Survival Outcomes of Early-Stage High Grade Serous Ovarian Cancer Using the SEER Cancer Database

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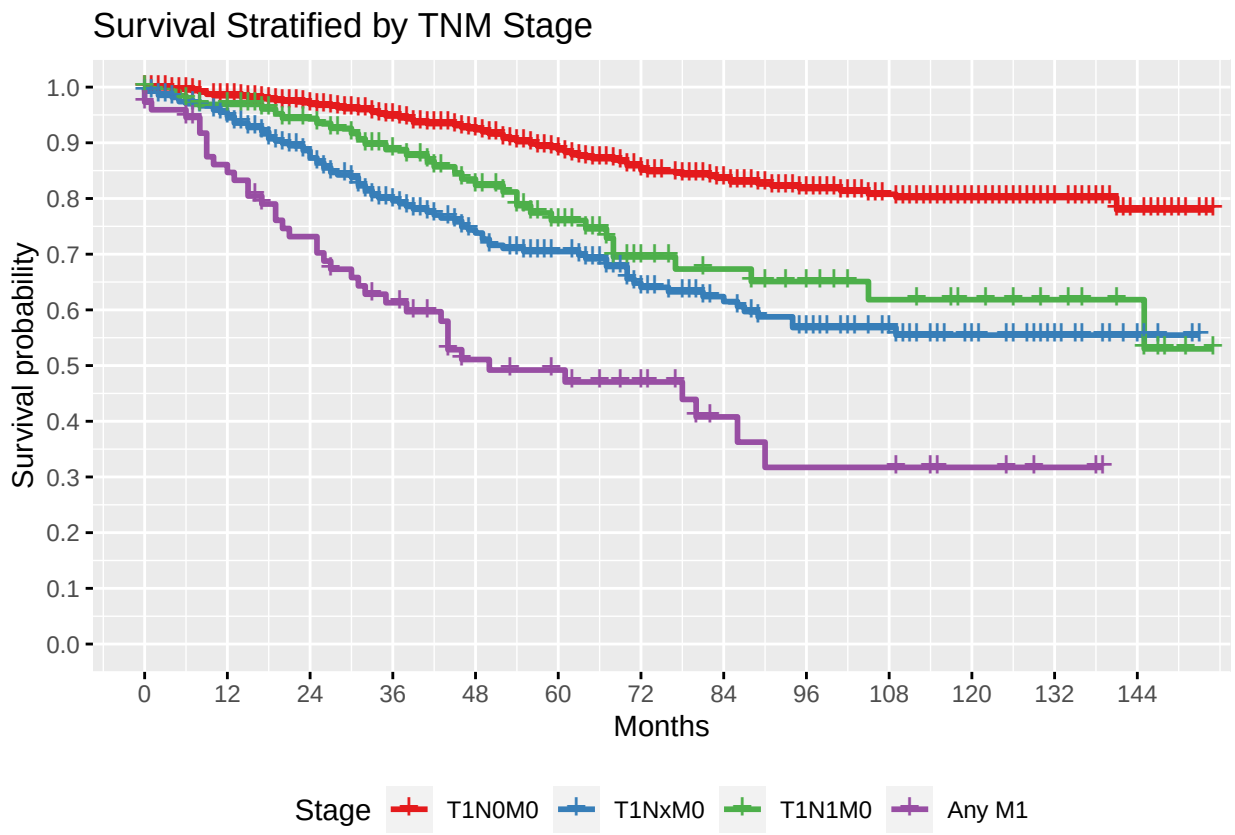
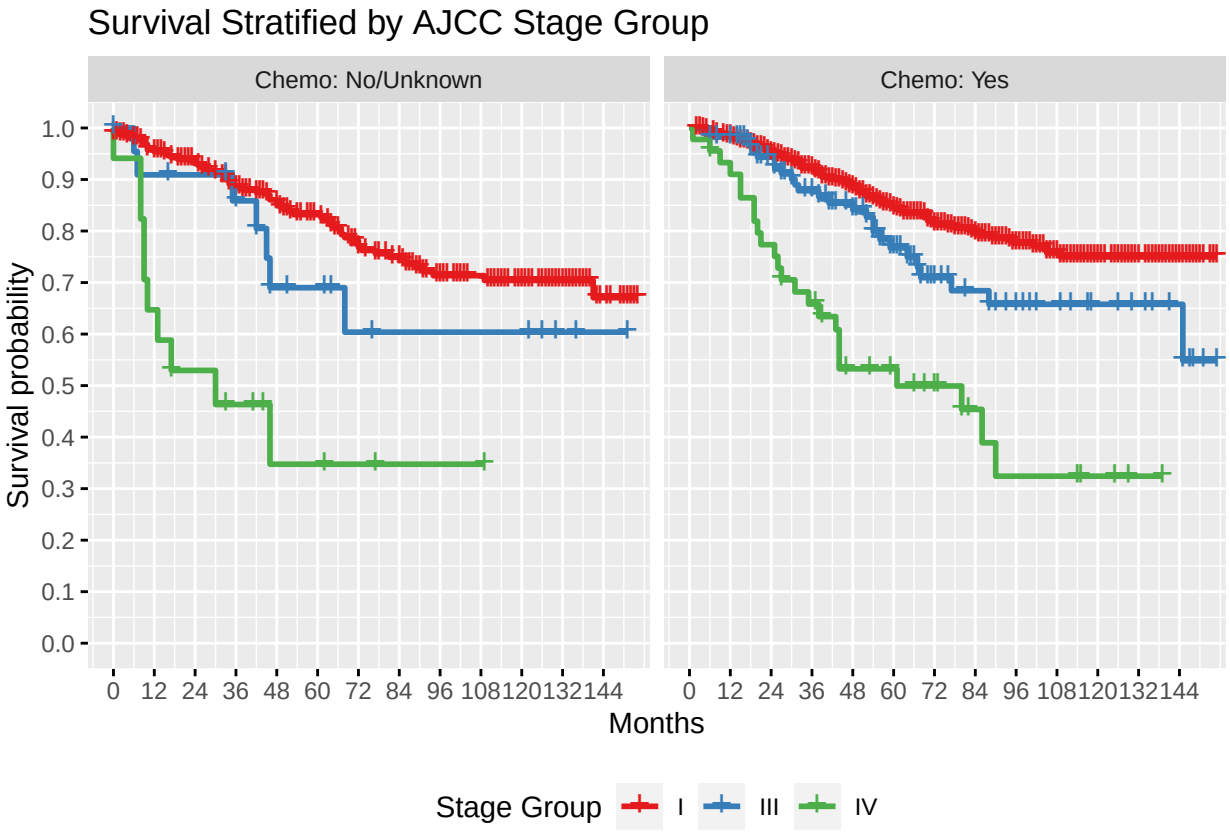
OS based on stage




```
##
##  Pairwise comparisons using Log-Rank test
##
## data:  HGS and TNM.Stage
##
##         T1N0M0  T1NxM0  T1N1M0
## T1NxM0 1.2e-13 -       -
## T1N1M0 7.8e-05 0.16627 -
```

