r2rtf – a Lightweight R Package to Produce Tables and Figures in RTF Format

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Yilong Zhang, Siruo Wang, Simiao Ye

Madhusudhan Ginnaram, Keaven Anderson

Motivation

- In the pharmaceutical industry, RTF/Microsoft Word play a central role in preparing clinical study reports
  - ICH E3 Structure and Content of Clinical Study Reports

- Different organizations can have different table standards
  - E.g.: Table layout, Font size, Border type, Footnote, Data source

```
#>                                          Treatement      Comparison
#>                                            N=100           N=300
#> ---------------------------------------------------------------------
#> A                                        104 (20%)       100 (40%)
#> B                                         23 (40%)        43 (50%)
#>
#> this is a very long section header
#> estimate                                    55.23
#>   95% CI                                (44.8, 67.4)
```

rtables from Roche

- r2rtf is designed to:
  - Generate highly customized tables
  - Limit package dependency
  - Target regulatory deliverables
  - Support pipes (%>%)

Protocol: CDISCPILOT01 Page 1 of 1
Population: Safety

Table 14-4.01
Summary of Planned Exposure to Study Drug, as of End of Study

		Completers at Week 24			Safety Population [1]		
		Placebo (N=60)	Xanomeline Low Dose (N=28)	Xanomeline High Dose (N=30)	Placebo (N=86)	Xanomeline Low Dose (N=84)	Xanomeline High Dose (N=84)
Average daily dose (mg)	n	60	28	30	86	84	84
	Mean	0.0	54.0	77.0	0.0	54.0	71.6
	SD	0.00	0.00	0.58	0.00	0.00	8.11
	Median	0.0	54.0	76.9	0.0	54.0	75.1
	Min	0.0	54.0	76.1	0.0	54.0	54.0
	Max	0.0	54.0	78.6	0.0	54.0	78.6

pharmaRTF & CDISC example

ANCOVA of Change from Baseline at Week 8
Missing Data Approach
Analysis Population

	Baseline		Week 20		Change from Baseline		
Treatment	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	LS Mean (95% CI)[a]
Study Drug	61	16.6 (4.41)	61	-6.6 (5.95)	61	-7.0 (9.16)	-7.0 (-8.58, -5.38)
Placebo	70	18.4 (6.34)	70	-9.0 (7.04)	70	-8.7 (8.54)	-8.7 (-10.17, -7.18)
Pairwise Comparison				Difference in LS Mean (95% CI)[a]			p-Value
Study Drug vs. Placebo				1.7 (-0.49, 3.88)			0.130
Root Mean Squared Error of Change = 6.23							

[a]Based on an ANCOVA model.
ANCOVA = Analysis of Covariance, CI = Confidence Interval, LS = Least Squares, SD = Standard Deviation

Source: [study999: adam-adeff]

r2rtf

Minimal Example

```
head(iris) %>% rtf_body() %>%                  # Step 1 Add attributes
               rtf_encode() %>%                # Step 2 Convert attributes to RTF encode
               write_rtf(file = "tmp.rtf")     # Step 3 Write to a .rtf file
```

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.1	3.5	1.4	0.2	setosa
4.9	3	1.4	0.2	setosa
4.7	3.2	1.3	0.2	setosa
4.6	3.1	1.5	0.2	setosa
5	3.6	1.4	0.2	setosa
5.4	3.9	1.7	0.4	setosa

Package Overview

r2rtf package provides the flexibility to customize table appearance for

- table title, subtitle, column header, footnote, and data source
- table size, border type, color, line width, column width, row height, text format, font size, text color, alignment, etc.
- The control of the format can be row or column vectorized by leveraging the vectorization in R
- Pagination, section grouping multiple table concatenations for complicated table layouts

r2rtf package also provides the flexibility to covert figures in RTF format

A Simple Example

```
ae_t1 %>%
  rtf_body(col_rel_width = c(3, rep(1,3)),
           text_justification = c("l", rep("c",3))) %>%
  rtf_encode() %>%
  write_rtf("rtf/ae_simple.rtf");
```

AEDECOD	Placebo	Xanomeline High Dose	Xanomeline Low Dose
APPLICATION SITE DERMATITIS	5	7	9
APPLICATION SITE ERYTHEMA	0	15	12
APPLICATION SITE IRRITATION	0	9	9
APPLICATION SITE PRURITUS	6	22	22
APPLICATION SITE VESICLES	0	6	0
BLISTER	0	0	5
COUGH	0	5	6
DIARRHOEA	9	0	5
DIZZINESS	0	12	8
ERYTHEMA	9	14	15
FATIGUE	0	5	5
HEADACHE	7	6	0
HYPERHIDROSIS	0	8	0
NASOPHARYNGITIS	0	6	0
NAUSEA	0	6	0
PRURITUS	8	26	23
RASH	5	11	13
SINUS BRADYCARDIA	0	8	7
UPPER RESPIRATORY TRACT INFECTION	6	0	0
VOMITING	0	7	0

