case-01-ec-rmd

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Table 1 Values for Digoxin

mean and sd of age

```
## [1] 63.4
```

```
## [1] 11
```

mean and sd of ejection fraction

```
## [1] 28.6
```

```
## [1] 8.8
```

median duration of CHF

```
## # A tibble: 1 x 1
##     med
##   <dbl>
## 1    17
```

prop female

```
## # A tibble: 1 x 3
##   SEX        n  freq
##   <chr>  <int> <dbl>
## 1 Female   755 0.222
```

prop non-white

```
## # A tibble: 1 x 3
##   RACE          n  freq
##   <chr>     <int> <dbl>
## 1 Non-white   487 0.143
```

prop older than 70

```
## # A tibble: 1 x 1
##    freq
##   <dbl>
## 1 0.267
```

prop each method of assessing ejection fraction

```
## # A tibble: 3 x 2
##   EJFMETH                           freq
##   <chr>                            <dbl>
## 1 Contrast angiography             0.055
## 2 Radionuclide ventriculography    0.65
```

```
## 3 Two-dimensional echocardiography 0.295
```

prop cardiothoracic ratio

```
## # A tibble: 1 x 1
##    freq
##   <dbl>
## 1 0.346
```

prop NYHA class

```
## # A tibble: 4 x 2
##   FUNCTCLS  freq
##   <chr>    <dbl>
## 1 I        0.137
## 2 II       0.533
## 3 III      0.307
## 4 IV       0.022
```

prop for each number of signs/symptoms

```
## # A tibble: 5 x 2
##    NSYM  freq
##   <dbl> <dbl>
## 1     0 0.011
## 2     1 0.024
## 3     2 0.071
## 4     3 0.093
## 5     4 0.802
```

prop previous myo infection

```
## # A tibble: 1 x 2
##   PREVMI  freq
##    <dbl> <dbl>
## 1      1 0.647
```

prop angina

```
## # A tibble: 1 x 2
##   ANGINA  freq
##    <dbl> <dbl>
## 1      1 0.271
```

prop diabetes

```
## # A tibble: 1 x 2
##   DIABETES  freq
##      <dbl> <dbl>
## 1        1 0.283
```

prop hypertension

```
## # A tibble: 1 x 2
##   HYPERTEN  freq
##      <dbl> <dbl>
## 1        1  0.45
```

prop previous digoxin use

```
## # A tibble: 1 x 2
##   DIGUSE  freq
```

```
##    <dbl> <dbl>
## 1      1 0.441
```

prop primary cause nonischemic or ischemic

```
## # A tibble: 2 x 2
##   CHFETIOL_ni  freq
##   <chr>       <dbl>
## 1 Ischemic    0.708
## 2 Nonischemic 0.292
```

prop primary cause within nonischemic

```
## # A tibble: 3 x 2
##   CHFETIOL      freq
##   <chr>        <dbl>
## 1 Hypertensive 0.08
## 2 Idiopathic   0.155
## 3 Other        0.055
```

prop diuretics

```
## # A tibble: 1 x 2
##   diurets    freq
##   <chr>     <dbl>
## 1 Diuretics 0.812
```

prop ace inhibitor

```
## # A tibble: 1 x 2
##   ACEINHIB  freq
##      <dbl> <dbl>
## 1        1 0.941
```

prop nitrates

```
## # A tibble: 1 x 2
##   NITRATES  freq
##      <dbl> <dbl>
## 1        1 0.422
```

prop other vasodilators

```
## # A tibble: 1 x 2
##   VASOD  freq
##   <dbl> <dbl>
## 1     1 0.009
```

prop daily dose

```
## # A tibble: 4 x 2
##   DIGDOSE  freq
##     <dbl> <dbl>
## 1   0.125 0.175
## 2   0.25  0.706
## 3   0.375 0.103
## 4   0.5   0.011
```