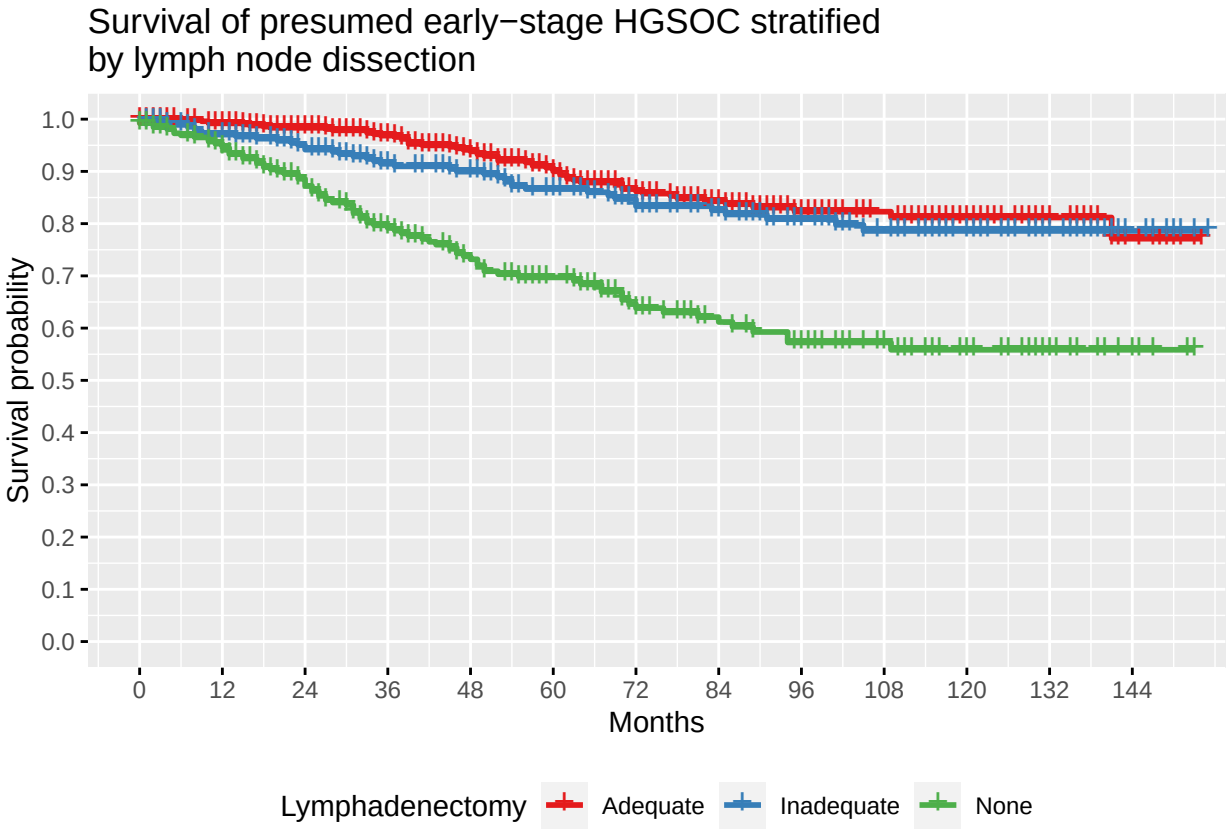
```
## Any M1 < 2e-16 0.00019 1.6e-05
##
## P value adjustment method: BH
```

OS based on Stage group with and without chemotherapy



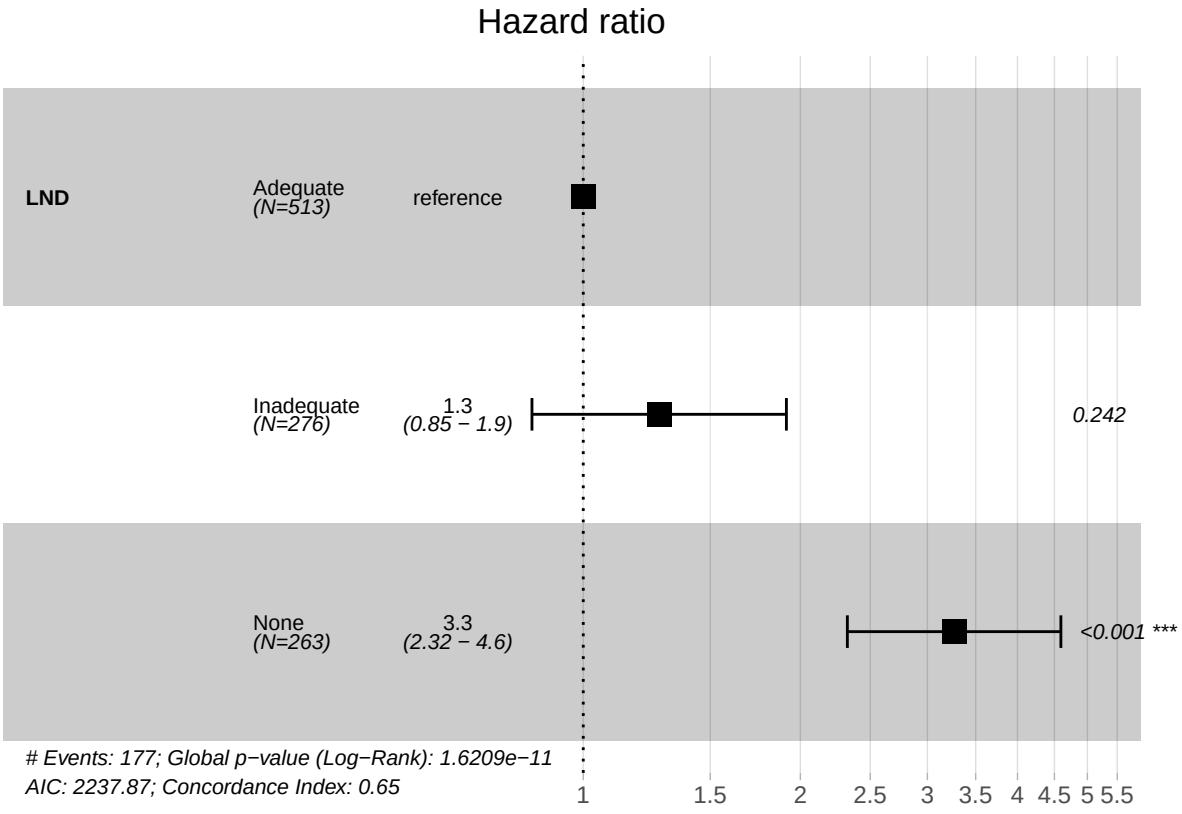

```
##
##  Pairwise comparisons using Log-Rank test
##
## data:  HGS.SG and Stage_Group_Summ
##
##     I       III
## III 0.021   -
## IV  < 2e-16 1.1e-05
##
## P value adjustment method: BH
```

For presumed early-stage HGSOC, does adequacy of LN evaluation matter?



