

Sedation with Benzodiazepines in MICU

Analysis for Alcalde

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Continuous Data

Shapiro-Wilk normality test is performed and if the data is not normally distributed (the p-value is < 0.05), then the Mann-Whitney test is used to compare the medians of the groups.

If the data is normally distributed, an F-test is performed to determine if the groups have equal variances (p-value is ≥ 0.05) and then the appropriate t-test (with or without equal variances) is used to compare the means of the my.groups.

Categorical Data

Data is evaluated using the Chi-squared test.

Results

- age:
 - results:

| | BZD | No BZD |
|-----------------|-------|--------|
| n | 191 | 246 |
| nvalid | 191 | 246 |
| mean | 56.59 | 62.99 |
| sd | 15.6 | 17.23 |
| min | 19 | 19 |
| Q1 | 48 | 53 |
| median | 58 | 64 |
| Q3 | 66 | 74.75 |
| max | 94 | 97 |
| percZero | 0 | 0 |

- normality:

Table 2: Shapiro-Wilk normality test: \mathbf{x}

| Test statistic | P value |
|----------------|-----------------|
| 0.983 | 5.319e-05 * * * |

- comparison:

Table 3: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

| Test statistic | P value | Alternative hypothesis |
|----------------|-----------------|------------------------|
| 18067 | 3.413e-05 * * * | two.sided |

- `los`:

- `results`:

| | BZD | No BZD |
|-----------------|-------|--------|
| n | 191 | 246 |
| nvalid | 191 | 246 |
| mean | 11.38 | 9.69 |
| sd | 8.204 | 6.109 |
| min | 1.46 | 1.29 |
| Q1 | 5.4 | 5.19 |
| median | 8.88 | 7.58 |
| Q3 | 14.31 | 13.44 |
| max | 53 | 39.29 |
| percZero | 0 | 0 |

- `normality`:

Table 5: Shapiro-Wilk normality test: `x`

| Test statistic | P value |
|----------------|----------------|
| 0.8525 | 7.88e-20 * * * |

- `comparison`:

Table 6: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 25712 | 0.09032 | two.sided |

- `unit.los`:

- `results`:

| | BZD | No BZD |
|---------------|-------|--------|
| n | 191 | 246 |
| nvalid | 191 | 246 |
| mean | 5.906 | 4.906 |
| sd | 5.17 | 3.478 |
| min | 1.009 | 1.187 |
| Q1 | 2.669 | 2.696 |
| median | 4.018 | 3.727 |
| Q3 | 7.423 | 6.174 |

| | BZD | No BZD |
|-----------------|-------|--------|
| max | 34.48 | 23.44 |
| percZero | 0 | 0 |

– **normality:**

Table 8: Shapiro-Wilk normality test: **x**

| Test statistic | P value |
|----------------|-----------------|
| 0.7501 | 3.579e-25 * * * |

– **comparison:**

Table 9: Wilcoxon rank sum test with continuity correction: **x** by **my.group**

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 25367 | 0.1525 | two.sided |

• **vent.duration:**

– **results:**

| | BZD | No BZD |
|-----------------|-------|--------|
| n | 191 | 246 |
| nvalid | 191 | 246 |
| mean | 99.98 | 79.45 |
| sd | 102.8 | 70.25 |
| min | 24.17 | 24.25 |
| Q1 | 40.42 | 37.07 |
| median | 65.08 | 56.88 |
| Q3 | 115.8 | 92.79 |
| max | 747.6 | 566.8 |
| percZero | 0 | 0 |

– **normality:**

Table 11: Shapiro-Wilk normality test: **x**

| Test statistic | P value |
|----------------|-----------------|
| 0.6667 | 2.226e-28 * * * |

– **comparison:**

Table 12: Wilcoxon rank sum test with continuity correction: **x** by **my.group**

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 25852 | 0.07171 | two.sided |

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
|----------------|---------|------------------------|

- **weight:**

- **results:**

| | BZD | No BZD |
|-----------------|-------|--------|
| n | 191 | 246 |
| nvalid | 191 | 246 |
| mean | 90.23 | 85.02 |
| sd | 32.15 | 32.44 |
| min | 36.36 | 36.36 |
| Q1 | 68.64 | 63.73 |
| median | 81.82 | 77.27 |
| Q3 | 104.8 | 96.31 |
| max | 222.3 | 238.6 |
| percZero | 0 | 0 |

- **normality:**

Table 14: Shapiro-Wilk normality test: `x`

| Test statistic | P value |
|----------------|-----------------|
| 0.9005 | 2.776e-16 * * * |

- **comparison:**

Table 15: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

| Test statistic | P value | Alternative hypothesis |
|----------------|-----------|------------------------|
| 26453 | 0.02378 * | two.sided |

- **height:**

- **results:**

| | BZD | No BZD |
|-----------------|-------|--------|
| n | 191 | 246 |
| nvalid | 191 | 246 |
| mean | 169.6 | 166.7 |
| sd | 12.77 | 17.72 |
| min | 121.9 | 7.62 |
| Q1 | 162.6 | 160 |
| median | 170.2 | 167.6 |
| Q3 | 177.8 | 175.3 |
| max | 256.5 | 198.1 |
| percZero | 0 | 0 |

