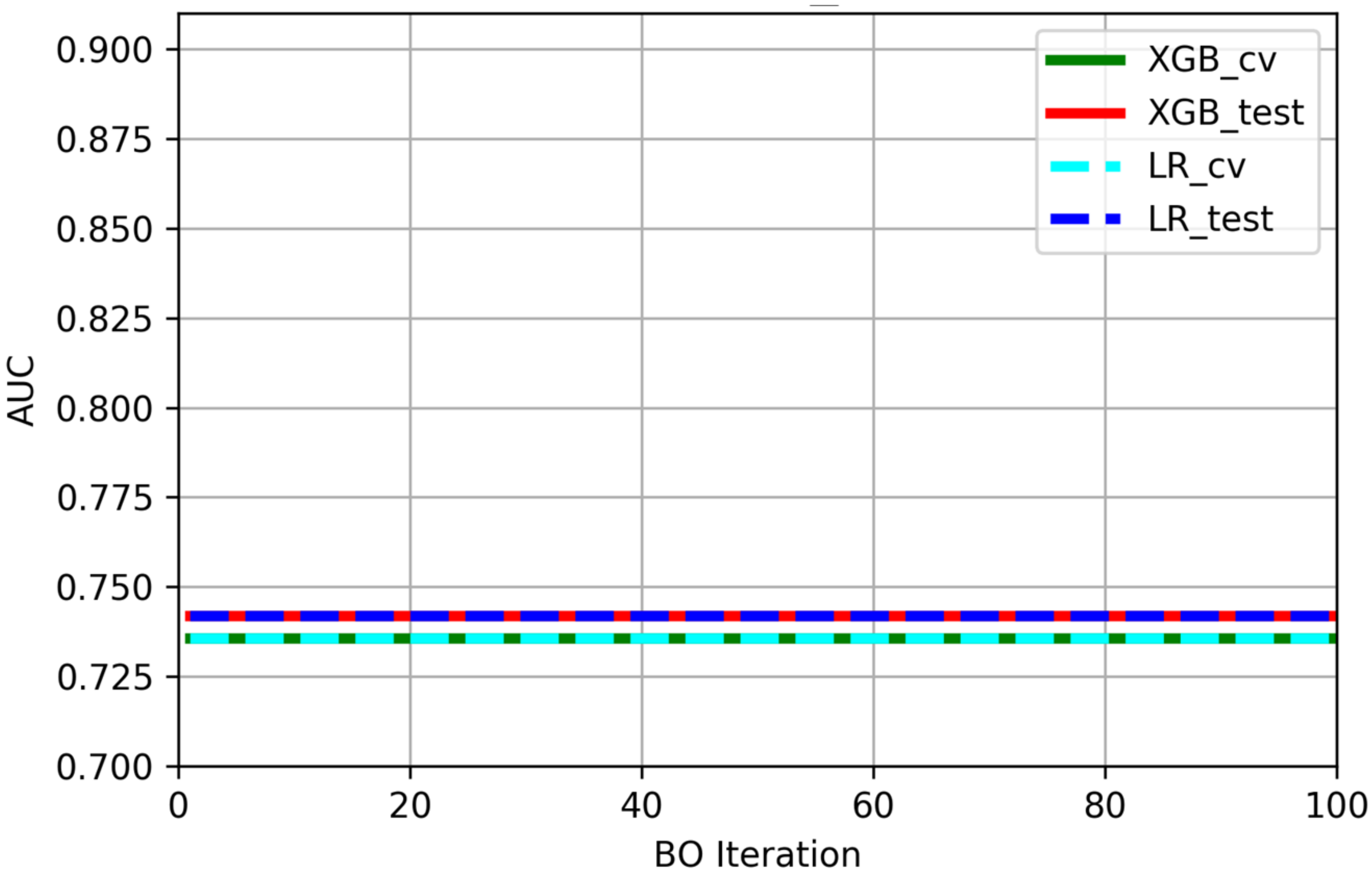
[a] True Positive, TP

[b] False Negative, FN

[c] False Positive, FP

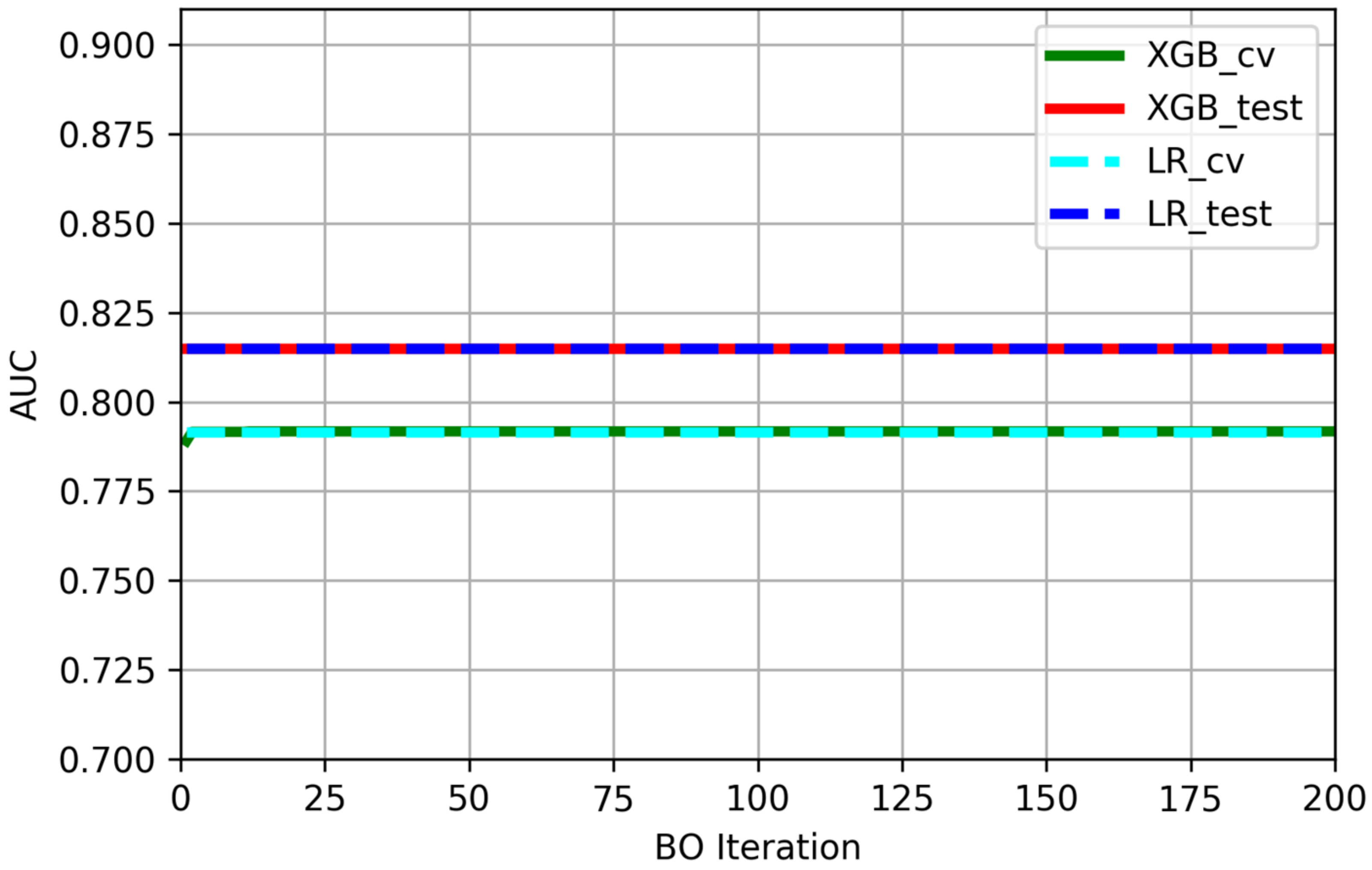
[d] True Negative, TN

Figure S1. Comparison of area under the curve (AUC) values between logistic regression and XGBoost in Models A and F.