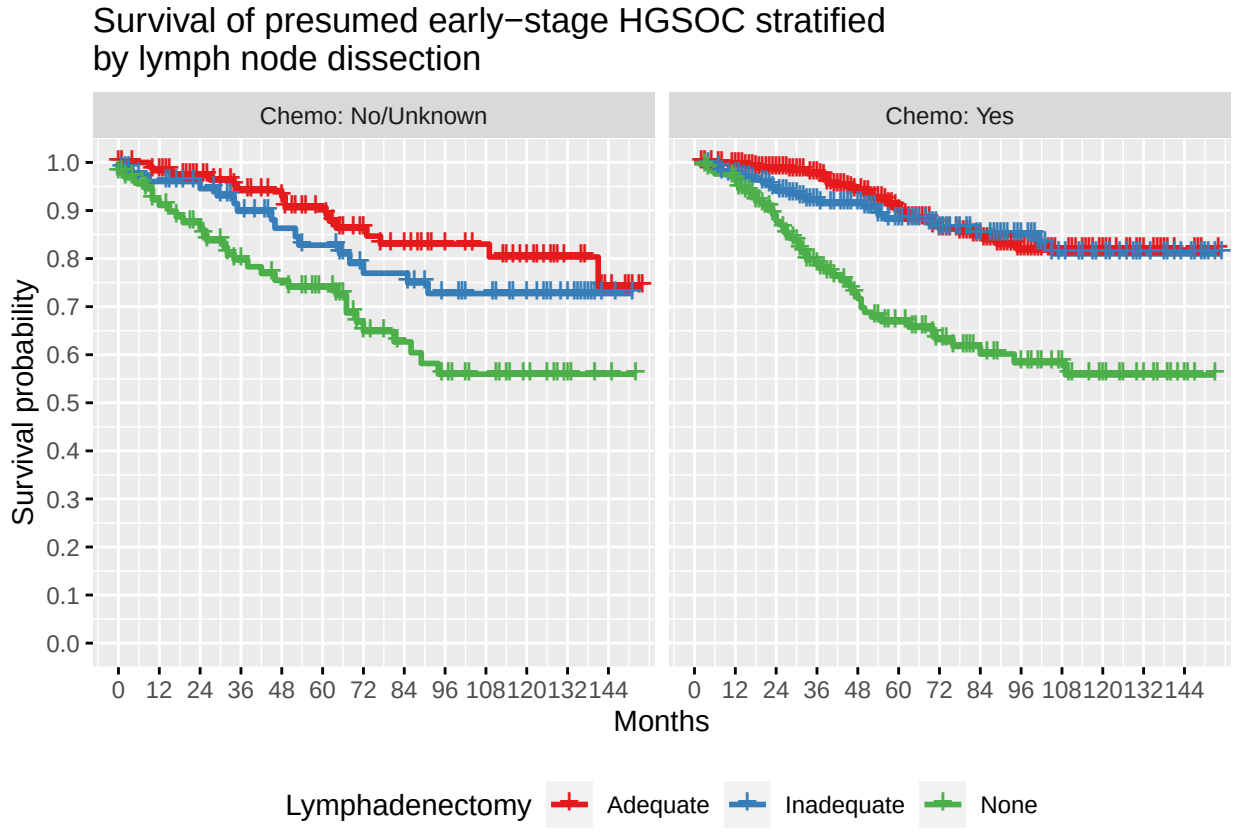

```
##
##  Pairwise comparisons using Log-Rank test
##
## data:  HGS.ES and LND
##
##            Adequate Inadequate
## Inadequate 0.26     -
## None       1.4e-12  1.3e-06
##
## P value adjustment method: BH
```

Lymphadenectomy	Count
Adequate	513
Inadequate	276
None	263



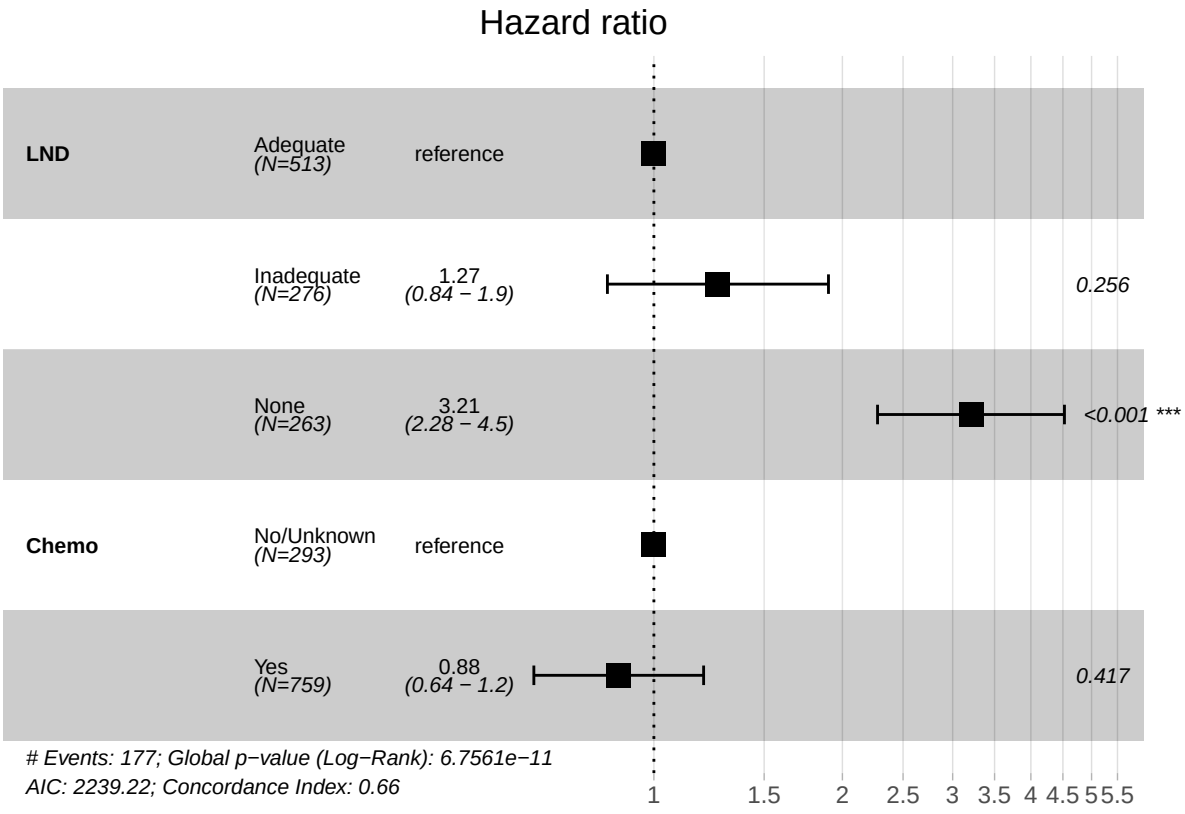

```
## Call:
## coxph(formula = Surv(SurvMonths, COD) ~ LND, data = HGS.ES)
##
##   n= 1052, number of events= 177
##
##                 coef exp(coef) se(coef)     z Pr(>|z|)
## LNDInadequate 0.2424    1.2743   0.2072 1.170    0.242
## LNDNone       1.1840    3.2673   0.1739 6.808 9.89e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
##               exp(coef) exp(-coef) lower .95 upper .95
## LNDInadequate     1.274     0.7847     0.849     1.913
## LNDNone           3.267     0.3061     2.324     4.594
##
## Concordance= 0.653  (se = 0.02 )
## Likelihood ratio test= 49.69  on 2 df,   p=2e-11
## Wald test            = 52.81  on 2 df,   p=3e-12
## Score (logrank) test = 58.41  on 2 df,   p=2e-13
```

