

Trabalho- Modelos Mistos

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Arrumando os dados:

Pacotes:

```
library(dplyr)    #Manipulação

##
## Attaching package: 'dplyr'
## The following objects are masked from 'package:stats':
##
##   filter, lag
## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union
library(reshape2) #Transformar BD
library(ggplot2)  #Gráficos

## Warning: package 'ggplot2' was built under R version 3.4.4
```

Lendo os dados:

```
dt=read.table(header=T,text = "
      Subject Baseline Placebo Trt_A Trt_B
01 113 108 98 103
02 108 110 96 104
03 110 106 110 107
04 99 98 78 88
05 114 114 112 105
06 109 103 88 97
07 113 110 106 103
08 112 108 99 108
09 121 111 96 115
10 98 103 98 107
11 107 104 98 100
12 123 117 97 103
13 112 109 108 114
14 96 94 99 97
15 108 106 101 101
16 111 99 102 87
17 124 130 121 124
18 113 119 101 114
19 106 99 89 90
20 99 94 85 59")
```

Transformando dados em formato “univariado”

```
melt(dt, id.vars = 1) %>%  
  setNames(c("Sujeito", "Tratamento", "Resposta")) -> dt2
```

Análise:

Matriz de Covariancia

```
dt[, -1] %>% cor
```

```
##           Baseline  Placebo    Trt_A    Trt_B  
## Baseline 1.0000000 0.8373039 0.5542652 0.6121431  
## Placebo  0.8373039 1.0000000 0.6691148 0.7727233  
## Trt_A     0.5542652 0.6691148 1.0000000 0.6729482  
## Trt_B     0.6121431 0.7727233 0.6729482 1.0000000
```

Summary por sujeito

```
lapply(dt2$Resposta, dt2$Sujeito, summary)
```

```
## $`1`  
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.  
##      98.0  101.8   105.5   105.5   109.2   113.0  
##  
## $`2`  
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.  
##      96.0  102.0   106.0   104.5   108.5   110.0  
##  
## $`3`  
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.  
##     106.0  106.8   108.5   108.2   110.0   110.0  
##  
## $`4`  
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.  
##     78.00  85.50   93.00   90.75   98.25   99.00  
##  
## $`5`  
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.  
##     105.0  110.2   113.0   111.2   114.0   114.0  
##  
## $`6`  
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.  
##     88.00  94.75  100.00   99.25  104.50  109.00  
##  
## $`7`  
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.  
##     103.0  105.2   108.0   108.0   110.8   113.0  
##  
## $`8`
```

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	99.0	105.8	108.0	106.8	109.0	112.0
##						
##	\$`9`					
##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	96.0	107.2	113.0	110.8	116.5	121.0
##						
##	\$`10`					
##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	98.0	98.0	100.5	101.5	104.0	107.0
##						
##	\$`11`					
##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	98.0	99.5	102.0	102.2	104.8	107.0
##						
##	\$`12`					
##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	97.0	101.5	110.0	110.0	118.5	123.0
##						
##	\$`13`					
##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	108.0	108.8	110.5	110.8	112.5	114.0
##						
##	\$`14`					
##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	94.0	95.5	96.5	96.5	97.5	99.0
##						
##	\$`15`					
##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	101.0	101.0	103.5	104.0	106.5	108.0
##						
##	\$`16`					
##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	87.00	96.00	100.50	99.75	104.25	111.00
##						
##	\$`17`					
##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	121.0	123.2	124.0	124.8	125.5	130.0
##						
##	\$`18`					
##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	101.0	110.0	113.5	111.8	115.2	119.0
##						
##	\$`19`					
##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	89.00	89.75	94.50	96.00	100.75	106.00
##						
##	\$`20`					
##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	59.00	78.50	89.50	84.25	95.25	99.00