- **normality:**

Table 17: Shapiro-Wilk normality test: **x**

| Test statistic | P value |
|----------------|-----------------|
| 0.6977 | 2.871e-27 * * * |

- **comparison:**

Table 18: Wilcoxon rank sum test with continuity correction: **x** by **my.group**

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 25407 | 0.1429 | two.sided |

- **num.packs.day:**

- **results:**

| | BZD | No BZD |
|-----------------|--------|--------|
| n | 191 | 246 |
| nvalid | 91 | 119 |
| mean | 0.2753 | 0.4781 |
| sd | 0.5868 | 1.907 |
| min | 0 | 0 |
| Q1 | 0 | 0 |
| median | 0 | 0 |
| Q3 | 0.1105 | 0.375 |
| max | 3 | 20 |
| percZero | 73.63 | 73.11 |

- **normality:**

Table 20: Shapiro-Wilk normality test: **x**

| Test statistic | P value |
|----------------|-----------------|
| 0.2297 | 1.217e-28 * * * |

- **comparison:**

Table 21: Wilcoxon rank sum test with continuity correction: **x** by **my.group**

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 5312 | 0.7646 | two.sided |

- **num.years.smk:**

- **results:**

| | BZD | No BZD |
|-----------------|-------|--------|
| n | 191 | 246 |
| nvalid | 86 | 107 |
| mean | 7.372 | 6.57 |
| sd | 15.62 | 15.28 |
| min | 0 | 0 |
| Q1 | 0 | 0 |
| median | 0 | 0 |
| Q3 | 0 | 0 |
| max | 61 | 60 |
| percZero | 77.91 | 81.31 |

– normality:

Table 23: Shapiro-Wilk normality test: `x`

| Test statistic | P value |
|----------------|-----------------|
| 0.5107 | 6.681e-23 * * * |

– comparison:

Table 24: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 4746 | 0.5945 | two.sided |

• `pack.years`:

– results:

| | BZD | No BZD |
|-----------------|-------|--------|
| n | 191 | 246 |
| nvalid | 103 | 119 |
| mean | 14.76 | 11.33 |
| sd | 27.96 | 26.26 |
| min | 0 | 0 |
| Q1 | 0 | 0 |
| median | 0 | 0 |
| Q3 | 25 | 2.5 |
| max | 122 | 150 |
| percZero | 67.96 | 74.79 |

– normality:

Table 26: Shapiro-Wilk normality test: `x`

| Test statistic | P value |
|----------------|-----------------|
| 0.5551 | 1.803e-23 * * * |

– **comparison:**

Table 27: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 6580 | 0.2342 | two.sided |

• **sex:**

– **counts:**

| | BZD | No BZD |
|----------------|-----|--------|
| Female | 101 | 134 |
| Male | 89 | 112 |
| Unknown | 1 | 0 |

– **percents:**

| | BZD | No BZD |
|----------------|-------|--------|
| Female | 52.88 | 54.47 |
| Male | 46.6 | 45.53 |
| Unknown | 0.52 | 0 |

– **chi.sq:**

Table 30: Pearson’s Chi-squared test: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 1.365 | 2 | 0.5053 |

• **race:**

– **counts:**

| | BZD | No BZD |
|-------------------------|-----|--------|
| African American | 89 | 96 |
| Asian | 2 | 5 |
| Other | 29 | 42 |
| Unknown | 7 | 17 |
| White/Caucasian | 59 | 80 |

– **percents:**

| | BZD | No BZD |
|-------------------------|-------|--------|
| African American | 47.85 | 40 |
| Asian | 1.08 | 2.08 |
| Other | 15.59 | 17.5 |

| | BZD | No BZD |
|-----------------|-------|--------|
| Unknown | 3.76 | 7.08 |
| White/Caucasian | 31.72 | 33.33 |

– `chi.sq`:

Table 33: Pearson’s Chi-squared test: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 4.497 | 4 | 0.3429 |

• `disposition`:

– `counts`:

| | BZD | No BZD |
|--|-----|--------|
| Acute Care | 0 | 1 |
| Against Medical Advise | 2 | 5 |
| DC/DISC TO REHAB | 4 | 11 |
| DC/TF-Cancer/Childre | 1 | 1 |
| DC/TF TO COURT/LAW | 5 | 1 |
| DC/TF To Psych Hosp | 2 | 5 |
| Deceased | 18 | 37 |
| Discharged to Hospice-Home | 1 | 7 |
| Discharged to Hospice-Medical Facility | 8 | 6 |
| Home | 81 | 84 |
| Home Care with Home Health | 37 | 45 |
| Intermediate Care | 5 | 8 |
| Long Term Care | 6 | 5 |
| Skilled Nursing Facility | 21 | 30 |

– `percents`:

| | BZD | No BZD |
|--|-------|--------|
| Acute Care | 0 | 0.41 |
| Against Medical Advise | 1.05 | 2.03 |
| DC/DISC TO REHAB | 2.09 | 4.47 |
| DC/TF-Cancer/Childre | 0.52 | 0.41 |
| DC/TF TO COURT/LAW | 2.62 | 0.41 |
| DC/TF To Psych Hosp | 1.05 | 2.03 |
| Deceased | 9.42 | 15.04 |
| Discharged to Hospice-Home | 0.52 | 2.85 |
| Discharged to Hospice-Medical Facility | 4.19 | 2.44 |
| Home | 42.41 | 34.15 |
| Home Care with Home Health | 19.37 | 18.29 |
| Intermediate Care | 2.62 | 3.25 |
| Long Term Care | 3.14 | 2.03 |
| Skilled Nursing Facility | 10.99 | 12.2 |