Facet by chemotherapy




```
##
##  Pairwise comparisons using Log-Rank test
##
## data:  HGS.ES and LND + Chemo
##
##                                  LND=Adequate, Chemo=No/Unknown
## LND=Adequate, Chemo=Yes          0.71365
## LND=Inadequate, Chemo=No/Unknown 0.35187
## LND=Inadequate, Chemo=Yes        0.92791
## LND=None, Chemo=No/Unknown       0.00159
## LND=None, Chemo=Yes              0.00035
##                                  LND=Adequate, Chemo=Yes
## LND=Adequate, Chemo=Yes          -
## LND=Inadequate, Chemo=No/Unknown 0.09736
## LND=Inadequate, Chemo=Yes        0.71365
## LND=None, Chemo=No/Unknown       1.1e-06
## LND=None, Chemo=Yes              1.7e-09
##                                  LND=Inadequate, Chemo=No/Unknown
## LND=Adequate, Chemo=Yes          -
## LND=Inadequate, Chemo=No/Unknown -
## LND=Inadequate, Chemo=Yes        0.26163
## LND=None, Chemo=No/Unknown       0.08199
## LND=None, Chemo=Yes              0.04887
##                                  LND=Inadequate, Chemo=Yes
```

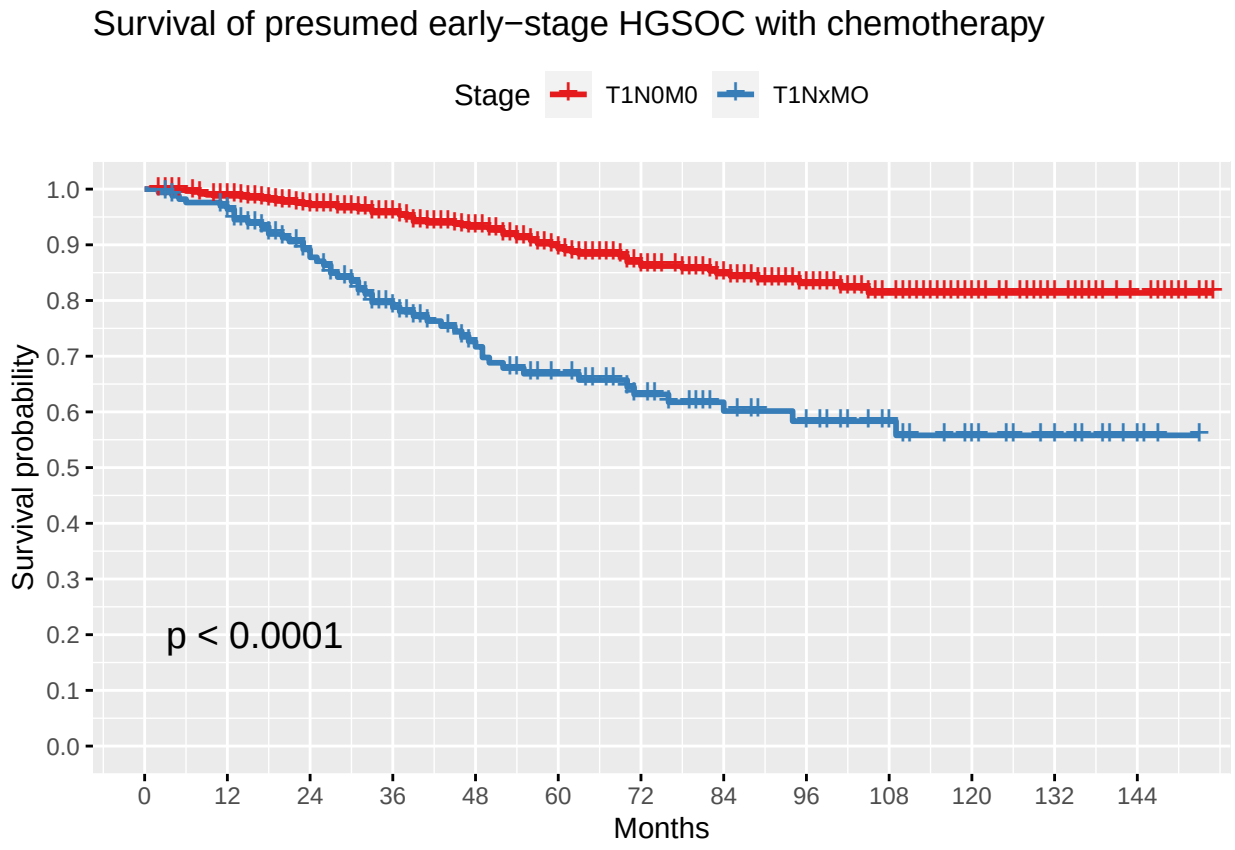
```
## LND=Adequate, Chemo=Yes          -
## LND=Inadequate, Chemo=No/Unknown -
## LND=Inadequate, Chemo=Yes        -
## LND=None, Chemo=No/Unknown       0.00021
## LND=None, Chemo=Yes              2.6e-05
##                                  LND=None, Chemo=No/Unknown
## LND=Adequate, Chemo=Yes          -
## LND=Inadequate, Chemo=No/Unknown -
## LND=Inadequate, Chemo=Yes        -
## LND=None, Chemo=No/Unknown       -
## LND=None, Chemo=Yes              0.92791
##
## P value adjustment method: BH
```