Table 1 Values for Placebo

mean and sd of age

```
## [1] 63.5
```

```
## [1] 10.8
```

mean and sd of ejection fraction

```
## [1] 28.4
```

```
## [1] 8.9
```

median duration of CHF

```
## # A tibble: 1 x 1
##     med
##   <dbl>
## 1    16
```

prop female

```
## # A tibble: 1 x 3
##   SEX        n  freq
##   <chr>  <int> <dbl>
## 1 Female   764 0.225
```

prop non-white

```
## # A tibble: 1 x 3
##   RACE          n  freq
##   <chr>     <int> <dbl>
## 1 Non-white   504 0.148
```

prop older than 70

```
## # A tibble: 1 x 1
##    freq
##   <dbl>
## 1 0.274
```

prop each method of assessing ejection fraction

```
## # A tibble: 3 x 2
##   EJFMETH                           freq
##   <chr>                            <dbl>
## 1 Contrast angiography             0.058
## 2 Radionuclide ventriculography    0.642
## 3 Two-dimensional echocardiography 0.3
```

prop cardiothoracic ratio

```
## # A tibble: 1 x 1
##    freq
##   <dbl>
## 1 0.344
```

prop NYHA class

```
## # A tibble: 4 x 2
##   FUNCTCLS  freq
##   <chr>    <dbl>
## 1 I        0.13
```

```
## 2 II       0.545
## 3 III      0.305
## 4 IV       0.019
```

prop for each number of signs/symptoms

```
## # A tibble: 5 x 2
##    NSYM  freq
##   <dbl> <dbl>
## 1     0 0.011
## 2     1 0.02
## 3     2 0.071
## 4     3 0.086
## 5     4 0.812
```

prop previous myo infection

```
## # A tibble: 1 x 2
##   PREVMI  freq
##    <dbl> <dbl>
## 1      1 0.653
```

prop angina

```
## # A tibble: 1 x 2
##   ANGINA  freq
##    <dbl> <dbl>
## 1      1 0.264
```

prop diabetes

```
## # A tibble: 1 x 2
##   DIABETES  freq
##      <dbl> <dbl>
## 1        1 0.286
```

prop hypertension

```
## # A tibble: 1 x 2
##   HYPERTEN  freq
##      <dbl> <dbl>
## 1        1 0.458
```

prop previous digoxin use

```
## # A tibble: 1 x 2
##   DIGUSE  freq
##    <dbl> <dbl>
## 1      1 0.446
```

prop primary cause nonischemic or ischemic

```
## # A tibble: 2 x 2
##   CHFETIOL_ni  freq
##   <chr>       <dbl>
## 1 Ischemic    0.705
## 2 Nonischemic 0.295
```

prop primary cause within nonischemic

```
## # A tibble: 3 x 2
##   CHFETIOL      freq
```

```
##   <chr>        <dbl>
## 1 Hypertensive 0.091
## 2 Idiopathic   0.142
## 3 Other        0.06
```

prop diuretics

```
## # A tibble: 1 x 2
##   diurets    freq
##   <chr>     <dbl>
## 1 Diuretics 0.822
```

prop ace inhibitor

```
## # A tibble: 1 x 2
##   ACEINHIB  freq
##      <dbl> <dbl>
## 1        1 0.948
```

prop nitrates

```
## # A tibble: 1 x 2
##   NITRATES  freq
##      <dbl> <dbl>
## 1        1 0.431
```

prop other vasodilators

```
## # A tibble: 1 x 2
##   VASOD  freq
##   <dbl> <dbl>
## 1     1 0.015
```

prop daily dose

```
## # A tibble: 4 x 2
##   DIGDOSE  freq
##     <dbl> <dbl>
## 1   0.125 0.174
## 2   0.25  0.701
## 3   0.375 0.113
## 4   0.5   0.009
```