Function Summary

Functions	Purpose	Optional/required
`rtf_page_header()`	add page header	optional
`rtf_title()`	add title	optional
`rtf_subline()`	add subject line	optional
`rtf_colheader()`	add column header	optional
`rtf_body()`	add table body	required
`rtf_footnote()`	add footnote	optional
`rtf_source()`	add data source	optional
`rtf_page_footer()`	add page footer	optional
`rtf_encode()`	convert table into rtf code	required
`write_rtf()`	write rtf code into .rtf file	required

rtf_page_header()

rtf_title()

Listing of Subjects With Series Adverse Events
ASaT

rtf_subline()

Trial Number: xxxx

rtf_colheader()

rtf_body()

arg: page_by()

arg: group_by()

Subject ID	Rel Day of Onset	Aderse Event	Duration	Intensity	Serious	Related	Action Taken	Outcome
Xanomeline Low Dose								
Trial Number = CDISCPILOT01, Site Number = 701, Subject ID = 01-701-1188, Gender = M, Race = WHITE, AGE = 71 Years								
01-701-1188	18	URTICARIA	NA	MODERATE	N	PROBABLE		NOT RECOVERED/NOT RESOLVED
	35	APPLICATION SITE URTICARIA	NA	MILD	N	PROBABLE		NOT RECOVERED/NOT RESOLVED
		IA	NA	MILD	N	PROBABLE		NOT RECOVERED/NOT RESOLVED
Trial Number = CDISCPILOT01, Site Number = 701, Subject ID = 01-701-1192, Gender = F, Race = WHITE, AGE = 80 Years								
01-701-1192	-782	COUGH	NA	MODERATE	N	NONE		NOT RECOVERED/NOT RESOLVED
	13	NASAL MUCOSA BIOPSY	1 DAY	MILD	N	NONE		RECOVERED/RESOLVED
	17	SECRETION DISCHARGE	39 DAY	MILD	N	NONE		NOT RECOVERED/NOT RESOLVED
		ERYTHEMA	39 DAY	MILD	N	NONE		NOT RECOVERED/NOT RESOLVED

rtf_footnote()

This is footnote 1
This is footnote 2

Source: [Study MK9999P001: adam-adae]

rtf_source()

rtf_page_footer()

CONFIDENTIAL

Figure Example

```
filename <- "fig/fig1.png";
filename %>%
  rtf_read_png() %>%
  rtf_figure() %>%
  rtf_encode(type = "figure") %>%
  write_rtf(file = "fig/fig-simple.rtf");
```