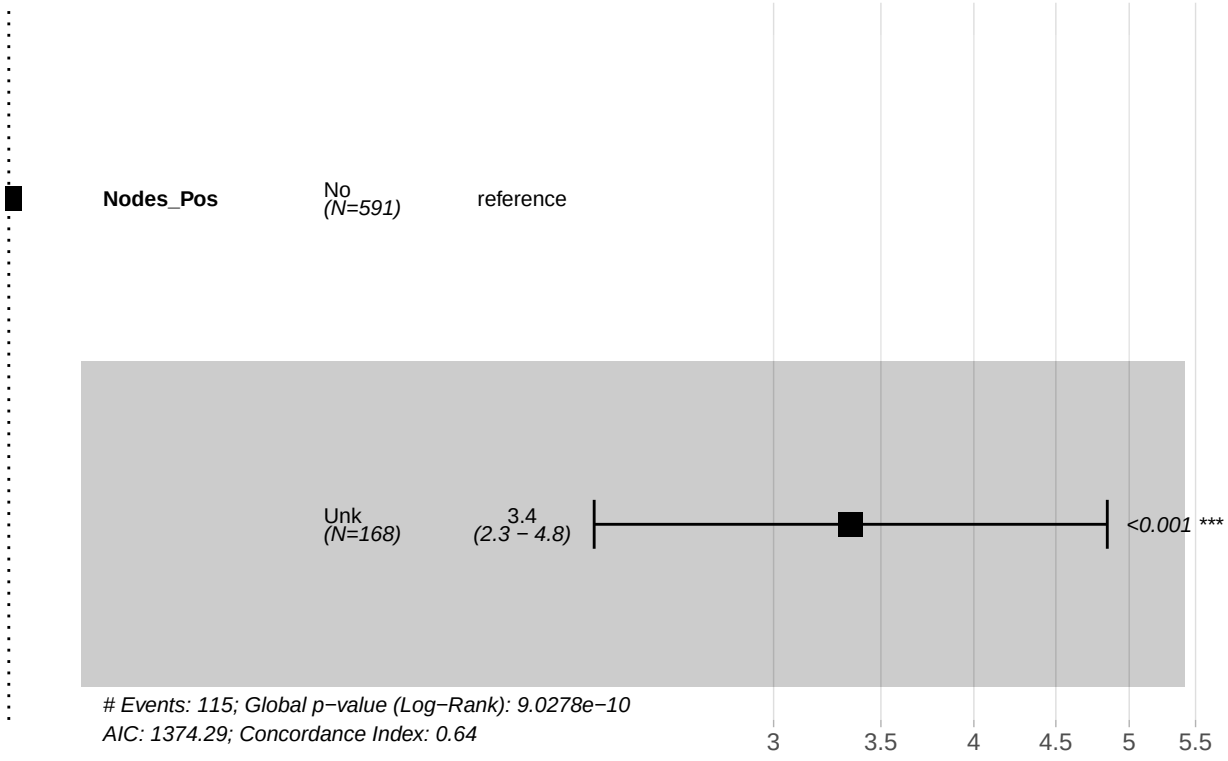

```
## Call:
## coxph(formula = Surv(SurvMonths, COD) ~ LND + Chemo, data = HGS.ES)
##
##   n= 1052, number of events= 177
##
##                  coef exp(coef) se(coef)      z Pr(>|z|)
## LNDInadequate  0.2355    1.2656   0.2074  1.136    0.256
## LNDNone        1.1661    3.2094   0.1753  6.651 2.92e-11 ***
## ChemoYes      -0.1293    0.8787   0.1593 -0.812    0.417
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
##                exp(coef) exp(-coef) lower .95 upper .95
## LNDInadequate     1.2656     0.7902    0.8429     1.900
## LNDNone           3.2094     0.3116    2.2761     4.526
## ChemoYes          0.8787     1.1381    0.6431     1.201
##
## Concordance= 0.659  (se = 0.021 )
## Likelihood ratio test= 50.34  on 3 df,   p=7e-11
## Wald test            = 53.51  on 3 df,   p=1e-11
## Score (logrank) test = 59.11  on 3 df,   p=9e-13
```

In patient's without LND, does adding chemo change their survival?

