A LASSO coefficient profiles of DFS

B LASSO tuning parameter selection of DFS
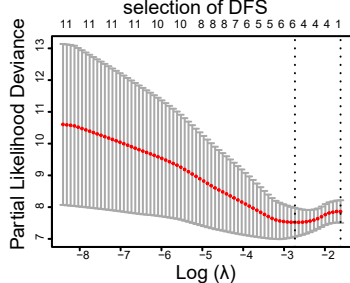
C Optimum subsets regression DFS error by Feature Inclusion
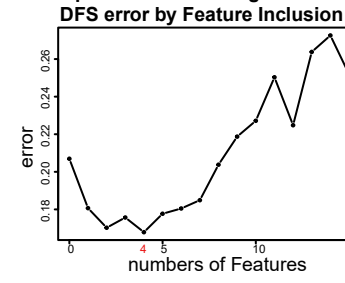
D Variables related to DFS chosen by stepwise regression

Age (N=70) 3.7 (1.31 – 10.3) 0.013 *

Tumor_size (N=70) 3.6 (1.15 – 11.4) 0.028 *

Stage_I_II_III (N=70) 1.6 (0.98 – 2.7) 0.058

Events: 20; Global p-value (Log-Rank): 9.2692e-05
AIC: 142.81; Concordance Index: 0.8
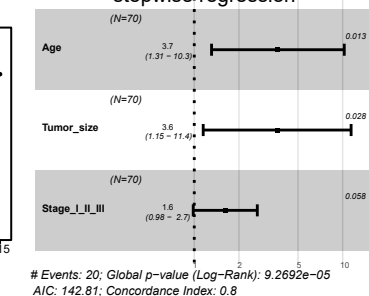
E LASSO coefficient profiles of OS
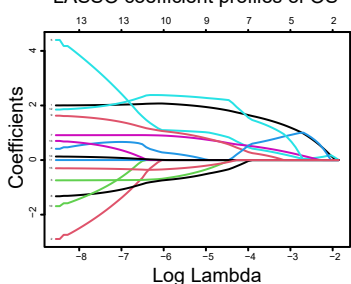
F LASSO tuning parameter selection of OS
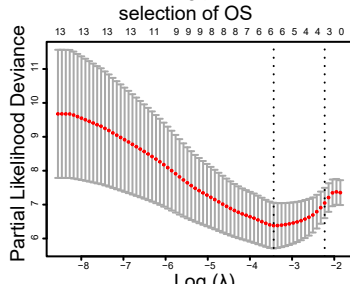
G Optimum subsets regression OS error by Feature Inclusion
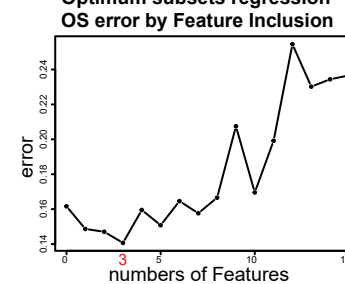
H Variables related to OS chosen by stepwise regression

Age (N=70) 9.5 (2.0 – 45) 0.004 **

LNM_OnlyPelvic_PelvicAortic (N=70) 8.0 (2.7 – 23) <0.001 ***

Events: 14; Global p-value (Log-Rank): 1.8195e-05
AIC: 88.29; Concordance Index: 0.82

I DFS risk group of training cohort

highrisk / lowrisk

event relapse / no relapse

J DFS risk group of testing cohort

highrisk / lowrisk

event relapse / no relapse
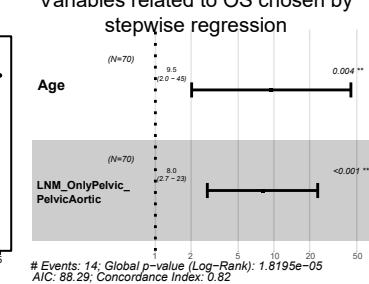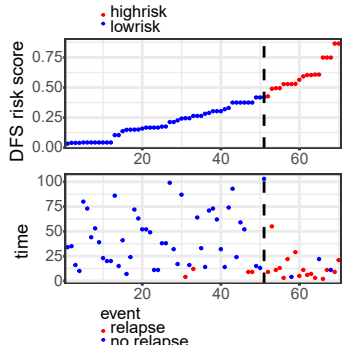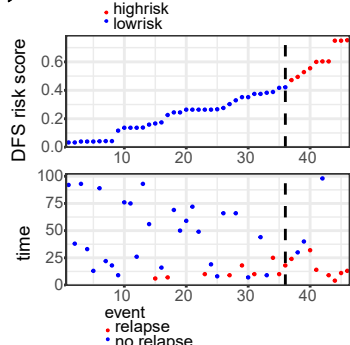
K t-ROC for DFS in training cohort

AUC of 1-y relapse: 0.90
AUC of 3-y relapse: 0.95
AUC of 5-y relapse: 0.95
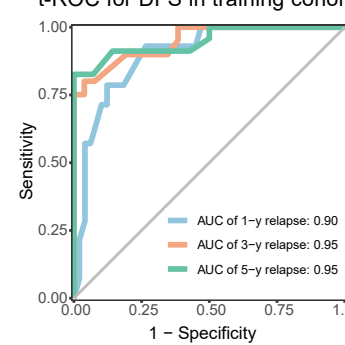
L t-ROC for DFS in testing cohort