- **chi.sq:**

Table 36: Pearson’s Chi-squared test: **x** and **my.group**

| Test statistic | df | P value |
|----------------|----|---------|
| 17.41 | 13 | 0.1811 |

- **alt:**

- **counts:**

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 164 | 210 |
| TRUE | 27 | 36 |

- **percents:**

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 85.86 | 85.37 |
| TRUE | 14.14 | 14.63 |

- **chi.sq:**

Table 39: Pearson’s Chi-squared test with Yates’ continuity correction: **x** and **my.group**

| Test statistic | df | P value |
|----------------|----|---------|
| 9.483e-05 | 1 | 0.9922 |

- **ast:**

- **counts:**

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 142 | 195 |
| TRUE | 49 | 51 |

- **percents:**

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 74.35 | 79.27 |
| TRUE | 25.65 | 20.73 |

- **chi.sq:**

Table 42: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 1.211 | 1 | 0.2712 |

- `cam.icu.pos`:

- `counts`:

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 71 | 135 |
| TRUE | 120 | 111 |

- `percents`:

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 37.17 | 54.88 |
| TRUE | 62.83 | 45.12 |

- `chi.sq`:

Table 45: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|----------------|
| 12.83 | 1 | 0.000342 * * * |

- `arf`:

- `counts`:

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 88 | 101 |
| TRUE | 103 | 145 |

- `percents`:

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 46.07 | 41.06 |
| TRUE | 53.93 | 58.94 |

- `chi.sq`:

Table 48: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 0.9074 | 1 | 0.3408 |

- `asthma`:

- `counts`:

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 178 | 227 |
| TRUE | 13 | 19 |

- `percents`:

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 93.19 | 92.28 |
| TRUE | 6.81 | 7.72 |

- `chi.sq`:

Table 51: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 0.03241 | 1 | 0.8571 |

- `ckd`:

- `counts`:

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 127 | 168 |
| TRUE | 64 | 78 |

- `percents`:

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 66.49 | 68.29 |
| TRUE | 33.51 | 31.71 |

- `chi.sq`:

Table 54: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 0.08742 | 1 | 0.7675 |

- `copd`:

- `counts`:

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 145 | 171 |
| TRUE | 46 | 75 |

- `percents`:

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 75.92 | 69.51 |
| TRUE | 24.08 | 30.49 |

- `chi.sq`:

Table 57: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 1.894 | 1 | 0.1687 |

- `dementia`:

- `counts`:

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 169 | 212 |
| TRUE | 22 | 34 |

- `percents`:

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 88.48 | 86.18 |
| TRUE | 11.52 | 13.82 |

- `chi.sq`:

Table 60: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 0.325 | 1 | 0.5686 |

- **diabetes:**

- **counts:**

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 112 | 128 |
| TRUE | 79 | 118 |

- **percents:**

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 58.64 | 52.03 |
| TRUE | 41.36 | 47.97 |

- **chi.sq:**

Table 63: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 1.638 | 1 | 0.2006 |

- **heart.failure:**

- **counts:**

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 126 | 159 |
| TRUE | 65 | 87 |

- **percents:**

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 65.97 | 64.63 |
| TRUE | 34.03 | 35.37 |

- **chi.sq:**

Table 66: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 0.03583 | 1 | 0.8499 |

- **hypertension:**

- **counts:**

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 53 | 54 |
| TRUE | 138 | 192 |

- **percents:**

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 27.75 | 21.95 |
| TRUE | 72.25 | 78.05 |

- **chi.sq:**

Table 69: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 1.653 | 1 | 0.1985 |

- **liver:**

- **counts:**

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 157 | 200 |
| TRUE | 34 | 46 |

- **percents:**

| | BZD | No BZD |
|--------------|------|--------|
| FALSE | 82.2 | 81.3 |
| TRUE | 17.8 | 18.7 |

- **chi.sq:**

Table 72: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 0.01349 | 1 | 0.9076 |

- `seizure:`

- `counts:`

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 156 | 199 |
| TRUE | 35 | 47 |

- `percents:`

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 81.68 | 80.89 |
| TRUE | 18.32 | 19.11 |

- `chi.sq:`

Table 75: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 0.007046 | 1 | 0.9331 |

- `diagnosis.categories:`

- `counts:`

| | BZD | No BZD |
|---------------------|-----|--------|
| angioedema | 8 | 5 |
| blood glucose | 6 | 15 |
| cardiac | 4 | 9 |
| encephalopathy | 4 | 11 |
| htn | 2 | 6 |
| infection | 25 | 19 |
| other | 43 | 54 |
| renal failure | 3 | 3 |
| respiratory failure | 47 | 70 |
| shock | 43 | 44 |
| w/o | 6 | 10 |