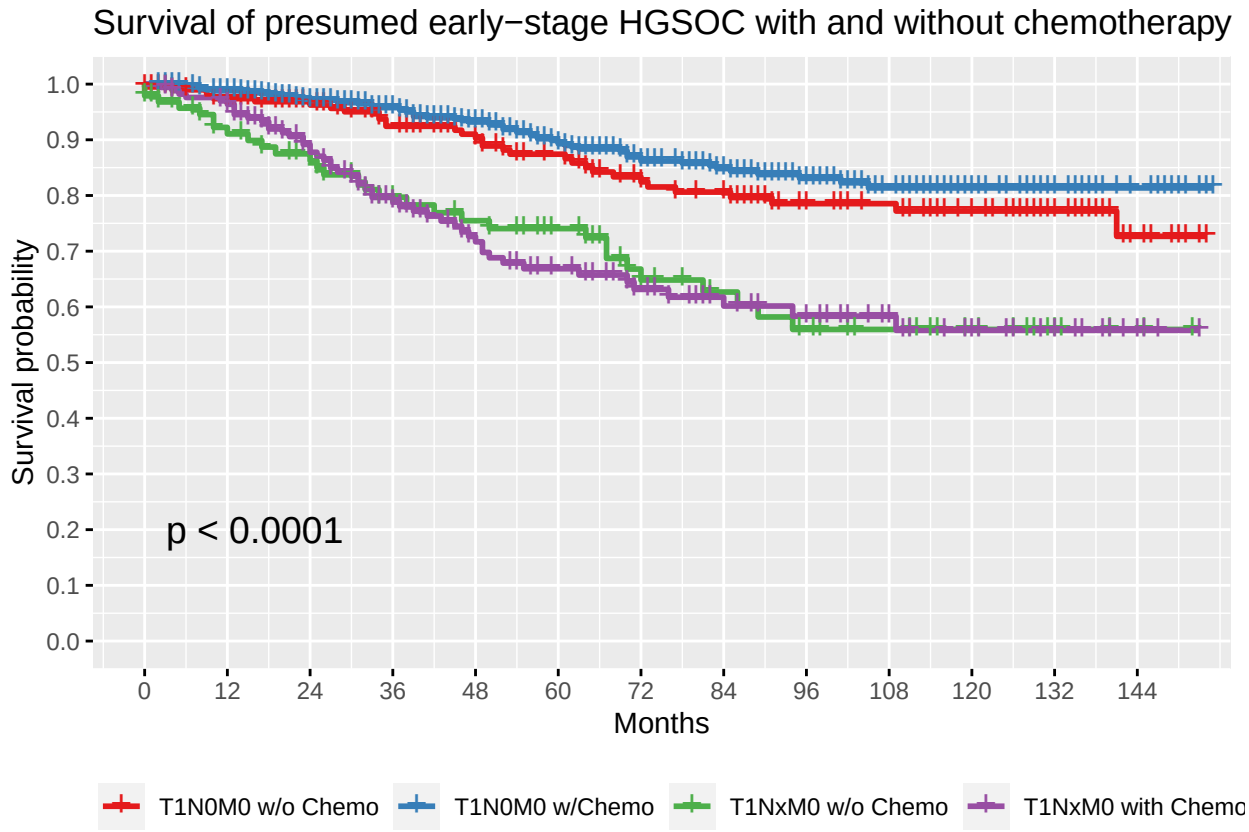


Positive Nodes	Count
No	591
Unk	168

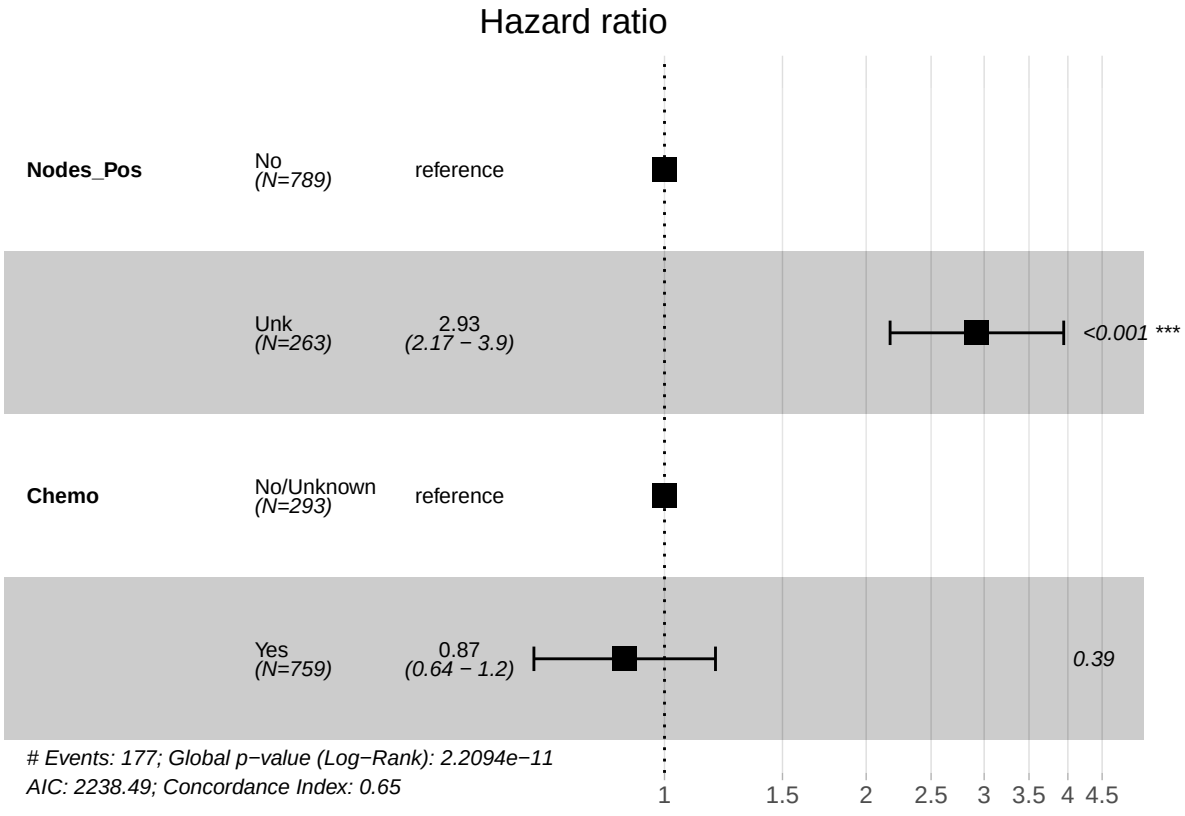



```
## Call:
## coxph(formula = Surv(SurvMonths, COD) ~ Nodes_Pos, data = HGS.ES.chemo)
##
##   n= 759, number of events= 115
##
##               coef exp(coef) se(coef)     z Pr(>|z|)
## Nodes_PosUnk 1.209     3.352    0.188 6.432 1.26e-10 ***
## ---
## Signif. codes:  0 ’***’ 0.001 ’**’ 0.01 ’*’ 0.05 ’.’ 0.1 ’ ’ 1
##
##              exp(coef) exp(-coef) lower .95 upper .95
## Nodes_PosUnk     3.351     0.2984     2.318     4.845
##
## Concordance= 0.642  (se = 0.024 )
## Likelihood ratio test= 37.52  on 1 df,   p=9e-10
## Wald test            = 41.37  on 1 df,   p=1e-10
## Score (logrank) test = 46.62  on 1 df,   p=9e-12
```