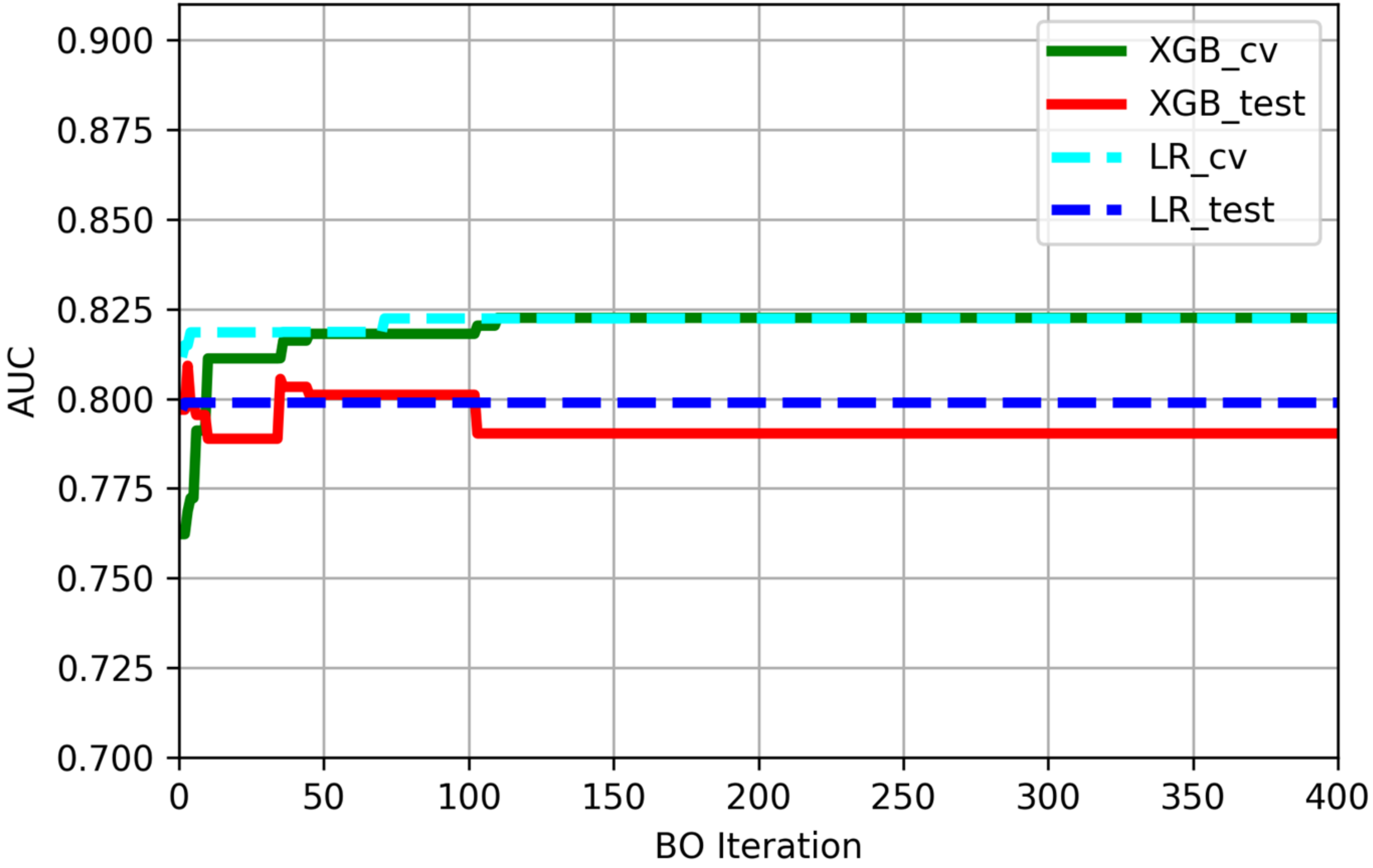
Bayesian optimisation (BO)

Figure S2. Comparison of area under the curve (AUC) values between logistic regression and XGBoost in Models B and G.