Table 4 Digoxin Values

ejection fraction .25-.45

```
## # A tibble: 1 x 3
##    DWHF     n  freq
##   <dbl> <int> <dbl>
## 1     1   613  0.27
```

ejection fraction $<$ .25

```
## # A tibble: 1 x 3
##    DWHF     n  freq
##   <dbl> <int> <dbl>
## 1     1   428  0.38
```

previous use of digoxin

```
## # A tibble: 2 x 4
## # Groups:   DIGUSE [2]
##   DIGUSE  DWHF     n  freq
##   <chr>  <dbl> <int> <dbl>
## 1 No         1   491 0.259
## 2 Yes        1   550 0.367
```

cause of heart failure

```
## # A tibble: 2 x 4
## # Groups:   CHFETIOL_ni [2]
##   CHFETIOL_ni  DWHF     n  freq
##   <chr>       <dbl> <int> <dbl>
## 1 Ischemic        1   731 0.304
## 2 Nonischemic     1   310 0.312
```

cardiothoracic ratio <= .55

```
## # A tibble: 1 x 3
##    DWHF     n  freq
##   <dbl> <int> <dbl>
## 1     1   600  0.27
```

cardiothoracic ratio > .55

```
## # A tibble: 1 x 3
##    DWHF     n  freq
##   <dbl> <int> <dbl>
## 1     1   441 0.375
```

nyha class

```
## # A tibble: 2 x 4
## # Groups:   FUNCTCLS [2]
##   FUNCTCLS  DWHF     n  freq
##   <chr>    <dbl> <int> <dbl>
## 1 1 or 2       1   601 0.264
## 2 3 or 4       1   440 0.392
```

overall study

```
## # A tibble: 1 x 3
##    DWHF     n  freq
##   <dbl> <int> <dbl>
## 1     1  1041 0.306
```

Table 4 Placebo Values

ejection fraction .25-.45

```
## # A tibble: 1 x 3
##    DWHF     n  freq
##   <dbl> <int> <dbl>
## 1     1   735 0.323
```

ejection fraction < .25

```
## # A tibble: 1 x 3
##    DWHF     n  freq
##   <dbl> <int> <dbl>
```

```
## 1     1   556 0.492
```

previous use of digoxin

```
## # A tibble: 2 x 4
## # Groups:   DIGUSE [2]
##   DIGUSE  DWHF     n  freq
##   <chr>  <dbl> <int> <dbl>
## 1 No         1   603 0.32
## 2 Yes        1   688 0.453
```

cause of heart failure

```
## # A tibble: 2 x 4
## # Groups:   CHFETIOL_ni [2]
##   CHFETIOL_ni  DWHF     n  freq
##   <chr>       <dbl> <int> <dbl>
## 1 Ischemic        1   873 0.364
## 2 Nonischemic     1   418 0.416
```

cardiothoracic ratio <= .55

```
## # A tibble: 1 x 3
##    DWHF     n  freq
##   <dbl> <int> <dbl>
## 1     1   724 0.324
```

cardiothoracic ratio > .55

```
## # A tibble: 1 x 3
##    DWHF     n  freq
##   <dbl> <int> <dbl>
## 1     1   567 0.485
```

nyha class

```
## # A tibble: 2 x 4
## # Groups:   FUNCTCLS [2]
##   FUNCTCLS  DWHF     n  freq
##   <chr>    <dbl> <int> <dbl>
## 1 1 or 2       1   739 0.322
## 2 3 or 4       1   552 0.499
```

overall study

```
## # A tibble: 1 x 3
##    DWHF     n  freq
##   <dbl> <int> <dbl>
## 1     1  1291 0.379
```

Table 4: Absolute Difference

absolute dif ejection fraction .25-.45

```
## [1] -0.053
```

```
## [1] -0.080 -0.027
## attr(,"conf.level")
## [1] 0.95
```

absolute dif ejection fraction <.25

```
## [1] -0.112
```

```
## [1] -0.153 -0.072
## attr(,"conf.level")
## [1] 0.95
```

absolute dif previous digoxin use = yes

```
## [1] -0.086
```

```
## [1] -0.121 -0.051
## attr(,"conf.level")
## [1] 0.95
```

absolute dif previous digoxin use = no

```
## [1] -0.062
```

```
## [1] -0.090 -0.033
## attr(,"conf.level")
## [1] 0.95
```

absolute dif cause of heart failure = ischemic

```
## [1] -0.06
```

```
## [1] -0.088 -0.035
## attr(,"conf.level")
## [1] 0.95
```

absolute dif cause of heart failure = nonischemic

```
## [1] -0.103
```

```
## [1] -0.145 -0.061
## attr(,"conf.level")
## [1] 0.95
```

