

Supplemental Table 1. General clinicopathological data of 1860 patients

Variable	All patient (n=1860)
Age	
<57	667(36.4%)
57-74	982(52.8%)
>74	201(10.8%)
SEX	
male	484(26.0%)
female	1376(74.0%)
BMI	
<18.5	193(10.4%)
18.5-23.5	1380(74.2%)
>23.5	287(15.4%)
CEA	
<2.8	1026 (55.2%)
2.8-4.8	369 (19.8%)
>4.8	391 (21.0%)
CA199	
<15.0	1162 (62.5%)
15.0-39.2	382 (20.5%)
>39.2	246 (13.2%)
SII	
<2.8	666 (35.8%)
2.8-4.8	797 (42.8%)
>4.8	397 (21.3%)
NLR	
<1.91	717 (38.5%)
1.91-3.87	880 (47.3%)
>3.87	263 (14.1%)
PLR	
<89.5	299 (16.1%)
89.5-162.3	882 (47.4%)
>162.3	679 (36.5%)
AGR	
<6.59	568 (30.5%)
6.59-7.81	701 (37.7%)
>7.81	591 (31.8%)
PNI	
<371	608 (32.7%)
371-430	860 (46.2%)

>430	392 (21.1%)
ASA	
I	1125 (60.5%)
II	663 (35.6%)
III-IV	72 (3.9%)
Comorbidity	
No	1315 (70.7%)
Yes	545 (29.3%)
Primary site	
Lower	767 (41.2%)
Middle	402 (21.6%)
Upper	472 (25.4%)
Overlapping	219 (11.8%)
Tumor Size, mm	
<30	648 (34.8%)
30-60	841 (45.2%)
>60	371 (19.9%)
cT	
T1	193 (10.4%)
T2	208 (11.2%)
T3	489 (26.2%)
T4	972 (52.2%)
cN	
Nx	11 (0.6%)
N0	767 (41.2%)
N1	430 (23.1%)
N2	410 (22.0%)
N3	242 (13.0%)
Follow up, month	46(3-91)

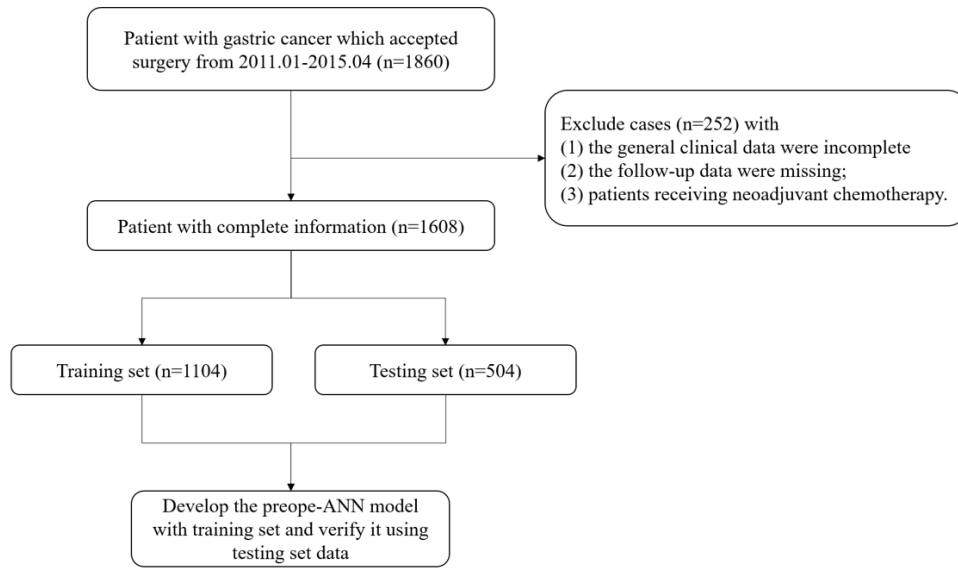
BMI, Body Mass Index; CEA, carcinoembryonic antigen; CA199, carbohydrate antigen 19-9; AFP, alpha fetoprotein; NLR, neutrophil-lymphocyte ratio; PLR, platelet-lymphocyte ratio; AGR, albumin-globulin ratio; PNI, the prognostic nutrition index; ASA, American Society of Anesthesiologists; cT, clinical T stage; cN, clinical N stage;

Supplemental Table 2. Prediction results of the preope-ANN

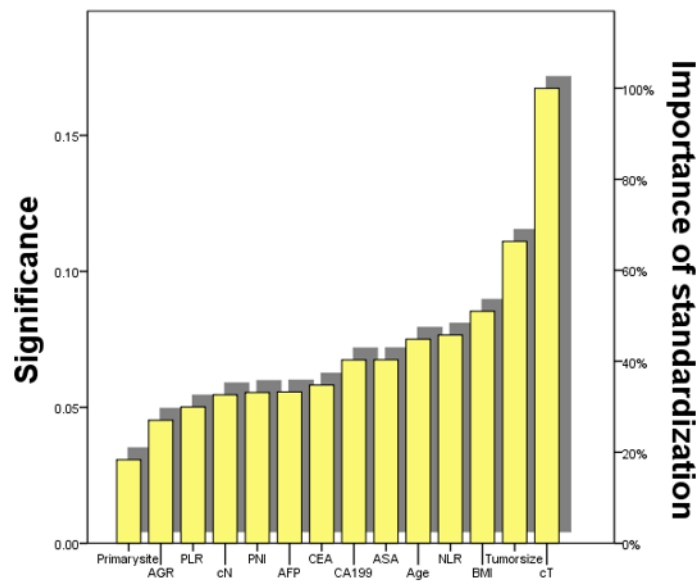
sample	Real situation	Predict outcome		Real percentage
		survival	death	
Training	survival	692	90	88.5%
	set	death	161	50.1%
	total	77.2%	22.8%	77.3%
Testing	survival	323	50	86.5%
	set	death	75	43.1%
	total	78.8%	21.2%	75.2%

Dependent variable : 3 year Overall Survival

Supplemental Fig 1. Inclusion criteria for this study



Supplemental Fig 2. The average absolute weight of each feature on all connected nodes in the input layer is visualized.



Supplemental Fig 3. (A) AJCC 8th cTNM Staging System, (B) AJCC 8th pTNM Staging System

A

AJCC8th cTNM	N0	N1	N2	N3
T1	I	II A	II A	II A
T2	I	II A	II A	II A
T3	II B	III	III	III
T4a	II B	III	III	III
T4b	IVA	IVA	IVA	IVA

B

AJCC8 th pTNM	N0	N1	N2	N3a	N3b
T1	I A	I B	II A	II B	IIIB
T2	I B	II A	II B	IIIA	IIIB
T3	II A	II B	IIIA	IIIB	IIIC
T4a	II B	IIIA	IIIA	IIIB	IIIC
4b	IIIA	IIIB	IIIB	IIIC	IIIC