

Supplemental materials

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Figure S6. Backward feature elimination of the boosted tree model for adverse neonatal outcomes

Table S1. Predictor variables (base) considered in modeling

Demographic characteristics	Thrombin time (sec)
Maternal age at pregnancy (years)	Lymphocyte level (%)
BMI	Activated partial thromboplastin time (sec)
Gestational age at the diagnosis of gestational hypertension or pre-eclampsia (weeks)	Triglyceride (mmol/L)
Gravidity (n)	Blood white blood cell count ($\times 10^9/L$)
Parity (n)	Monocyte ratio (%)
	Basophils ratio (%)
Past medical history	Carbon dioxide combining power (mmol/L)
Previous gestational hypertension (y/n)	Serum chlorine (mmol/L)
Chronic hypertension (y/n)	Serum calcium (mmol/L)
Previous gestational diabetes mellitus (y/n)	Serum sodium (mmol/L)
Chronic diabetes mellitus (y/n)	Serum potassium (mmol/L)
Renal disease (y/n)	Serum phosphorus (mmol/L)
Symptoms	Renal tests
Nausea or vomiting (y/n)	24 h urine protein (mg/24 h)
Frontal headache (y/n)	Creatine ($\mu\text{mol/L}$)
Visual disturbance (y/n)	Uric acid ($\mu\text{mol/L}$)
Chest pain or dyspnea (y/n)	Urobilinogen ($\mu\text{mol/L}$)
Cardiorespiratory signs	Glucose in urine (mmol/L)
Diastolic blood pressure (mm Hg)	Urine white blood cell count (Leu/uL)
Systolic blood pressure (mm Hg)	Urine specific gravity
Mean arterial pressure (mm Hg)	Nitrites in urine (+/-)
Hydroxybutyrate dehydrogenase (U/L)	Hepatic tests
Creatine kinase (U/L)	Lactate dehydrogenase (U/L)
Creatine kinase isoenzymes (U/L)	Aspartate transaminase (U/L)
Hematological tests	Alanine transaminase (U/L)
Plateletcrit (%)	Gamma-glutamyl transferase (U/L)
Platelet count ($\times 10^9/L$)	Total bile acid ($\mu\text{mol/L}$)
Prothrombin time (sec)	Bilirubin ($\mu\text{mol/L}$)
Mean corpuscular hemoglobin (pg)	Fetal assessments
Blood urea nitrogen (mmol/L)	Abdominal circumference (cm)
Globulin (g/L)	Head circumference (cm)
Fibrinogen (g/L)	Biparietal diameter (cm)
Mean corpuscular hemoglobin concentration (g/L)	Femur length (cm)
Platelet-large cell ratio (%)	Resistance index
Mean platelet volume (fL)	Pulsatility index
Platelet distribution width (fL)	Umbilical artery flow

Table S2. Univariate analyses of predictor variables ($p \leq 0.1$) for adverse maternal outcomes.

	OR (95% CI)	p value
Demographic characteristics		
Maternal age at pregnancy (years)	1.08 (1.03-1.13)	<0.001
Gestational age at the diagnosis of GH or PE (weeks)	0.87 (0.84-0.91)	<0.001
Symptoms		
Nausea or vomiting (y/n)	1.48 (0.91-2.31)	0.1
Chest pain or dyspnea (y/n)	2.65 (0.89-6.36)	0.048
Cardiorespiratory signs		
Hydroxybutyrate dehydrogenase (U/L)	1.00 (1.00-1.01)	<0.001
Hematological tests		
Plateletcrit (%)	1.00 (1.00-1.01)	<0.001
Platelet count ($\times 10^9/L$)	0.98 (0.98-0.99)	<0.001
Prothrombin time (sec)	0.45 (0.32-0.62)	<0.001
Mean corpuscular hemoglobin (pg)	1.32 (1.18-1.46)	<0.001
Blood urea nitrogen (mmol/L)	1.03 (1.02-1.04)	<0.001
Fibrinogen (g/L)	0.54 (0.40-0.74)	<0.001
Mean corpuscular hemoglobin concentration (g/L)	1.04 (1.02-1.06)	<0.001
Mean platelet volume (fL)	1.46 (1.24-1.72)	<0.001
Platelet-large cell ratio (%)	1.06 (1.03-1.08)	<0.001
Platelet distribution width (fL)	1.14 (1.05-1.25)	0.003
Thrombin time (sec)	1.08 (1.01-1.16)	0.022
Lymphocyte level (%)	1.05 (1.02-1.08)	0.002
Triglyceride (mmol/L)	0.90 (0.80-1.01)	0.1
Renal tests		
24 h urine protein (mg/24 h)	1.00 (1.00-1.00)	<0.001
Creatine ($\mu\text{mol/L}$)	1.01 (1.00-1.02)	<0.001
Uric acid ($\mu\text{mol/L}$)	1.00 (1.00-1.00)	<0.001