- `percents:`

| | BZD | No BZD |
|------------|------|--------|
| angioedema | 4.19 | 2.03 |

| | BZD | No BZD |
|----------------------------|-------|--------|
| blood glucose | 3.14 | 6.1 |
| cardiac | 2.09 | 3.66 |
| encephalopathy | 2.09 | 4.47 |
| htn | 1.05 | 2.44 |
| infection | 13.09 | 7.72 |
| other | 22.51 | 21.95 |
| renal failure | 1.57 | 1.22 |
| respiratory failure | 24.61 | 28.46 |
| shock | 22.51 | 17.89 |
| w/o | 3.14 | 4.07 |

– **chi.sq:**

Table 78: Pearson’s Chi-squared test: **x** and **my.group**

| Test statistic | df | P value |
|----------------|----|---------|
| 12.62 | 10 | 0.246 |

• **alcohol.use:**

– **counts:**

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 94 | 150 |
| TRUE | 36 | 31 |

– **percents:**

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 72.31 | 82.87 |
| TRUE | 27.69 | 17.13 |

– **chi.sq:**

Table 81: Pearson’s Chi-squared test with Yates’ continuity correction: **x** and **my.group**

| Test statistic | df | P value |
|----------------|----|-----------|
| 4.391 | 1 | 0.03613 * |

• **illicit.drug.use:**

– **counts:**

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 109 | 161 |
| TRUE | 25 | 22 |

– percents:

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 81.34 | 87.98 |
| TRUE | 18.66 | 12.02 |

– chi.sq:

Table 84: Pearson’s Chi-squared test with Yates’ continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 2.197 | 1 | 0.1383 |

• smoking:

– counts:

| | BZD | No BZD |
|----------------|-----|--------|
| current | 49 | 49 |
| none | 67 | 86 |
| past | 21 | 46 |

– percents:

| | BZD | No BZD |
|----------------|-------|--------|
| current | 35.77 | 27.07 |
| none | 48.91 | 47.51 |
| past | 15.33 | 25.41 |

– chi.sq:

Table 87: Pearson’s Chi-squared test: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 5.709 | 2 | 0.05758 |

• benzodiazepines:

– counts:

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 176 | 218 |
| TRUE | 15 | 28 |

– percents:

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 92.15 | 88.62 |
| TRUE | 7.85 | 11.38 |

– **chi.sq:**

Table 90: Pearson’s Chi-squared test with Yates’ continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 1.138 | 1 | 0.2862 |

• **narcotic.analgesics:**

– **counts:**

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 158 | 209 |
| TRUE | 33 | 37 |

– **percents:**

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 82.72 | 84.96 |
| TRUE | 17.28 | 15.04 |

– **chi.sq:**

Table 93: Pearson’s Chi-squared test with Yates’ continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 0.2509 | 1 | 0.6164 |

• **antidepressants:**

– **counts:**

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 162 | 203 |
| TRUE | 29 | 43 |

– **percents:**

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 84.82 | 82.52 |
| TRUE | 15.18 | 17.48 |

- **chi.sq:**

Table 96: Pearson’s Chi-squared test with Yates’ continuity correction: **x** and **my.group**

| Test statistic | df | P value |
|----------------|----|---------|
| 0.2621 | 1 | 0.6087 |

- **antipsychotics:**

- **counts:**

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 177 | 223 |
| TRUE | 14 | 23 |

- **percents:**

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 92.67 | 90.65 |
| TRUE | 7.33 | 9.35 |

- **chi.sq:**

Table 99: Pearson’s Chi-squared test with Yates’ continuity correction: **x** and **my.group**

| Test statistic | df | P value |
|----------------|----|---------|
| 0.3353 | 1 | 0.5625 |

- **anticonvulsants:**

- **counts:**

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 178 | 224 |
| TRUE | 13 | 22 |

- **percents:**

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 93.19 | 91.06 |
| TRUE | 6.81 | 8.94 |

- **chi.sq:**

Table 102: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 0.4079 | 1 | 0.5231 |

- `gamma.aminobutyric.acid.analogs`:

- `counts`:

| | BZD | No BZD |
|--------------|-----|--------|
| FALSE | 176 | 220 |
| TRUE | 15 | 26 |

- `percents`:

| | BZD | No BZD |
|--------------|-------|--------|
| FALSE | 92.15 | 89.43 |
| TRUE | 7.85 | 10.57 |

- `chi.sq`:

Table 105: Pearson's Chi-squared test with Yates' continuity correction: `x` and `my.group`

| Test statistic | df | P value |
|----------------|----|---------|
| 0.6406 | 1 | 0.4235 |

Sedatives

- `dexmedetomidine`:

- `time.wt.avg.rate`:

* **results** *:

| <code>&nbsp;</code> | BZD | No BZD |
|-------------------------|--------|--------|
| n | 13 | 13 |
| nvalid | 13 | 13 |
| mean | 0.3503 | 0.361 |
| sd | 0.1748 | 0.2141 |
| min | 0.1 | 0.1 |
| Q1 | 0.1823 | 0.1591 |

```

**median**    0.4084  0.3715

**Q3**        0.4433  0.531

**max**       0.6572  0.6615

**percZero**   0      0
-----

```

* **normality**:

```

-----
Test statistic  P value
-----
      0.9191      0.04276 *
-----