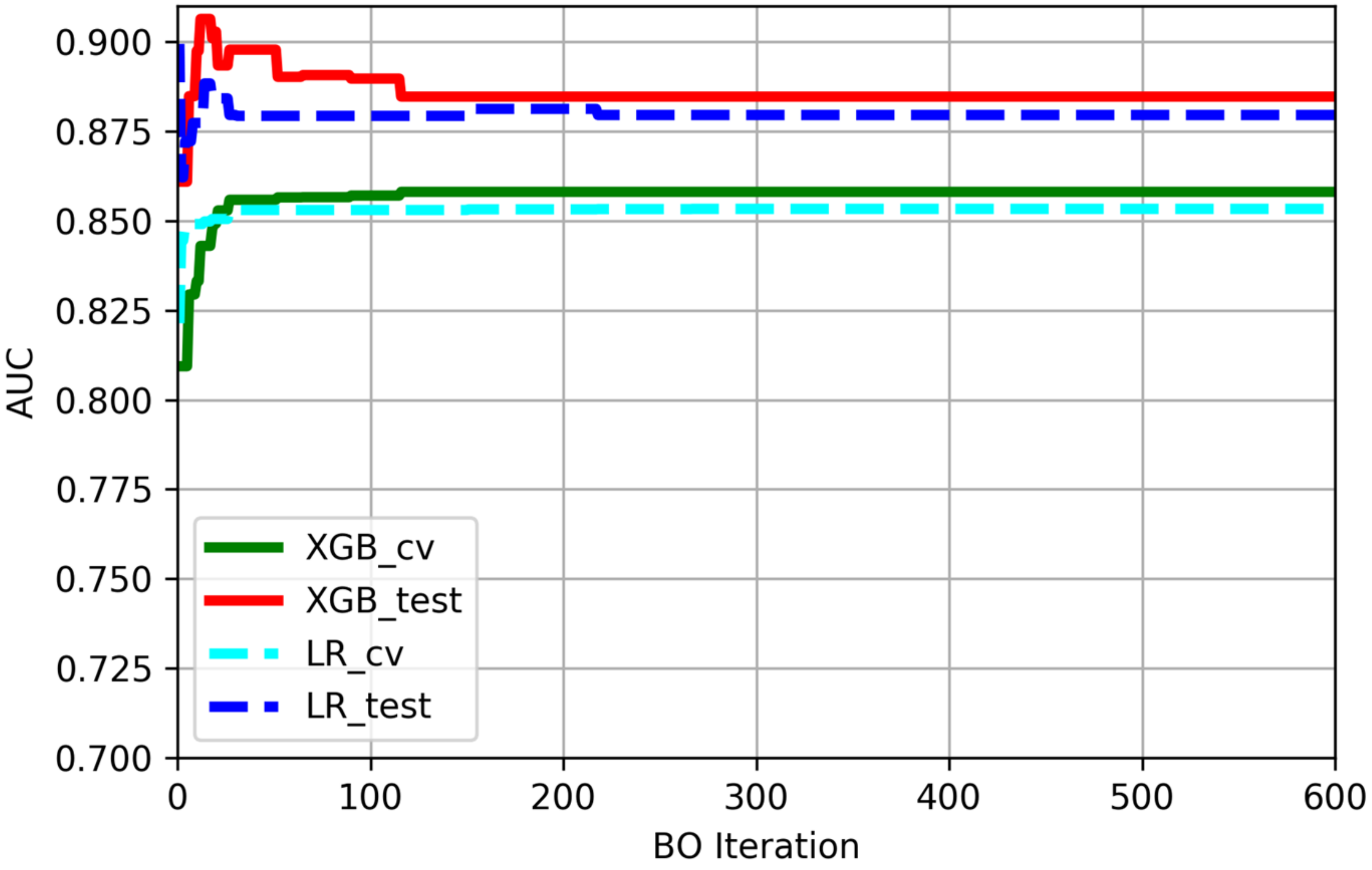
Bayesian optimisation (BO)

Figure S3. Comparison of area under the curve (AUC) values between logistic regression and XGBoost in Models C and H.