Hepatic tests

Lactate dehydrogenase (U/L)	1.00 (1.00-1.01)	<0.001
Aspartate transaminase (U/L)	1.03 (1.02-1.04)	<0.001
Alanine transaminase (U/L)	1.03 (1.02-1.04)	<0.001
Gamma-glutamyl transferase (U/L)	1.01 (1.00-1.02)	0.008
Total bile acid (umol/L)	1.04 (1.02-1.07)	<0.001

Fetal assessments

Abdominal circumference (cm)	0.86 (0.83-0.90)	<0.001
Head circumference (cm)	1.01 (1.00-1.02)	0.089
Biparietal diameter (cm)	0.59 (0.49-0.70)	<0.001
Femur length (cm)	0.53 (0.43-0.65)	<0.001
Resistance index	964 (42.0-22813)	<0.001
Umbilical artery flow	2.35 (1.65-3.28)	<0.001

OR = Odds Ratio, CI = Confidence Interval

Table S3. Univariate analyses of predictor variables ($p \leq 0.1$) for adverse neonatal outcomes.

	OR (95% CI)	p value
Demographic characteristics		
Maternal age at pregnancy (years)	1.06 (1.03-1.09)	<0.001
Gestational age at the diagnosis of GH or PE (weeks)	0.78 (0.75-0.81)	<0.001
Symptoms		
Frontal headache (y/n)	2.97 (2.09-4.19)	<0.001
Chest pain or dyspnea (y/n)	4.21 (2.17-8.06)	<0.001
Cardiorespiratory signs		
Hydroxybutyrate dehydrogenase (U/L)	1.01 (1.00-1.01)	<0.001
Creatine kinase (U/L)	1.00 (1.00-1.00)	<0.045
Creatine kinase isoenzymes (U/L)	1.00 (1.00-1.01)	0.029
Hematological tests		
Plateletcrit (%)	0.11 (0.01-1.34)	0.086
Platelet count ($\times 10^9/L$)	1.00 (1.00-1.00)	0.082
Prothrombin time (sec)	0.61 (0.50-0.73)	<0.001
Mean corpuscular hemoglobin (pg)	1.19 (1.12-1.27)	<0.001
Blood urea nitrogen (mmol/L)	1.29 (1.21-1.37)	<0.001
Fibrinogen (g/L)	0.55 (0.45-0.66)	<0.001
Mean corpuscular hemoglobin concentration (g/L)	1.04 (1.02-1.05)	<0.001
Platelet distribution width (fL)	0.81 (0.71-0.91)	<0.001
Thrombin time (sec)	1.12 (1.07-1.17)	<0.001
Activated partial thromboplastin time (sec)	1.08 (1.03-1.14)	0.001
Serum chlorine (mmol/L)	1.00 (1.00-1.01)	0.003
Serum potassium (mmol/L)	1.11 (1.04-1.19)	0.002
Renal tests		
24 h urine protein (mg/24 h)	1.00 (1.00-1.00)	<0.001
Creatine ($\mu\text{mol/L}$)	1.01 (1.01-1.02)	<0.001

Uric acid (umol/L)	1.00 (1.00-1.00)	<0.001
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Hepatic tests

Lactate dehydrogenase (U/L)	1.01 (1.00-1.01)	<0.001
Aspartate transaminase (U/L)	1.03 (1.02-1.04)	<0.001
Alanine transaminase (U/L)	1.03 (1.02-1.04)	<0.001
Gamma-glutamyl transferase (U/L)	1.02 (1.01-1.02)	<0.001
Total bile acid (umol/L)	1.11 (1.08-1.14)	<0.001