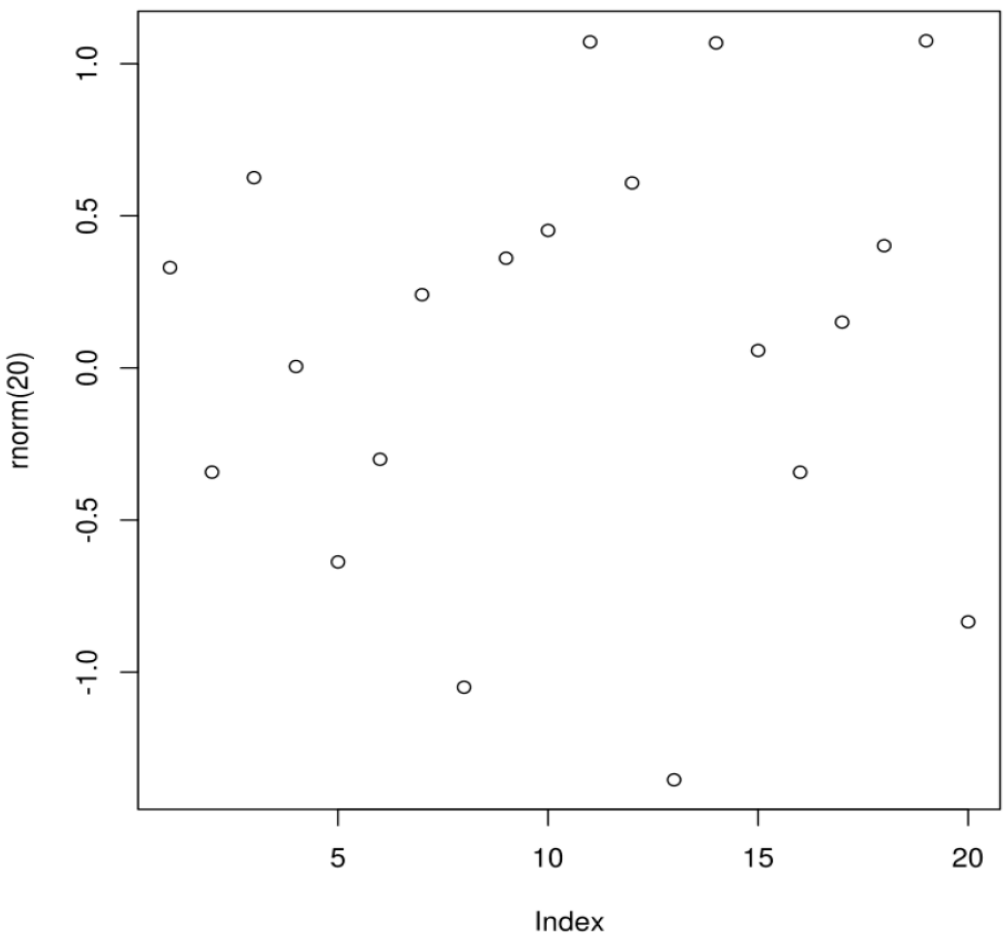

Figure 1. A sample figure output

Efficacy Table Example

Sample Data Set

	Trt	N1	Mean1	N2	Mean2	N3	Mean3	CI
1	Study Drug	61	16.6 (4.41)	61	-6.6 (5.95)	61	-7.0 (9.16)	-7.0 (-8.58, -5.38)
2	Placebo	70	18.4 (6.34)	70	-9.0 (7.04)	70	-8.7 (8.54)	-8.7 (-10.17, -7.18)

Figure 2. A summary of `tbl_1`

	comp	mean	p
1	Study Drug vs. Placebo	1.7 (-0.49, 3.88)	0.130

Figure 3. A summary of `tbl_2`

	rmse
1	Root Mean Squared Error of Change = 6.23

Figure 4. A summary of `tbl_3`

```
# add tbl_1, tbl_1, and tbl_3 into a list in order
tbl <- list(tbl_1, tbl_2, tbl_3);
# concatenate a list of table and save to an RTF file
tbl %>% rtf_encode() %>% write_rtf("table3.rtf");
```

Efficacy Table Example

ANCOVA of Change from Baseline at Week 20
Missing Data Approach
Analysis Population

	Baseline		Week 20		Change from Baseline		
Treatment	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	LS Mean (95% CI)
Study Drug	61	16.6 (4.41)	61	-6.6 (5.95)	61	-7.0 (9.16)	-7.0 (-8.58, -5.38)
Placebo	70	18.4 (6.34)	70	-9.0 (7.04)	70	-8.7 (8.54)	-8.7 (-10.17, -7.18)
Pairwise Comparison				Difference in LS Mean (95% CI)			p-Value
Study Drug vs. Placebo				1.7 (-0.49, 3.88)			0.130
Root Mean Squared Error of Change = 6.23							

Based on an ANCOVA model.
ANCOVA = Analysis of Covariance, CI = Confidence Interval, LS = Least Squares, SD = Standard Deviation
Source: [Study MK9999P001: adam-adeff]

Acknowledgement

Team members who involved in testing and contributed table and figure examples

- Chen Huei-Ling
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- Preetham Palukuru
- Jane Liao
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- Benjamin Koch
- Nileshkumar Patel
- Benjamin Wang

References

- r2rtf:
  - Website: https://merck.github.io/r2rtf/ based on v0.1.1
  - Paper: https://www.pharmasug.org/proceedings/2020/DV/PharmaSUG-2020-DV-198.pdf
  - New features will be available in v0.2.0
  - Full SDLC will be completed in v0.2.0

- Other packages can create customized RTF/Microsoft Word table/figure:
  - gt: https://github.com/rstudio/gt
  - officer: https://github.com/davidgohel/officer
  - pharmaRTF: https://github.com/atorus-research/pharmaRTF
  - rtf: https://github.com/schaffman5/rtf
  - huxtable: https://hughjonesd.github.io/huxtable/
  - etc.

THANK YOU!

