第十二章

设置目录

```
setwd("D:\\data\\chapter 12")
```

例 12-1

```
  library(survival)
  data12.1<-read.csv("12-1.csv")
  Surv(data12.1$scsj,data12.1$zt)
```

```
##  [1]  2   5   8   9   9+ 10  13  13  15+ 18  20  23+
```

```
  fit <- survfit(Surv(data12.1$scsj,data12.1$zt)~1, data = data12.1)
  summary(fit)
```

```
## Call: survfit(formula = Surv(data12.1$scsj, data12.1$zt) ~ 1, data = data12.1)
##
##  time n.risk n.event survival std.err lower 95% CI upper 95% CI
##     2     12       1    0.917  0.0798       0.7729        1.000
##     5     11       1    0.833  0.1076       0.6470        1.000
##     8     10       1    0.750  0.1250       0.5410        1.000
##     9      9       1    0.667  0.1361       0.4468        0.995
##    10      7       1    0.571  0.1462       0.3461        0.944
##    13      6       2    0.381  0.1470       0.1789        0.811
##    18      3       1    0.254  0.1426       0.0845        0.764
##    20      2       1    0.127  0.1147       0.0216        0.745
```

例 12-2

```
  data12.2<-read.csv("12-2.csv")
  colnames(data12.2)[1]<-c("xh")
  data12.2$qcjzrs<-data12.2$qcrs-data12.2$ssls/2
  data12.2$q<-data12.2$swls/data12.2$qcjzrs
  data12.2$p<-1-data12.2$q
  data12.2$s[1]<-data12.2$p[1]
  for(i in 2:22){
    data12.2$s[i]<- data12.2$s[i-1]*data12.2$p[i]
```

```
}
x<-data12.2$q/(data12.2$p*data12.2$qcrs)
y<-c(x[1],rep(NA,21))
for(i in 2:22){
  y[i]<-sum(x[1:i])
}
for(i in 1:22){
  data12.2$se[i]<-data12.2$s[i]*sqrt(y[i])
}
data12.2
```

```
##    xh qzns swls ssls qcrs qcjzrs          q         p          s
## 1   1   0~   51    0 1166 1166.0 0.04373928 0.9562607 0.95626072
## 2   2   2~   45    0 1115 1115.0 0.04035874 0.9596413 0.91766724
## 3   3   4~   66    1 1070 1069.5 0.06171108 0.9382889 0.86103700
## 4   4   6~   56    1 1003 1002.5 0.05586035 0.9441397 0.81293917
## 5   5   8~   65   20  946  936.0 0.06944444 0.9305556 0.75648507
## 6   6  10~   61   26  861  848.0 0.07193396 0.9280660 0.70206810
## 7   7  12~   75   27  774  760.5 0.09861933 0.9013807 0.63283061
## 8   8  14~   67    0  672  672.0 0.09970238 0.9002976 0.56973589
## 9   9  16~   59    2  605  604.0 0.09768212 0.9023179 0.51408288
## 10 10  18~   43   19  544  534.5 0.08044902 0.9195510 0.47272542
## 11 11  20~   61   19  482  472.5 0.12910053 0.8708995 0.41169632
## 12 12  22~   56   43  402  380.5 0.14717477 0.8528252 0.35110501
## 13 13  24~   34   30  303  288.0 0.11805556 0.8819444 0.30965511
## 14 14  26~   25   22  239  228.0 0.10964912 0.8903509 0.27570170
## 15 15  28~   30   17  192  183.5 0.16348774 0.8365123 0.23062785
## 16 16  30~   24   17  145  136.5 0.17582418 0.8241758 0.19007790
## 17 17  32~   11   15  104   96.5 0.11398964 0.8860104 0.16841099
## 18 18  34~   13   19   78   68.5 0.18978102 0.8102190 0.13644978
## 19 19  36~    6   24   46   34.0 0.17647059 0.8235294 0.11237041
## 20 20  38~    5    5   16   13.5 0.37037037 0.6296296 0.07075174
## 21 21  40~    1    1    6    5.5 0.18181818 0.8181818 0.05788779
## 22 22  42~    1    3    4    2.5 0.40000000 0.6000000 0.03473267
##            se
## 1  0.005989281
## 2  0.008049700
## 3  0.010130041
## 4  0.011421781
## 5  0.012574246
## 6  0.013437067
## 7  0.014258602
```