Fetal assessments

Head circumference (cm)	0.92 (0.89-0.95)	<0.001
Biparietal diameter (cm)	0.37 (0.33-0.42)	<0.001
Femur length (cm)	0.28 (0.23-0.32)	<0.001
Umbilical artery flow	4.95 (3.74-6.64)	<0.001

OR = Odds Ratio, CI = Confidence Interval

Figure S1. Machine learning methods screened for modeling adverse maternal outcomes

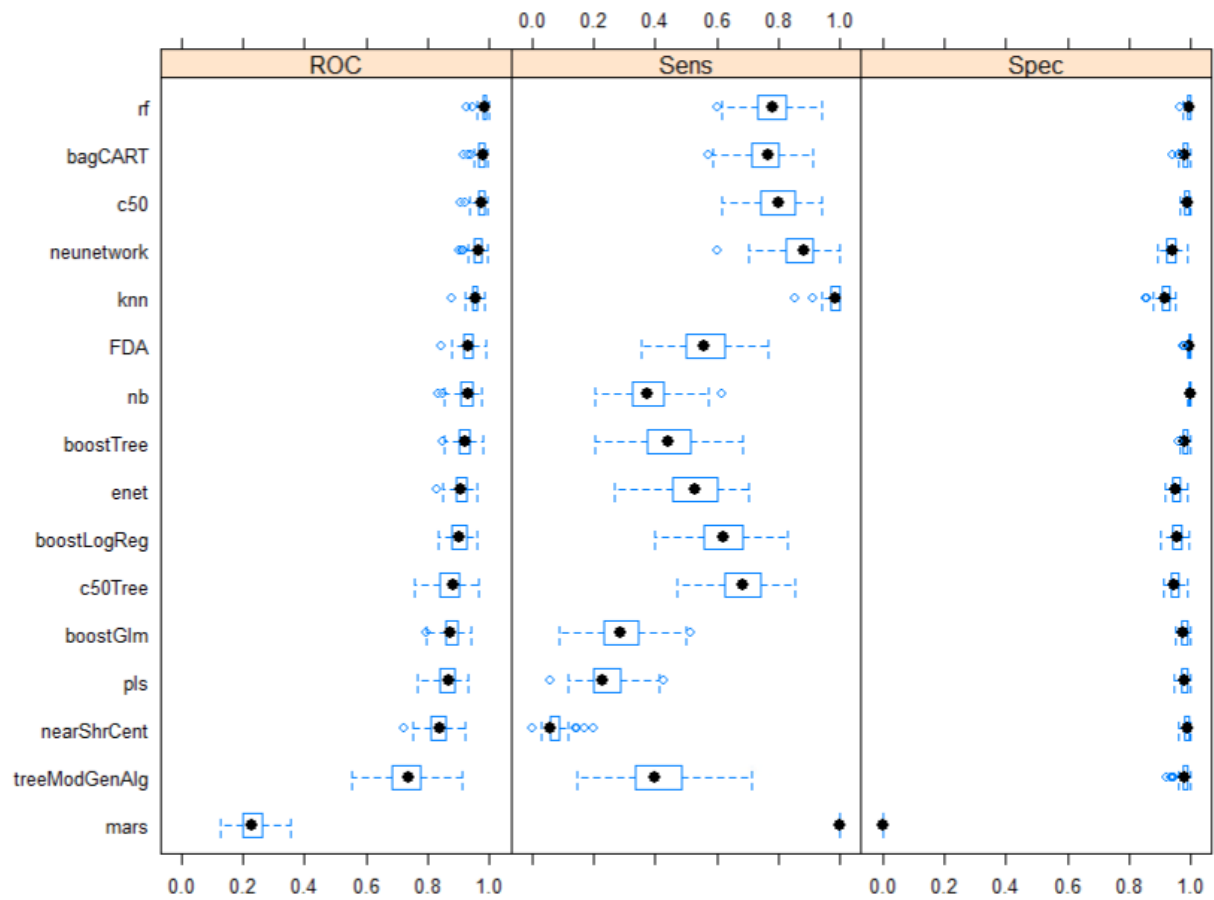


Figure S2. Features selected by the random forest method (highest AUC)

