8131_HW9

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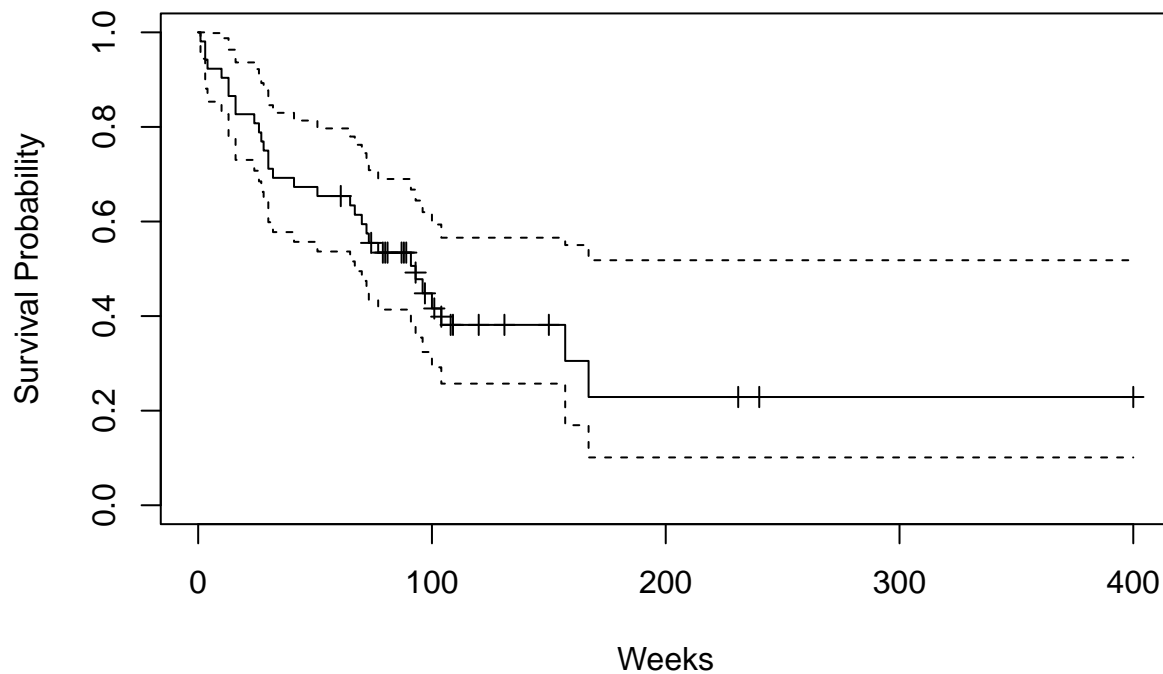
```r
# tongue data
Surv(tongue$time, tongue$delta, type = 'right')
```

```
## [1]    1    3    3    4   10   13   13   16   16   24   26   27   28   30   30
## [16]   32   41   51   65   67   70   72   73   77   91   93   96  100  104  157
## [31]  167   61+  74+  79+  80+  81+  87+  87+  88+  89+  93+  97+ 101+ 104+ 108+
## [46]  109+ 120+ 131+ 150+ 231+ 240+ 400+   1    3    4    5    5    8   12   13
## [61]   18   23   26   27   30   42   56   62   69  104  104  112  129  181    8+
## [76]   67+  76+ 104+ 176+ 231+
```

```r
# KM survival
KM.1 = survfit(Surv(time, delta)~1, data = subset(tongue, type == 1), conf.type = 'log')
KM.2 = survfit(Surv(time, delta)~1, data = subset(tongue, type == 2), conf.type = 'log')
```
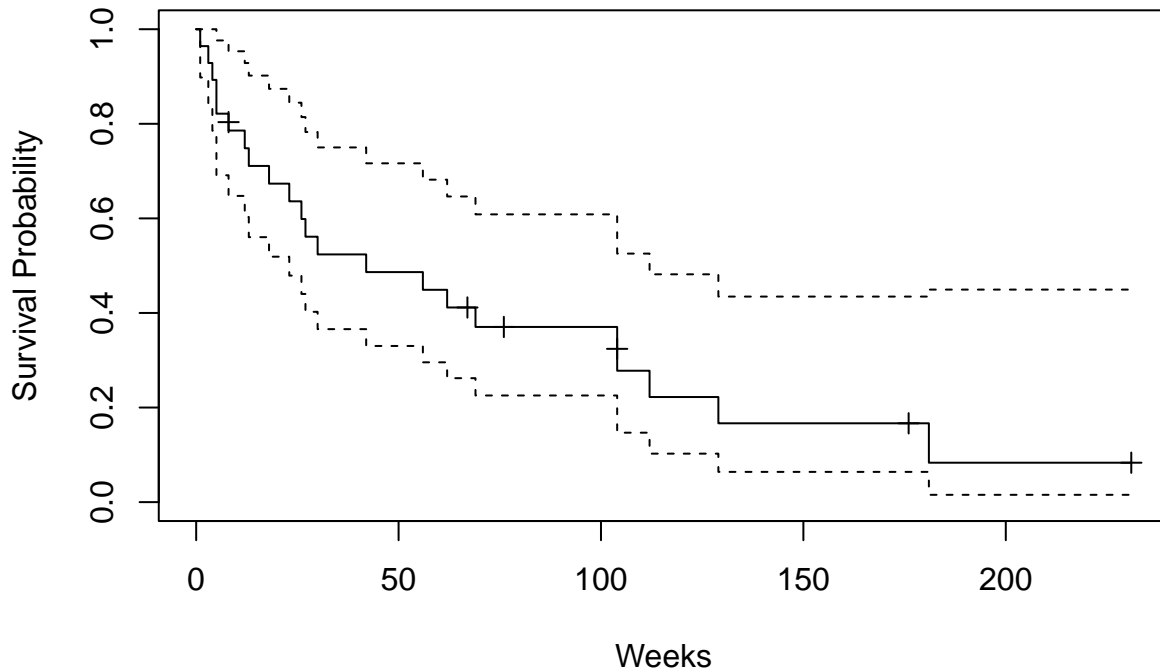
```r
# Kaplan-Meier curve of Aneuploid Tumor
plot(KM.1, conf.int = T, mark.time = T,
     xlab = "Weeks", ylab = "Survival Probability",
     main = "Aneuploid Tumor K-M curve")
```

```
# Kaplan-Meier curve of Diploid Tumor
plot(KM.2, conf.int = T, mark.time = T,
     xlab = "Weeks", ylab = "Survival Probability",
     main = "Diploid Tumor K-M curve")
```

Diploid Tumor K–M curve


```
# survival rate at 1 year, with CI
summary(KM.1, time = round(365/7, 0))
```

```
## Call: survfit(formula = Surv(time, delta) ~ 1, data = subset(tongue,
##     type == 1), conf.type = "log")
##
##  time n.risk n.event survival std.err lower 95% CI upper 95% CI
##    52     34      18    0.654   0.066        0.537        0.797
```

```
summary(KM.2, time = round(365/7, 0))
```

```
## Call: survfit(formula = Surv(time, delta) ~ 1, data = subset(tongue,
##     type == 2), conf.type = "log")
##
##  time n.risk n.event survival std.err lower 95% CI upper 95% CI
##    52     13      14    0.486  0.0961         0.33        0.716
```

The estimated 1-year survival rate and 95% CI of Aneuploid Tumor is 0.654, (0.537, 0.797).

The estimated 1-year survival rate and 95% CI of Diploid Tumor is 0.486, (0.330, 0.716).