```

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

```

-----
Test statistic  P value  Alternative hypothesis
-----
           80      0.8374      two.sided
-----

```

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

– total.cont.dose:

* **results**:

```

-----
      &nbsp;      BZD  No BZD
-----
**n**      13    13

**nvalid**  13    13

**mean**    1493  1626

**sd**      1619  2248

**min**     3.409 22.27

**Q1**      202.7 167

**median**  591.1 631.7

**Q3**      2819  2590

**max**     4835  7634

```

```

**percZero**      0      0
-----

```

```

* **normality**:

```

```

-----
Test statistic      P value
-----
      0.7914      0.0001264 * * *
-----

```

Table: Shapiro-Wilk normality test: `x`

```

* **comparison**:

```

```

-----
Test statistic      P value      Alternative hypothesis
-----
          90          0.801          two.sided
-----

```

Table: Wilcoxon rank sum test: `x` by `my.group`

– total.bolus.dose:

```

* **results**:

```

```

-----
      &nbsp;      BZD      No BZD
-----
**n**      13      13
**nvalid**      0      0
**mean**      NA      NA
**sd**      NA      NA
**min**      NA      NA
**Q1**      NA      NA
**median**      NA      NA
**Q3**      NA      NA
**max**      NA      NA
**percZero**      NA      NA
-----

```

```

* **normality**: Insufficient sample size for normality testing

```

```

* **comparison**: Insufficient sample size for inference testing

```

– total.dose:

* **results**:

| | BZD | No BZD |
|--------------|-------|--------|
| **n** | 13 | 13 |
| **nvalid** | 13 | 13 |
| **mean** | 1493 | 1626 |
| **sd** | 1619 | 2248 |
| **min** | 3.409 | 22.27 |
| **Q1** | 202.7 | 167 |
| **median** | 591.1 | 631.7 |
| **Q3** | 2819 | 2590 |
| **max** | 4835 | 7634 |
| **percZero** | 0 | 0 |

* **normality**:

| Test statistic | P value |
|----------------|-----------------|
| 0.7914 | 0.0001264 * * * |

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 90 | 0.801 | two.sided |

Table: Wilcoxon rank sum test: `x` by `my.group`

- fentanyl:

– time.wt.avg.rate:

* **results**:

| | BZD | No BZD |
|--------|-----|--------|
|--------|-----|--------|

| | | |
|---------------------|-------|-------|
| **n** | 257 | 293 |
| **nvalid** | 186 | 184 |
| **mean** | 78.67 | 67.06 |
| **sd** | 47.99 | 39.33 |
| **min** | 12.5 | 9.768 |
| **Q1** | 48.14 | 38.16 |
| **median** | 71.95 | 58.51 |
| **Q3** | 95.07 | 91.74 |
| **max** | 441.5 | 223.1 |
| **percZero** | 0 | 0 |

* ****normality****:

| Test statistic | P value |
|----------------|----------------|
| 0.858 | 7.59e-18 * * * |

Table: Shapiro-Wilk normality test: `x`

* ****comparison****:

| Test statistic | P value | Alternative hypothesis |
|----------------|--------------|------------------------|
| 19878 | 0.007186 * * | two.sided |

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

– total.cont.dose:

* ****results****:

| | BZD | No BZD |
|-------------------|------|--------|
| **n** | 257 | 293 |
| **nvalid** | 186 | 184 |
| **mean** | 5497 | 2679 |
| **sd** | 7988 | 3743 |

| | | |
|---------------------|-------|-------|
| **min** | 25 | 22.08 |
| **Q1** | 1406 | 589.6 |
| **median** | 2751 | 1698 |
| **Q3** | 6111 | 3298 |
| **max** | 51230 | 37680 |
| **percZero** | 0 | 0 |

* ****normality****:

| Test statistic | P value |
|----------------|-----------------|
| 0.5628 | 2.221e-29 * * * |

Table: Shapiro-Wilk normality test: `x`

* ****comparison****:

| Test statistic | P value | Alternative hypothesis |
|----------------|-----------------|------------------------|
| 21869 | 3.763e-06 * * * | two.sided |

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

– total.bolus.dose:

* ****results****:

| | BZD | No BZD |
|-------------------|-------|--------|
| **n** | 257 | 293 |
| **nvalid** | 71 | 109 |
| **mean** | 201.1 | 158.1 |
| **sd** | 190.9 | 152 |
| **min** | 2 | 1 |
| **Q1** | 75 | 50 |
| **median** | 125 | 100 |

| | | |
|---------------------|------|-----|
| **Q3** | 275 | 200 |
| **max** | 1000 | 875 |
| **percZero** | 0 | 0 |

* ****normality****:

| Test statistic | P value |
|----------------|----------------|
| 0.7863 | 6.12e-15 * * * |

Table: Shapiro-Wilk normality test: `x`

* ****comparison****:

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 4376 | 0.1367 | two.sided |

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

– total.dose:

* ****results****:

| | BZD | No BZD |
|---------------------|-------|--------|
| **n** | 257 | 293 |
| **nvalid** | 257 | 293 |
| **mean** | 4034 | 1741 |
| **sd** | 7194 | 3206 |
| **min** | 2 | 1 |
| **Q1** | 275 | 125 |
| **median** | 1655 | 538.5 |
| **Q3** | 4156 | 2290 |
| **max** | 51230 | 37680 |
| **percZero** | 0 | 0 |