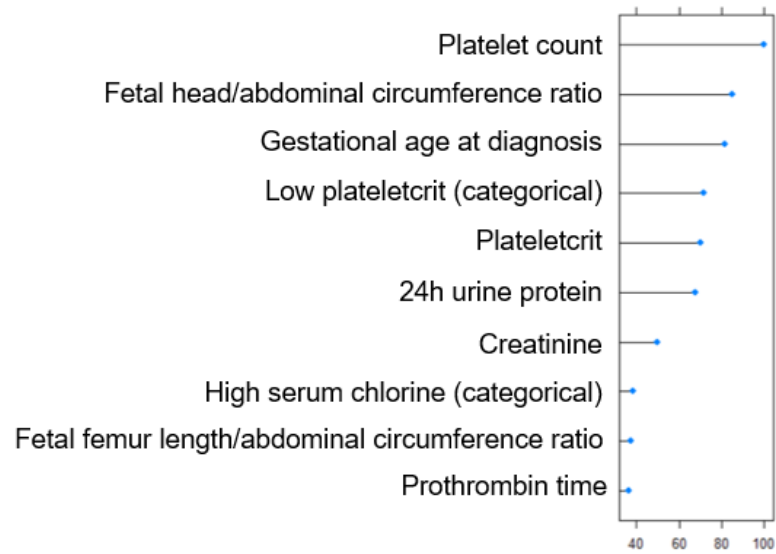


Figure S3. Machine learning methods screened for modeling adverse neonatal outcomes