All early stage stratified by N Stage and receipt of Chemotherapy

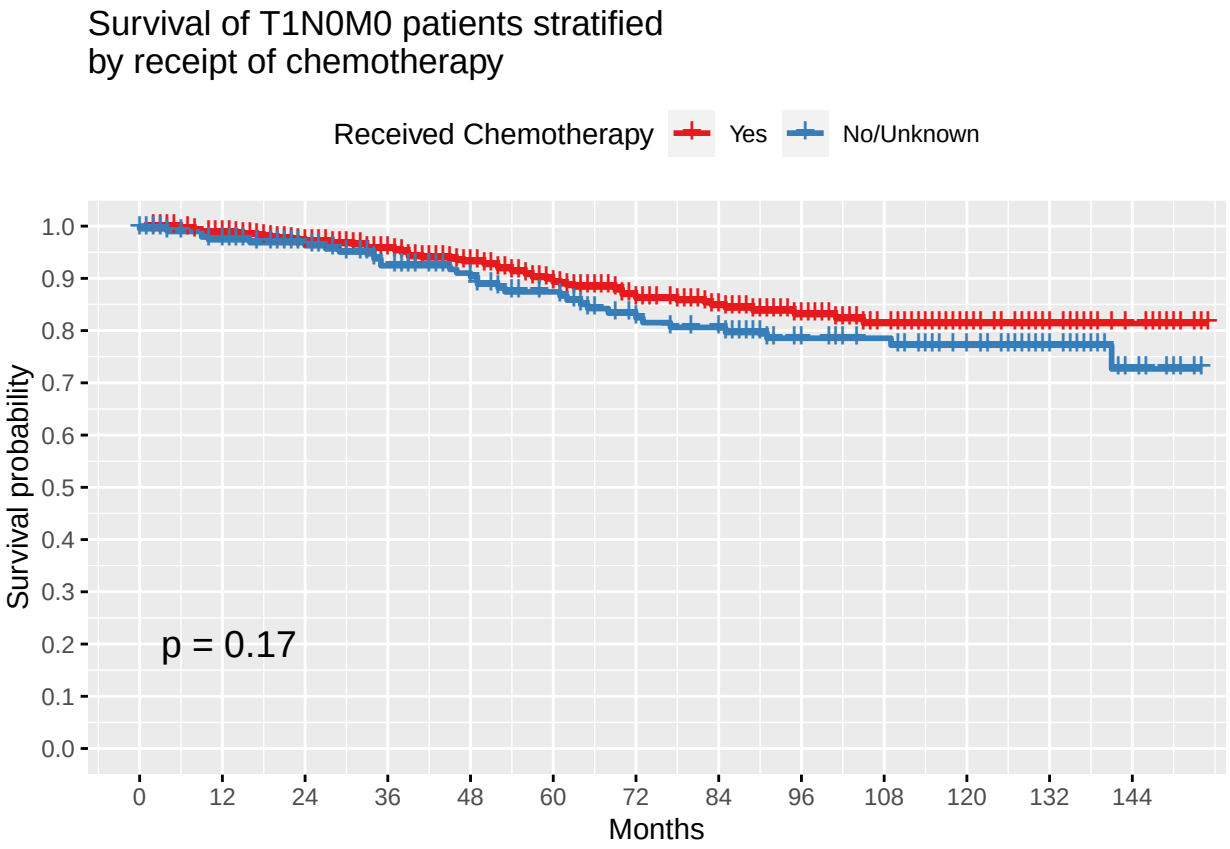


Positive Nodes	Chemotherapy received	
	No/Unknown	Yes
No	198	591
Unk	95	168

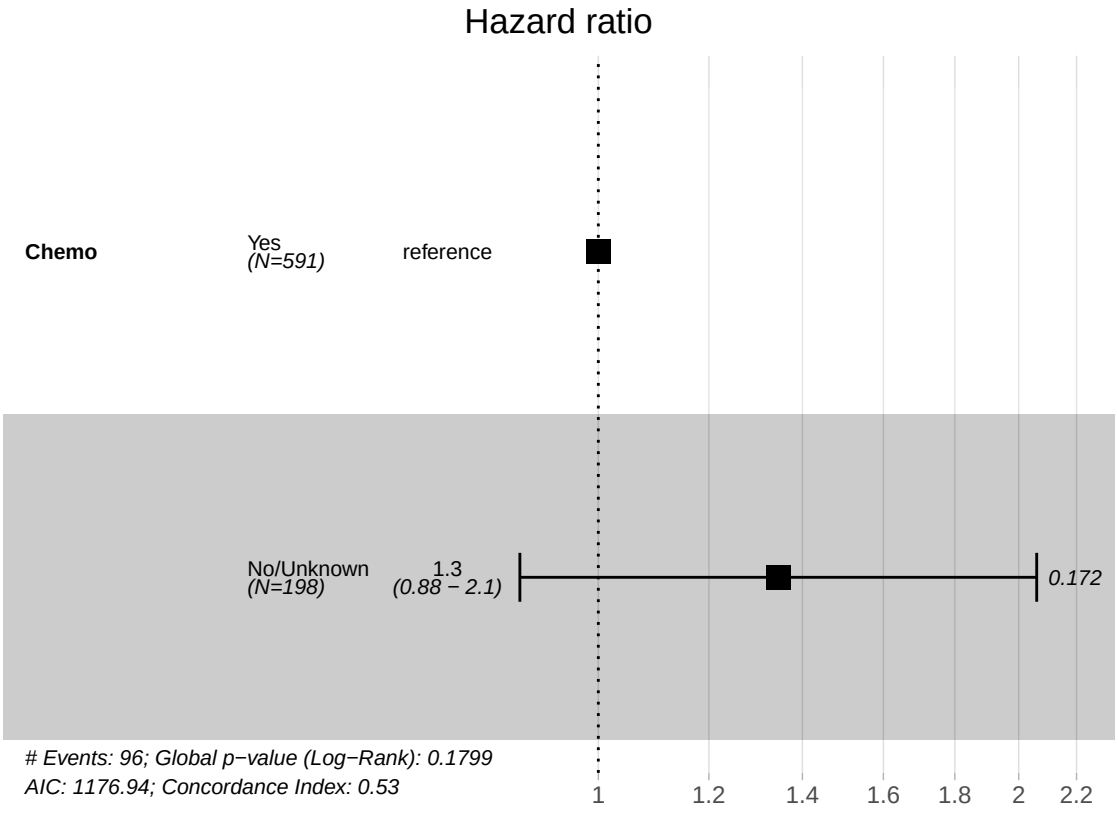



```
## Call:
## coxph(formula = Surv(SurvMonths, COD) ~ Nodes_Pos + Chemo, data = HGS.ES)
##
##   n= 1052, number of events= 177
##
##                 coef exp(coef) se(coef)      z Pr(>|z|)
## Nodes_PosUnk  1.0738    2.9264   0.1522  7.054 1.74e-12 ***
## ChemoYes     -0.1368    0.8722   0.1592 -0.859     0.39
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
##              exp(coef) exp(-coef) lower .95 upper .95
## Nodes_PosUnk    2.9264     0.3417    2.1715     3.944
## ChemoYes        0.8722     1.1466    0.6384     1.192
##
## Concordance= 0.647  (se = 0.021 )
## Likelihood ratio test= 49.07  on 2 df,   p=2e-11
## Wald test            = 52.89  on 2 df,   p=3e-12
## Score (logrank) test = 58.24  on 2 df,   p=2e-13
```