* **normality**:

| Test statistic | P value |
|----------------|-----------------|
| 0.4987 | 1.253e-36 * * * |

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

| Test statistic | P value | Alternative hypothesis |
|----------------|-----------------|------------------------|
| 46962 | 5.497e-07 * * * | two.sided |

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

- hydromorphone:

– time.wt.avg.rate:

* **results**:

| | BZD | No BZD |
|--------------|--------|---------|
| **n** | 16 | 24 |
| **nvalid** | 3 | 11 |
| **mean** | 2.249 | 0.9427 |
| **sd** | 0.8415 | 0.7443 |
| **min** | 1.624 | 0.09887 |
| **Q1** | 1.77 | 0.4559 |
| **median** | 1.917 | 0.6855 |
| **Q3** | 2.561 | 1.324 |
| **max** | 3.206 | 2.355 |
| **percZero** | 0 | 0 |

* **normality**:

| Test statistic | P value |
|----------------|---------|
|----------------|---------|

0.932 0.3257

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

Test statistic P value Alternative hypothesis

29 0.06044 two.sided

Table: Wilcoxon rank sum test: `x` by `my.group`

– total.cont.dose:

* **results**:

 BZD No BZD

n 16 24

nvalid 3 11

mean 207 65.86

sd 177.7 96.39

min 46 4.309

Q1 111.7 10.69

median 177.3 31.72

Q3 287.5 46.2

max 397.6 302.8

percZero 0 0

* **normality**:

Test statistic P value

0.7369 0.000915 * * *

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 28 | 0.08791 | two.sided |

Table: Wilcoxon rank sum test: `x` by `my.group`

– total.bolus.dose:

* **results**:

| | BZD | No BZD |
|---------------------|-------|--------|
| **n** | 16 | 24 |
| **nvalid** | 13 | 13 |
| **mean** | 2.9 | 4.038 |
| **sd** | 3.824 | 4.611 |
| **min** | 0.2 | 0.2 |
| **Q1** | 1 | 1 |
| **median** | 2 | 2.8 |
| **Q3** | 3 | 5 |
| **max** | 15 | 17 |
| **percZero** | 0 | 0 |

* **normality**:

| Test statistic | P value |
|----------------|-----------------|
| 0.6885 | 3.707e-06 * * * |

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 70.5 | 0.4854 | two.sided |

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

– total.dose:

* **results**:

| | BZD | No BZD |
|-----------------|-------|--------|
| n | 16 | 24 |
| nvalid | 16 | 24 |
| mean | 41.16 | 32.37 |
| sd | 104.8 | 71 |
| min | 0.2 | 0.2 |
| Q1 | 1.375 | 2.6 |
| median | 2 | 5.735 |
| Q3 | 6.75 | 31.07 |
| max | 397.6 | 302.8 |
| percZero | 0 | 0 |

* **normality**:

| Test statistic | P value |
|----------------|-----------------|
| 0.4656 | 6.846e-11 * * * |

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 141.5 | 0.1666 | two.sided |

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

• ketamine:

– time.wt.avg.rate:

* **results**:

| | BZD | No BZD |
|---------------------|---------|---------|
| **n** | 4 | 8 |
| **nvalid** | 2 | 2 |
| **mean** | 0.1178 | 0.5032 |
| **sd** | 0.05404 | 0.5844 |
| **min** | 0.07962 | 0.08994 |
| **Q1** | 0.09872 | 0.2966 |
| **median** | 0.1178 | 0.5032 |
| **Q3** | 0.1369 | 0.7098 |
| **max** | 0.156 | 0.9164 |
| **percZero** | 0 | 0 |

* ****normality****:

| Test statistic | P value |
|----------------|-----------|
| 0.6969 | 0.01066 * |

Table: Shapiro-Wilk normality test: `x`

* ****comparison****:

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 1 | 0.6667 | two.sided |

Table: Wilcoxon rank sum test: `x` by `my.group`

– total.cont.dose:

* ****results****:

| | BZD | No BZD |
|-------------------|-------|--------|
| **n** | 4 | 8 |
| **nvalid** | 2 | 2 |
| **mean** | 314.7 | 718.2 |

| | | |
|---------------------|-------|-------|
| **sd** | 190.1 | 811.6 |
| **min** | 180.3 | 144.3 |
| **Q1** | 247.5 | 431.3 |
| **median** | 314.7 | 718.2 |
| **Q3** | 381.9 | 1005 |
| **max** | 449.1 | 1292 |
| **percZero** | 0 | 0 |

* ****normality****:

| Test statistic | P value |
|----------------|---------|
| 0.8101 | 0.1215 |

Table: Shapiro-Wilk normality test: `x`

* ****comparison****:

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 2 | 1 | two.sided |

Table: Wilcoxon rank sum test: `x` by `my.group`

– total.bolus.dose:

* ****results****:

| | BZD | No BZD |
|-------------------|-------|--------|
| **n** | 4 | 8 |
| **nvalid** | 3 | 6 |
| **mean** | 97.58 | 195.8 |
| **sd** | 76.39 | 60.03 |
| **min** | 20 | 100 |
| **Q1** | 60 | 162.5 |


```

**median**      100    212.5
**Q3**          136.4  243.8
**max**         172.7  250
**percZero**    0      0
-----