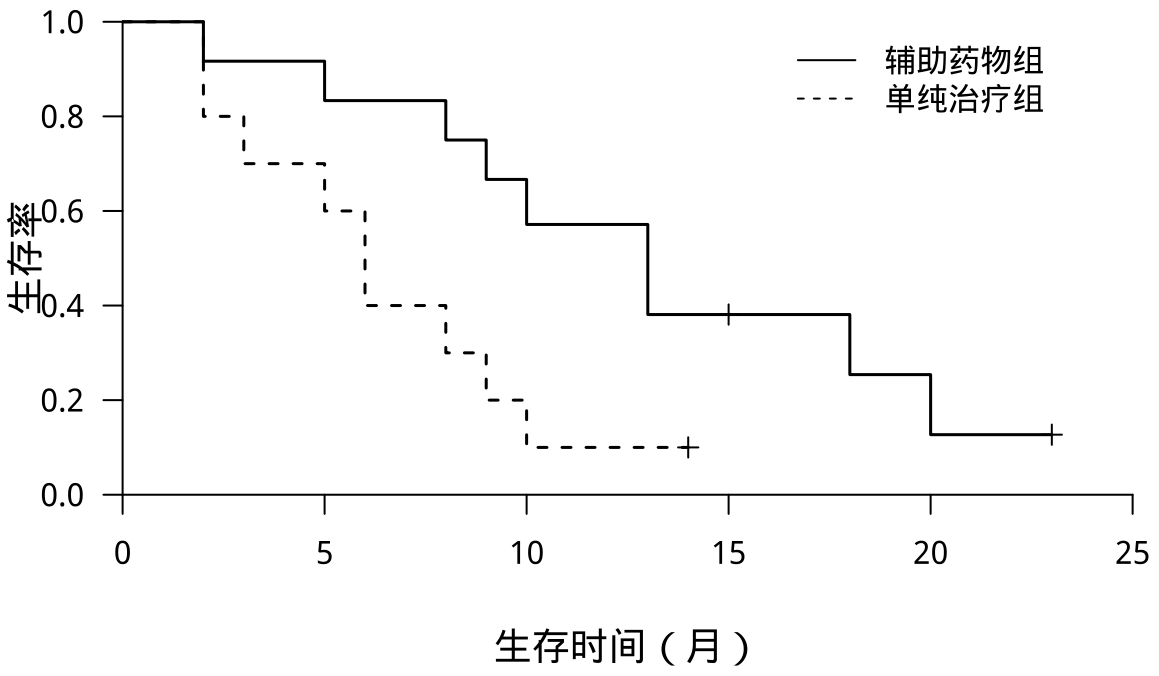
```
## 8  0.014774344
## 9  0.015000312
## 10 0.015039977
## 11 0.014956376
## 12 0.014683823
## 13 0.014493826
## 14 0.014342102
## 15 0.014074032
## 16 0.013700513
## 17 0.013506902
## 18 0.013254161
## 19 0.013340290
## 20 0.015955805
## 21 0.017162093
## 22 0.017524075
```

例 12-3

```
library(survival)

  ######################################################################
  data12.5<-read.table("12-5.csv",sep=",")
  hanshu<-survfit(Surv(data12.5$V1,data12.5$V2)~data12.5$V3)
  plot(hanshu, xlab = " 生存时间（月）",ylab="",lty = 1:2,
       mark.time = TRUE, mark = 3,conf.int=F,lwd=1.5,cex.lab=1.2,
       xlim=c(0,25),ylim=c(0,1),axes=F)
  legend(16, 1, c(" 辅助药物组", " 单纯治疗组"),bty = "n",lty = 1:2)
  mtext(" 生存率",side=2,2,font=2,cex=1.2)
  ######################################################################

  axis(2,pos=c(0),at=seq(from=0,to=1,by=0.2),las=1)
  axis(1,pos=c(0),at=seq(from=0,to=25,by=5))
```




```
library(survival)
data12.3<-read.csv("12-3.csv")
data12.3$zb<-ifelse( data12.3$zb==1," 辅助化疗"," 单纯手术")
survdiff(Surv(scsj,zt)~zb,data=data12.3)
```

```
## Call:
## survdiff(formula = Surv(scsj, zt) ~ zb, data = data12.3)
##
##                N Observed Expected (O-E)^2/E (O-E)^2/V
## zb=单纯手术 10         9     5.11      2.95      4.99
## zb=辅助化疗 12         9    12.89      1.17      4.99
##
##  Chisq= 5  on 1 degrees of freedom, p= 0.0255
```

```
alpha<-0.05
qchisq(1-alpha/2,df=1,lower.tail = TRUE)
```

```
## [1] 5.023886
```