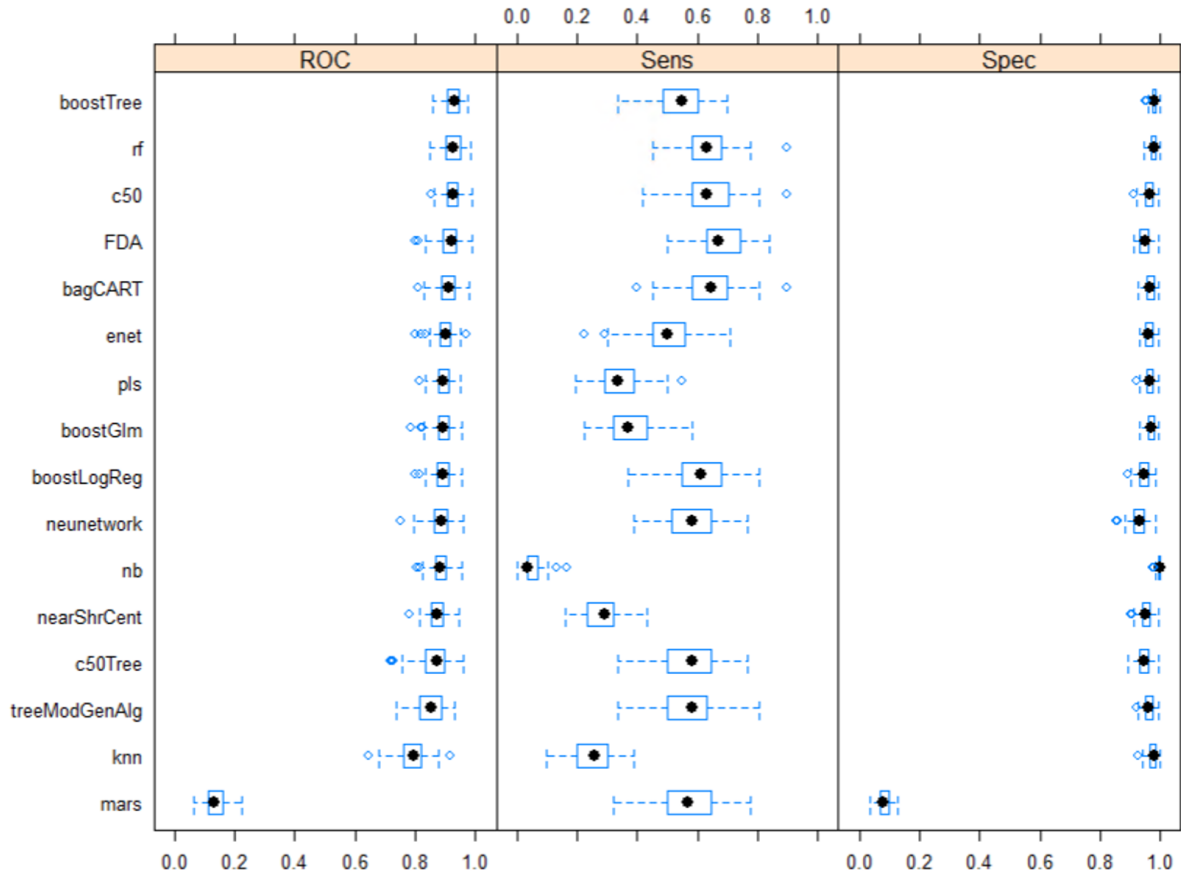


Figure S4. Features selected by the boosted tree method (highest AUC)

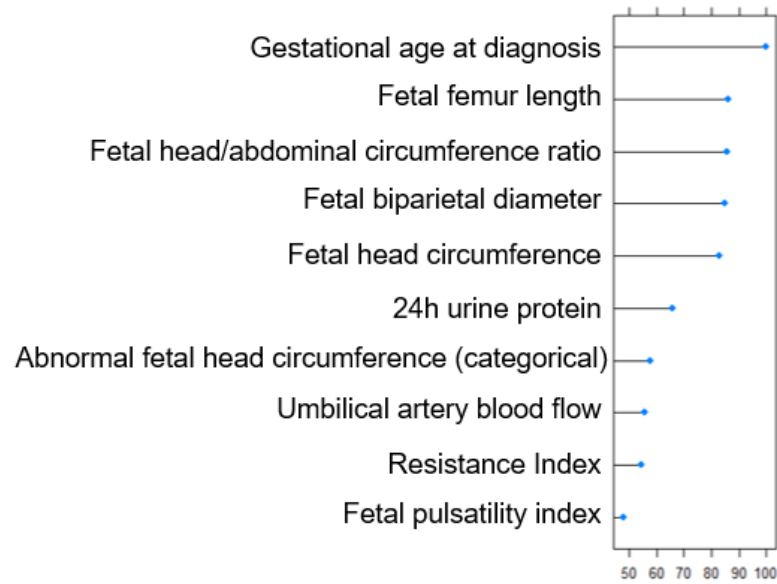


Figure S5. Backward feature elimination of the random forest model for adverse maternal outcome

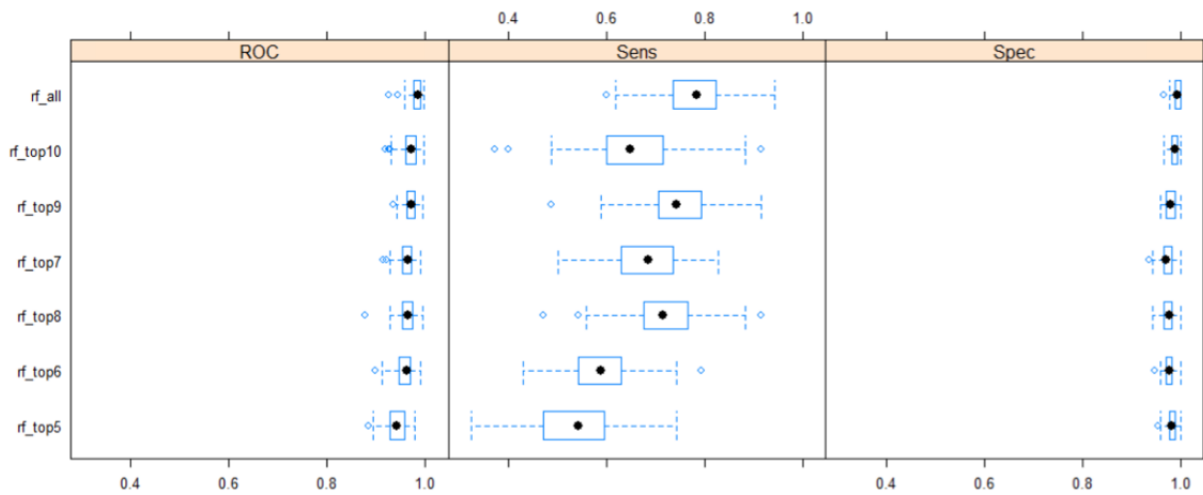


Figure S6. Backward feature elimination of the boosted tree model for adverse neonatal outcomes