absolute dif ct ratio <= .55

```
## [1] -0.054
```

```
## [1] -0.081 -0.027
## attr(,"conf.level")
## [1] 0.95
```

absolute dif ct ratio > .55

```
## [1] -0.11
```

```
## [1] -0.149 -0.070
## attr(,"conf.level")
## [1] 0.95
```

absolute dif nyha class = 1 or 2

```
## [1] -0.058
```

```
## [1] -0.084 -0.031
## attr(,"conf.level")
## [1] 0.95
```

absolute dif nyha class = 3 or 4

```
## [1] -0.108
```

```
## [1] -0.149 -0.067
## attr(,"conf.level")
## [1] 0.95
```

absolute dif overall pop

```
## [1] -0.073
```

```
## [1] -0.095 -0.050
## attr(,"conf.level")
## [1] 0.95
```

Table 4: Risk Ratio

risk ratio ejection fraction .25-.45

```
##       exp(coef) exp(-coef) lower .95 upper .95
## TRTMT 0.7979448   1.253219 0.7168228 0.8882473
```

risk ratio ejection fraction <.25

```
##       exp(coef) exp(-coef) lower .95 upper .95
## TRTMT 0.6785531   1.473724  0.598176 0.7697306
```

risk ratio previous digoxin use = yes

```
##       exp(coef) exp(-coef) lower .95 upper .95
## TRTMT 0.7380911   1.354846 0.6597999 0.8256724
```

risk ratio previous digoxin use = no

```
##       exp(coef) exp(-coef) lower .95 upper .95
## TRTMT 0.7677309    1.30254 0.6814938 0.8648806
```

risk ratio cause of heart failure = ischemic

```
##       exp(coef) exp(-coef) lower .95 upper .95
## TRTMT 0.7935371    1.26018 0.7192669 0.8754764
```

risk ratio cause of heart failure = nonischemic

```
##       exp(coef) exp(-coef) lower .95 upper .95
## TRTMT 0.6672604   1.498665 0.5760628 0.7728956
```

risk ratio ct ratio <= .55

```
##       exp(coef) exp(-coef) lower .95 upper .95
## TRTMT 0.7903627   1.265242 0.7093012 0.8806882
```

risk ratio ct ratio > .55

```
##       exp(coef) exp(-coef) lower .95 upper .95
## TRTMT 0.6929434   1.443119 0.6118361 0.7848026
```

risk ratio nyha = 1 or 2

```
##       exp(coef) exp(-coef) lower .95 upper .95
## TRTMT 0.7797704   1.282429 0.7001804 0.8684074
```

risk ratio nyha = 3 or 4

```
##       exp(coef) exp(-coef) lower .95 upper .95
## TRTMT  0.697585   1.433517 0.6154353 0.7907003
```

risk ratio overall pop

```
##       exp(coef) exp(-coef) lower .95 upper .95
## TRTMT 0.7532149   1.327642 0.6941587 0.8172953
```

Discussion

The values I calculated for table 1 and table 4 are mostly exactly correct, but there are a few values that were slightly off from the ones in the report. There are a few more discrepancies in table 1 than in table 4.

Discrepancies in Table 1: Digoxin: sd of ejection fraction, percent non white, percent >= 4 signs or symptoms of CHF, percent nonischemic cause of CHF, percent other cause of CHF, percent nitrates

Placebo: percent nonischemic cause of CHF, percent hypertensive cause of CHF, percent idiopathic cause of CHF, percent taking daily dose of .250 mg

Discrepancies in Table 4: Digoxin:percent nonischemic cause of CHF

Placebo: percent nonischemic cause of CHF, percent in NYHA class 3 or 4

Absolute Difference: cause of heart failure

Most of them only differ by .1% or .2% for the proportions and .01 or .02 in the ratios. These are most likely due to errors in rounding. It seems that calculations involving nonischemic cause of CHF are consistently off by a little bit. This variable was one that the researchers made, and they were not explicitly clear how they did so. Therefore, there could be slight differences in how I coded this variable with how the researchers did.