Survival difference between N0 patients with and without chemotherapy

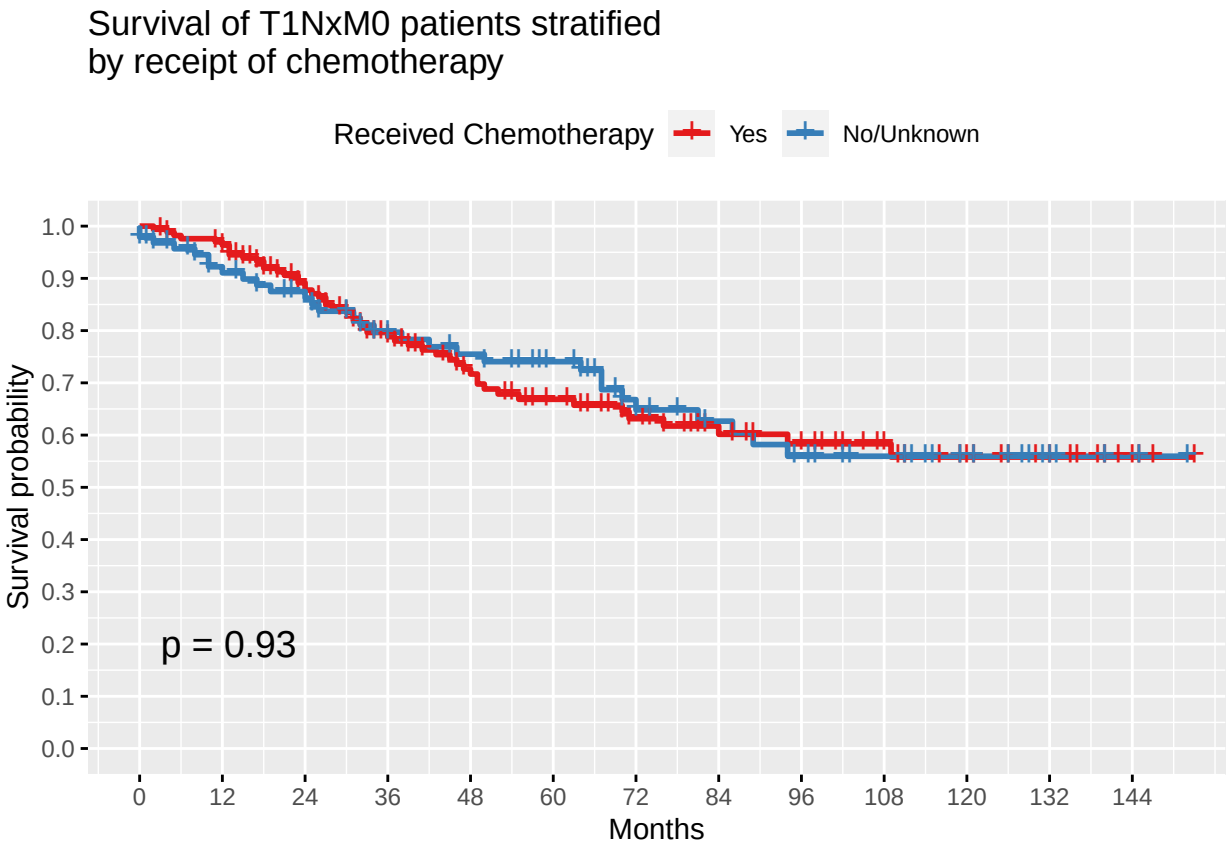


Received Chemotherapy	Count
Yes	591
No/Unknown	198

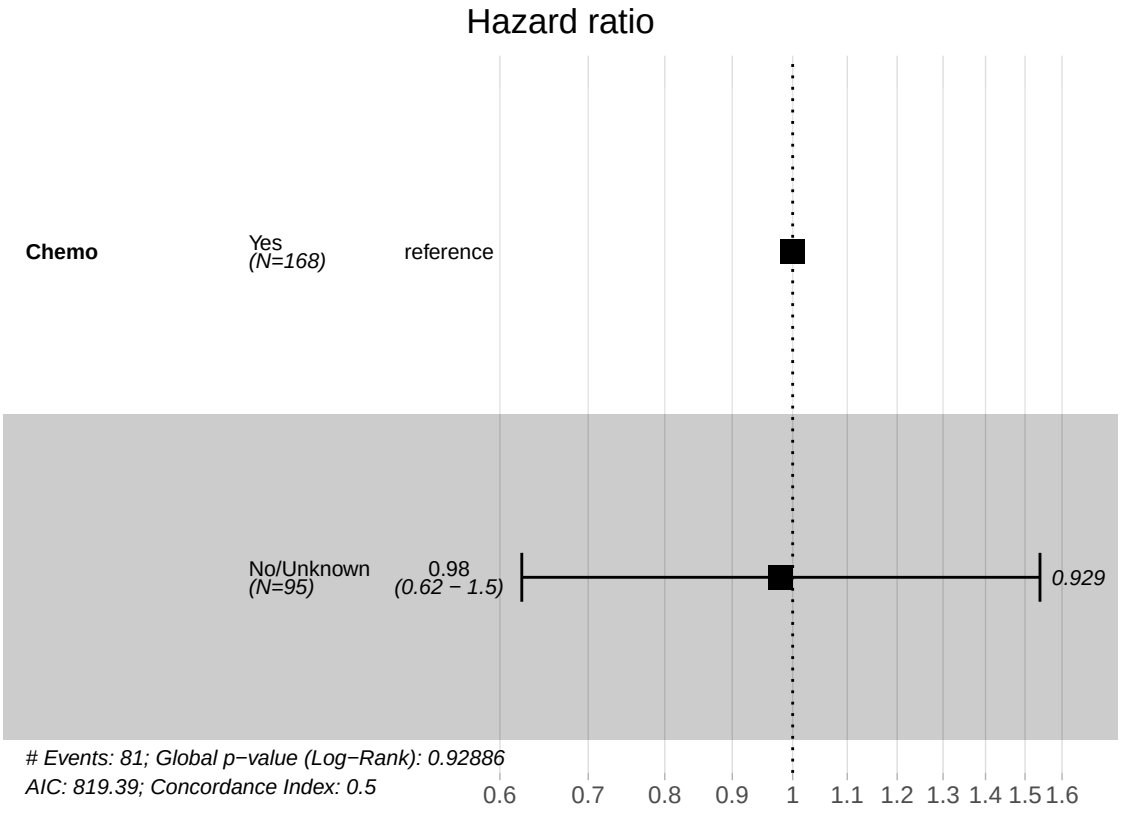



```
## Call:
## coxph(formula = Surv(SurvMonths, COD) ~ Chemo, data = HGS.N0)
##
##   n= 789, number of events= 96
##
##                   coef exp(coef) se(coef)     z Pr(>|z|)
## ChemoNo/Unknown 0.2967    1.3455   0.2174 1.365    0.172
##
##                 exp(coef) exp(-coef) lower .95 upper .95
## ChemoNo/Unknown     1.345     0.7432    0.8787      2.06
##
## Concordance= 0.533  (se = 0.025 )
## Likelihood ratio test= 1.8  on 1 df,   p=0.2
## Wald test            = 1.86  on 1 df,   p=0.2
## Score (logrank) test = 1.88  on 1 df,   p=0.2
```

Survival difference between Nx patients with and without chemotherapy



Received Chemotherapy	Count
Yes	168
No/Unknown	95




```
## Call:
## coxph(formula = Surv(SurvMonths, COD) ~ Chemo, data = HGS.Nx)
##
##   n= 263, number of events= 81
##
##                     coef exp(coef) se(coef)      z Pr(>|z|)
## ChemoNo/Unknown -0.02057   0.97964  0.23065 -0.089    0.929
##
##                 exp(coef) exp(-coef) lower .95 upper .95
## ChemoNo/Unknown    0.9796      1.021    0.6234      1.54
##
## Concordance= 0.498  (se = 0.029 )
## Likelihood ratio test= 0.01  on 1 df,   p=0.9
## Wald test            = 0.01  on 1 df,   p=0.9
## Score (logrank) test = 0.01  on 1 df,   p=0.9
```