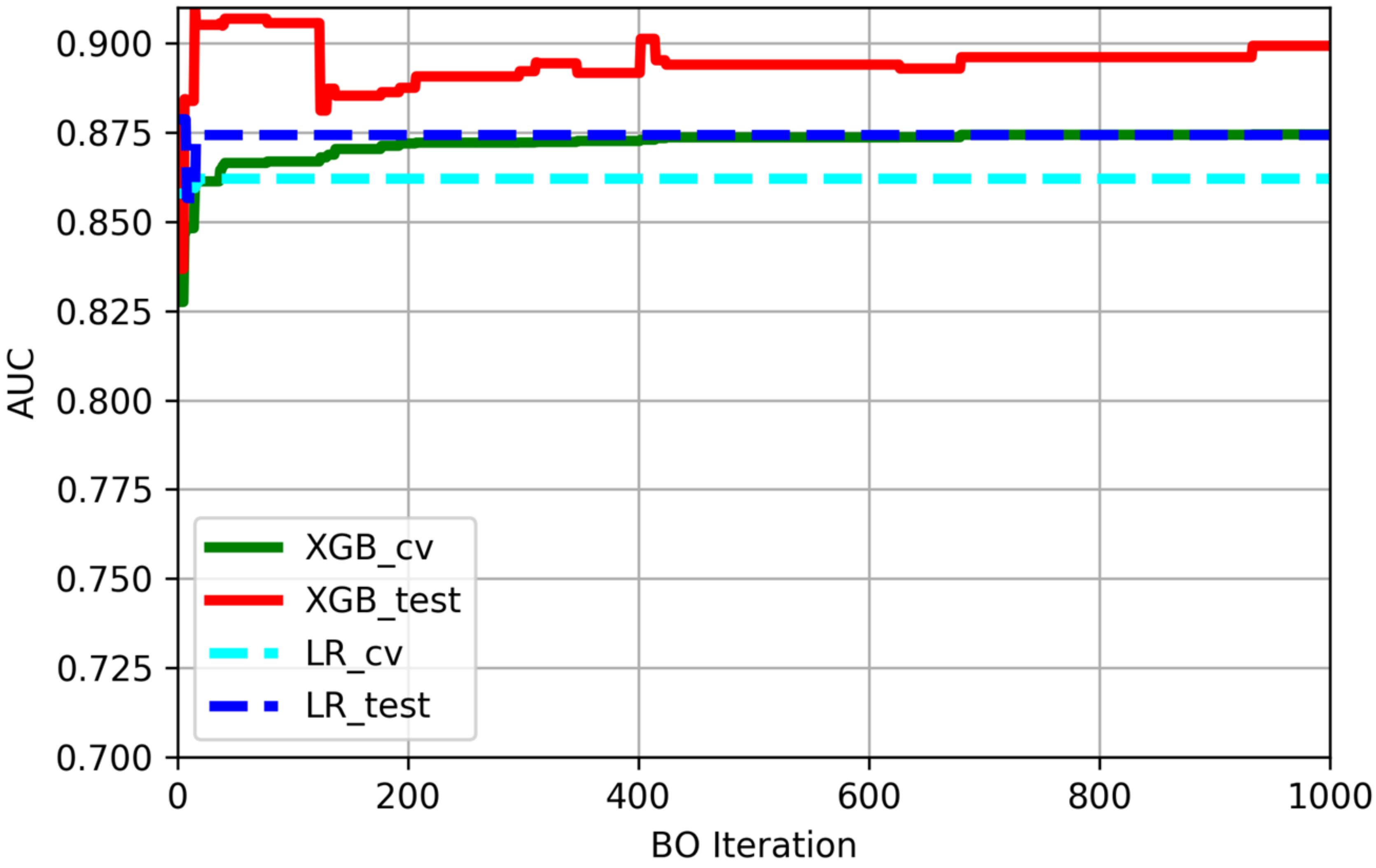
Bayesian optimisation (BO)

Figure S4. Comparison of area under the curve (AUC) values between logistic regression and XGBoost in Models D and I.



Bayesian optimisation (BO)

Figure S5. Comparison of area under the curve (AUC) values between logistic regression and XGBoost in Models E and J.



Bayesian optimisation (BO)

Table S2. Feature importance.

Model A	*H. pylori*[a] serology testing							
	1							
Model B	Chronic atrophic gastritis	*H. pylori* serology testing						
	0.647	0.353						
Model C	Chronic atrophic gastritis	Post-gastrectomy	Gastric or duodenal ulcers including scars	*H. pylori* serology testing	GERD[b] or Barrett's oesophagus			
	0.308	0.226	0.185	0.144	0.137			
Model D	Age	Chronic atrophic gastritis	*H. pylori* serology testing	Body mass index	Gastric or duodenal ulcers including scars	Post-gastrectomy	Sex	
	0.367	0.360	0.187	0.067	0.013	0.007	0.010	
Model E	Age	Mean corpuscular volume	Chronic atrophic gastritis	HbA1c	Lymphocyte ratio	*H. pylori* serology testing	Post-gastrectomy	Body mass index
	0.206	0.121	0.115	0.091	0.091	0.091	0.079	0.067

[a] *Helicobacter pylori, H. pylori*

[b] Gastroesophageal reflux disease, GERD

Table S3. Distribution of participants according to the number of upper gastrointestinal endoscopies.

Trials undergone	Patients with suspected gastric cancer	Patients without suspected gastric cancer
n	n	n
1	0	0
2	36	49
3	19	48
4	4	81
5	5	105
6	9	130
7	6	111
8	5	131
9	1	143
10	1	155
11	3	233
12	0	155
13	0	0
14	0	1