AUC of 1-y relapse: 0.71
AUC of 3-y relapse: 0.85
AUC of 5-y relapse: 0.87
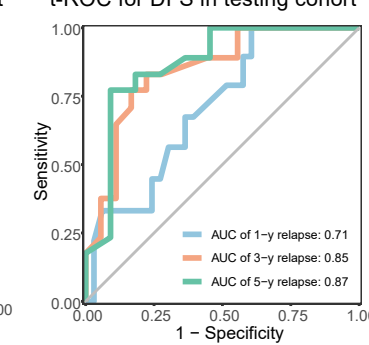
M t-ROC for DFS in all patients
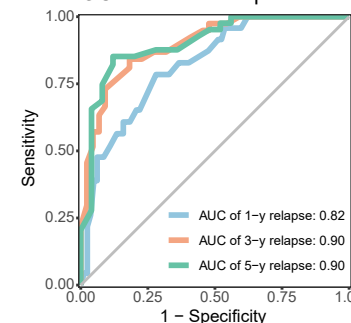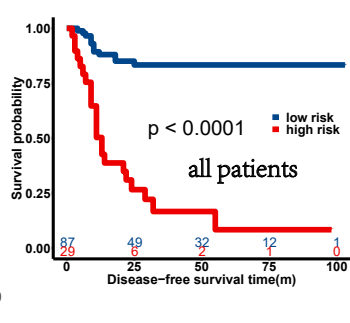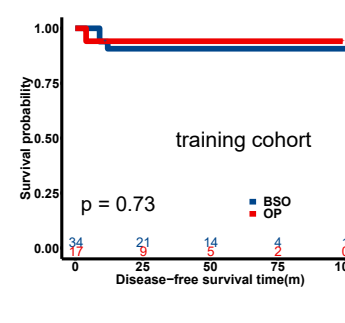
AUC of 1-y relapse: 0.82
AUC of 3-y relapse: 0.90
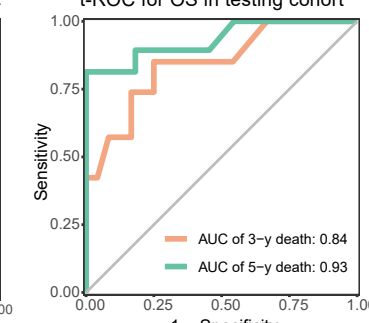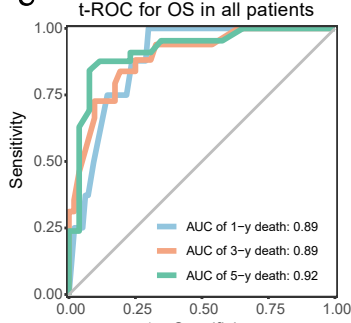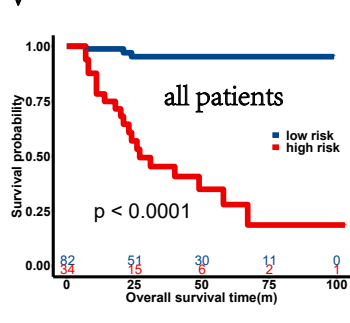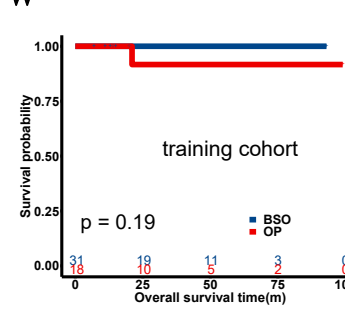AUC of 5-y relapse: 0.90

N all patients

p < 0.0001

low risk / high risk

O training cohort

p = 0.73

BSO / OP

P testing cohort

p = 0.37

BSO / OP

Q OS risk group of training cohort

highrisk / lowrisk

event death / alive

R OS risk group of testing cohort

highrisk / lowrisk

event death / alive
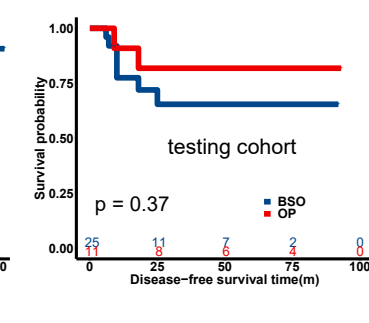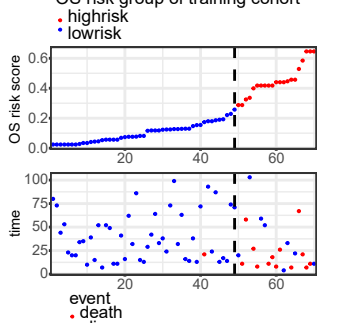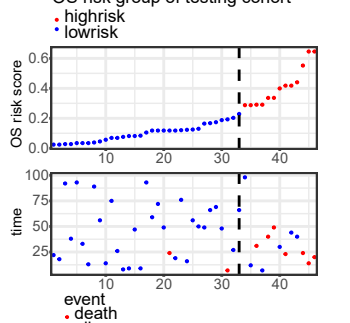
S t-ROC for OS in training cohort

AUC of 1-y death: 0.92
AUC of 3-y death: 0.92
AUC of 5-y death: 0.90
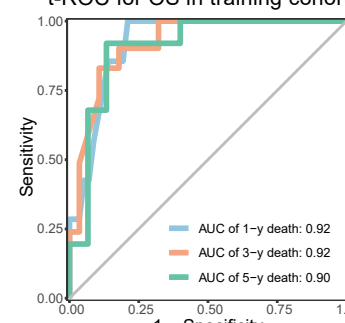
T t-ROC for OS in testing cohort

AUC of 3-y death: 0.84
AUC of 5-y death: 0.93

U t-ROC for OS in all patients

AUC of 1-y death: 0.89
AUC of 3-y death: 0.89
AUC of 5-y death: 0.92

V all patients

p < 0.0001

low risk / high risk

W training cohort

p = 0.19

BSO / OP

X testing cohort

p = 0.3

BSO / OP