Summary por grupo

```
dt2 %>% summarise(summary)
```

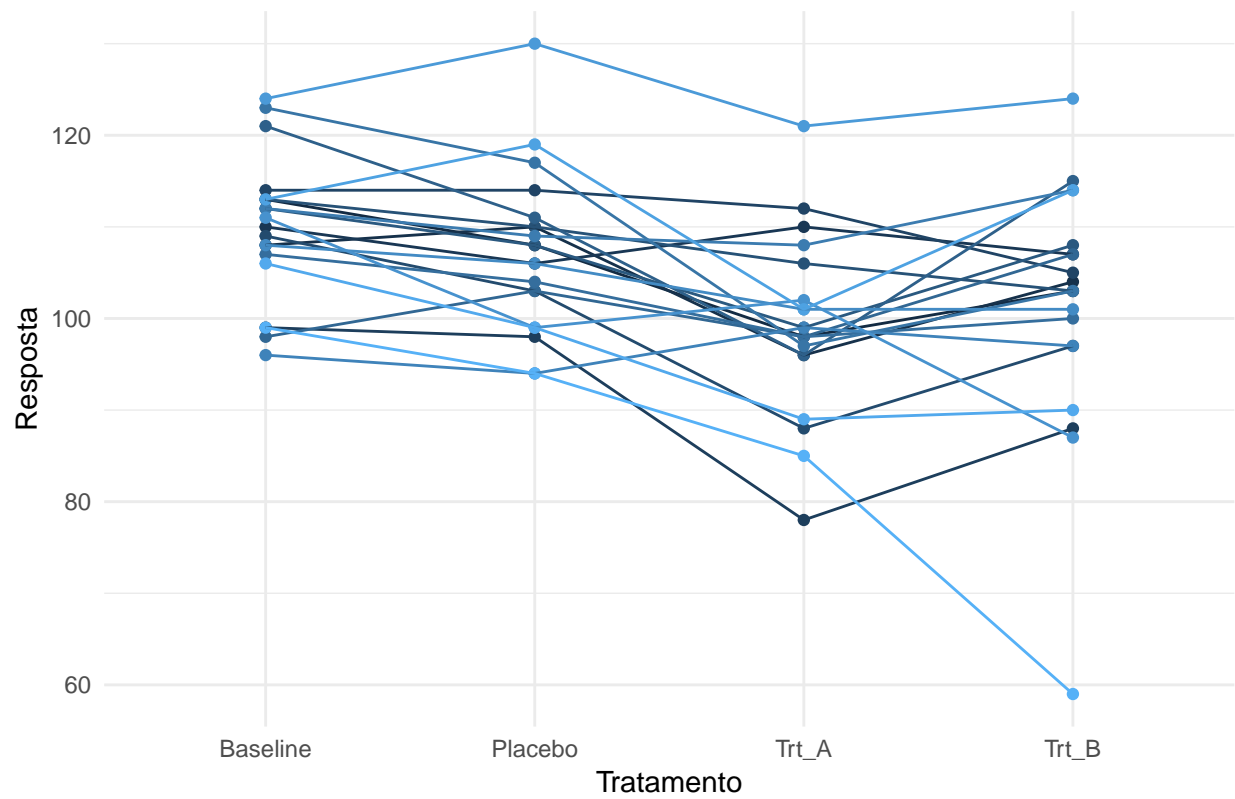
```
## $Baseline
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   96.0  106.8   110.5   109.8   113.0   124.0
##
## $Placebo
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   94.0  102.0   107.0   107.1   110.2   130.0
##
## $Trt_A
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   78.0   96.0   98.5   99.1   103.0   121.0
##
## $Trt_B
##   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   59.0   97.0  103.0  101.3   107.2   124.0
```

Gráficos de perfil

Por indivíduo

```
dt2 %>%
  ggplot(aes(Tratamento, Resposta, group=Sujeito, col=Sujeito)) +
  geom_point() + geom_line() + theme_minimal() +
  theme(legend.position = "none") + ggtitle("Perfil dos sujeitos")
```

Perfil dos sujeitos



Por grupo

```
dt2%>%  
  ggplot(aes(Tratamento,Resposta))+  
  geom_point()+ theme_minimal()+  
  stat_summary(aes(y = Resposta,group=1), fun.y=mean, colour="red", geom="line",group=1)
```