```

* **normality**:

```

-----
Test statistic   P value
-----
0.9308          0.4885
-----

```

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

```

-----
Test statistic   P value   Alternative hypothesis
-----
2.5             0.1182    two.sided
-----

```

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

– total.dose:

* **results**:

```

-----
&nbsp;      BZD   No BZD
-----
**n**      4     8
**nvalid**  4     8
**mean**   230.5 326.4
**sd**     163.1 393.9
**min**    100   100
**Q1**     154.5 148.6
**median** 176.5 212.5
**Q3**     252.5 250
**max**    469.1 1292
**percZero** 0     0

```

* **normality**:

| Test statistic | P value |
|----------------|-----------------|
| 0.5668 | 5.752e-05 * * * |

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 13.5 | 0.7332 | two.sided |

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

- lorazepam:

- time.wt.avg.rate:

* **results**:

| | BZD | No BZD |
|--------------|---------|--------|
| **n** | 27 | 42 |
| **nvalid** | 2 | 0 |
| **mean** | 1.819 | NA |
| **sd** | 0.03969 | NA |
| **min** | 1.791 | NA |
| **Q1** | 1.805 | NA |
| **median** | 1.819 | NA |
| **Q3** | 1.833 | NA |
| **max** | 1.847 | NA |
| **percZero** | 0 | NA |

* **normality**: Insufficient sample size for normality testing

* **comparison**: Insufficient sample size for inference testing

- total.cont.dose:

* **results**:

| | BZD | No BZD |
|--------------|-------|--------|
| **n** | 27 | 42 |
| **nvalid** | 2 | 0 |
| **mean** | 69.61 | NA |
| **sd** | 45.76 | NA |
| **min** | 37.25 | NA |
| **Q1** | 53.43 | NA |
| **median** | 69.61 | NA |
| **Q3** | 85.79 | NA |
| **max** | 102 | NA |
| **percZero** | 0 | NA |

* **normality**: Insufficient sample size for normality testing

* **comparison**: Insufficient sample size for inference testing

– total.bolus.dose:

* **results**:

| | BZD | No BZD |
|--------------|-------|--------|
| **n** | 27 | 42 |
| **nvalid** | 25 | 42 |
| **mean** | 4.18 | 4.661 |
| **sd** | 5.744 | 9.02 |
| **min** | 0.5 | 0.5 |
| **Q1** | 1.5 | 1 |
| **median** | 2 | 2 |
| **Q3** | 4 | 5 |
| **max** | 25 | 56.5 |
| **percZero** | 0 | 0 |

* **normality**:

| Test statistic | P value |
|----------------|-----------------|
| 0.4457 | 1.731e-14 * * * |

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 533.5 | 0.9156 | two.sided |

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

– total.dose:

* **results**:

| | BZD | No BZD |
|-----------------|-------|--------|
| n | 27 | 42 |
| nvalid | 27 | 42 |
| mean | 9.027 | 4.661 |
| sd | 20.39 | 9.02 |
| min | 0.5 | 0.5 |
| Q1 | 1.75 | 1 |
| median | 2 | 2 |
| Q3 | 4.5 | 5 |
| max | 102 | 56.5 |
| percZero | 0 | 0 |

* **normality**:

| Test statistic | P value |
|----------------|---------|
|----------------|---------|

```

0.3826      1.653e-15 * * *
-----

```

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

```

-----
Test statistic   P value   Alternative hypothesis
-----
      616.5      0.5387      two.sided
-----

```

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

- midazolam:

– time.wt.avg.rate:

* **results**:

```

-----
      &nbsp;      BZD   No BZD
-----
**n**      191   102
**nvalid**  190    0
**mean**    2.456   NA
**sd**      2.148   NA
**min**     0.25    NA
**Q1**      1.143   NA
**median**  1.849   NA
**Q3**      3.108   NA
**max**     15.12   NA
**percZero** 0     NA
-----

```

* **normality**:

```

-----
Test statistic      P value
-----
      0.7371      4.481e-17 * * *
-----

```

Table: Shapiro-Wilk normality test: `x`

```

* **comparison**: Insufficient sample size for inference testing
- total.cont.dose:

```

```

* **results**:

```

| | BZD | No BZD |
|--------------|----------|--------|
| **n** | 191 | 102 |
| **nvalid** | 190 | 0 |
| **mean** | 107.7 | NA |
| **sd** | 227.1 | NA |
| **min** | 0.008333 | NA |
| **Q1** | 10.68 | NA |
| **median** | 39.37 | NA |
| **Q3** | 115.4 | NA |
| **max** | 1939 | NA |
| **percZero** | 0 | NA |

```

* **normality**:

```

| Test statistic | P value |
|----------------|-----------------|
| 0.4457 | 5.642e-24 * * * |

Table: Shapiro-Wilk normality test: `x`

```

* **comparison**: Insufficient sample size for inference testing
- total.bolus.dose:

```

```

* **results**:

```

| | BZD | No BZD |
|------------|-------|--------|
| **n** | 191 | 102 |
| **nvalid** | 77 | 102 |
| **mean** | 7.565 | 5.392 |
| **sd** | 7.902 | 5.731 |

| | | |
|---------------------|----|-------|
| **min** | 1 | 1 |
| **Q1** | 4 | 2 |
| **median** | 6 | 4 |
| **Q3** | 9 | 6.375 |
| **max** | 56 | 38 |
| **percZero** | 0 | 0 |

* ****normality****:

| Test statistic | P value |
|----------------|-----------------|
| 0.6431 | 3.528e-19 * * * |

Table: Shapiro-Wilk normality test: `x`

* ****comparison****:

| Test statistic | P value | Alternative hypothesis |
|----------------|--------------|------------------------|
| 5036 | 0.001087 * * | two.sided |

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

– total.dose:

* ****results****:

| | BZD | No BZD |
|-------------------|----------|--------|
| **n** | 191 | 102 |
| **nvalid** | 191 | 102 |
| **mean** | 110.2 | 5.392 |
| **sd** | 228.2 | 5.731 |
| **min** | 0.008333 | 1 |
| **Q1** | 13.17 | 2 |
| **median** | 41.82 | 4 |

```

      **Q3**      117.2    6.375
      **max**      1945     38
      **percZero**    0      0
-----

```

* **normality**:

```

-----
Test statistic      P value
-----
      0.3767      1.789e-30 * * *
-----

```

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

```

-----
Test statistic      P value      Alternative hypothesis
-----
      17141      8.351e-27 * * *      two.sided
-----

```

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

- **propofol**:

– **time.wt.avg.rate**:

* **results**:

```

-----
      &nbsp;      BZD    No BZD
-----
      **n**      29     61
      **nvalid**  27     61
      **mean**   26.59  19.89
      **sd**     11.2   13.43
      **min**    7.579   2.5
      **Q1**     17.53  8.611
      **median** 26.3   15.32
      **Q3**     35.93  30.76
      **max**    45.83  56.88
      **percZero** 0      0

```



```

-----

* **normality**:
```

| Test statistic | P value |
|----------------|-----------------|
| 0.9438 | 0.0008266 * * * |

```

-----

Table: Shapiro-Wilk normality test: `x`

* **comparison**:
```

| Test statistic | P value | Alternative hypothesis |
|----------------|--------------|------------------------|
| 1112 | 0.009287 * * | two.sided |

```

-----

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

- total.cont.dose:
```

```

* **results**:
```

| | BZD | No BZD |
|-----------------|-------|--------|
| n | 29 | 61 |
| nvalid | 27 | 61 |
| mean | 6154 | 2851 |
| sd | 16926 | 4675 |
| min | 1.8 | 9.818 |
| Q1 | 449.5 | 281.5 |
| median | 1451 | 780 |
| Q3 | 3609 | 3336 |
| max | 88110 | 20100 |
| percZero | 0 | 0 |

```

-----

* **normality**:
```

| Test statistic | P value |
|----------------|---------|
|----------------|---------|

0.3445 5.754e-18 * * *

Table: Shapiro-Wilk normality test: `x`

* **comparison**:

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 942 | 0.2857 | two.sided |

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

– total.bolus.dose:

* **results**:

| | BZD | No BZD |
|-----------------|-------|--------|
| n | 29 | 61 |
| nvalid | 3 | 0 |
| mean | 103.3 | NA |
| sd | 95.04 | NA |
| min | 10 | NA |
| Q1 | 55 | NA |
| median | 100 | NA |
| Q3 | 150 | NA |
| max | 200 | NA |
| percZero | 0 | NA |

* **normality**:

| Test statistic | P value |
|----------------|---------|
| 0.9991 | 0.942 |

Table: Shapiro-Wilk normality test: `x`

* **comparison**: Insufficient sample size for inference testing

– total.dose:

```
* **results**:
```

| | BZD | No BZD |
|--------------|-------|--------|
| **n** | 29 | 61 |
| **nvalid** | 29 | 61 |
| **mean** | 5740 | 2851 |
| **sd** | 16385 | 4675 |
| **min** | 1.8 | 9.818 |
| **Q1** | 352 | 281.5 |
| **median** | 1388 | 780 |
| **Q3** | 3629 | 3336 |
| **max** | 88110 | 20100 |
| **percZero** | 0 | 0 |

```
* **normality**:
```

| Test statistic | P value |
|----------------|-----------------|
| 0.3419 | 3.394e-18 * * * |

Table: Shapiro-Wilk normality test: `x`

```
* **comparison**:
```

| Test statistic | P value | Alternative hypothesis |
|----------------|---------|------------------------|
| 950 | 0.5747 | two.sided |

Table: Wilcoxon rank sum test with continuity correction: `x` by `my.group`

References

Data was processed using R version 3.2.4 (2016-03-10) on a x86_64-w64-mingw32 system.

Prepared by: Brian Gulbis

```
##
```

```
## To cite R in publications use:
```

```

##
## R Core Team (2016). R: A language and environment for
## statistical computing. R Foundation for Statistical Computing,
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##
## A BibTeX entry for LaTeX users is
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## @Manual{,
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##   author = {{R Core Team}},
##   organization = {R Foundation for Statistical Computing},
##   address = {Vienna, Austria},
##   year = {2016},
##   url = {https://www.R-project.org/},
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