More Examples

Efficacy Table Example

```
# convert tbl_1 to the table body. Add title, subtitle, two table
# headers, and footnotes to the table body.
tbl_1 %>%
  rtf_title(title = "ANCOVA of Change from Baseline at Week 8",
            subtitle = c("Missing Data Approach",
                         "Analysis Population")) %>%
  rtf_colheader(colheader = " | Baseline | Week 20 | Change from Baseline",
                col_rel_width = c(3, 4, 4, 9),
                first_row = TRUE) %>%
  rtf_colheader(colheader = "Treatment | N | Mean (SD) | N | Mean (SD) | N |
                  Mean (SD) | LS Mean (95% CI)\\dagger") %>%
  rtf_body(col_rel_width = c(3,1,3,1,3,1,3,5),
           text_justification = c("l",rep("c",7)),
           last_row = FALSE) %>%
  rtf_footnote(footnote = "\\daggerBased on an ANCOVA model.
                           \nANCOVA = Analysis of Covariance,
                            CI = Confidence Interval,
                            LS = Least Squares, SD = Standard Deviation");
```

ANCOVA of Change from Baseline at Week 8
Missing Data Approach
Analysis Population
new subtitle here

	Baseline		Week 20		Change from Baseline		
Treatment	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	LS Mean (95% CI)†
Study Drug	61	16.6 (4.41)	61	-6.6 (5.95)	61	-7.0 (9.16)	-7.0 (-8.58, -5.38)
Placebo	70	18.4 (6.34)	70	-9.0 (7.04)	70	-8.7 (8.54)	-8.7 (-10.17, -7.18)
Pairwise Comparison				Difference in LS Mean (95% CI)†			p-Value
Study Drug vs. Placebo				1.7 (-0.49, 3.88)			0.130
Root Mean Squared Error of Change = 6.23							

†Based on an ANCOVA model.
ANCOVA = Analysis of Covariance, CI = Confidence Interval, LS = Least Squares, SD = Standard Deviation
Source: [study999: adam-adeff]

Efficacy Table Example

```
# convert tbl_2 to the table body. Add a table column header to table body.
 tbl_2 %>%
  rtf_colheader(colheader = "Pairwise Comparison |
                Difference in LS Mean(95% CI)\\dagger | p-Value",
                text_justification = c("l","c","c")) %>%
  rtf_body(col_rel_width = c(8,7,5),
           text_justification = c("l","c","c"),
           last_row = FALSE);
```

ANCOVA of Change from Baseline at Week 8
Missing Data Approach
Analysis Population
new subtitle here

	Baseline		Week 20		Change from Baseline		
Treatment	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	LS Mean (95% CI)†
Study Drug	61	16.6 (4.41)	61	-6.6 (5.95)	61	-7.0 (9.16)	-7.0 (-8.58, -5.38)
Placebo	70	18.4 (6.34)	70	-9.0 (7.04)	70	-8.7 (8.54)	-8.7 (-10.17, -7.18)
Pairwise Comparison				Difference in LS Mean (95% CI)†			p-Value
Study Drug vs. Placebo				1.7 (-0.49, 3.88)			0.130
Root Mean Squared Error of Change = 6.23							

†Based on an ANCOVA model.
ANCOVA = Analysis of Covariance, CI = Confidence Interval, LS = Least Squares, SD = Standard Deviation
Source: [study999: adam-adeff]

Efficacy Table Example

```
# convert tbl_3 to the table body. Add data source to the table body.
tbl_3 %>%
 rtf_body(colheader = FALSE,
          text_justification = "l") %>%
 rtf_source(source = "Source: [study999:adam-adeff]");
# add tbl_1, tbl_1, and tbl_3 into a list in order
tbl <- list(tbl_1, tbl_2, tbl_3);
# concatenate a list of table and save to an RTF file
tbl %>% rtf_encode() %>% write_rtf("table3.rtf");
```

ANCOVA of Change from Baseline at Week 8
Missing Data Approach
Analysis Population
new subtitle here

	Baseline		Week 20		Change from Baseline		
Treatment	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	LS Mean (95% CI)[1]
Study Drug	61	16.6 (4.41)	61	-6.6 (5.95)	61	-7.0 (9.16)	-7.0 (-8.58, -5.38)
Placebo	70	18.4 (6.34)	70	-9.0 (7.04)	70	-8.7 (8.54)	-8.7 (-10.17, -7.18)
Pairwise Comparison				Difference in LS Mean (95% CI)[1]			p-Value
Study Drug vs. Placebo				1.7 (-0.49, 3.88)			0.130
Root Mean Squared Error of Change = 6.23							

[1] Based on an ANCOVA model.
ANCOVA = Analysis of Covariance, CI = Confidence Interval, LS = Least Squares, SD = Standard Deviation
Source: [study999: adam-adeff]

Advanced Features for `rtf_body()`

Features	Purpose	Options	Default
page number	number of rows in one page	any integer number	40 rows for portrait 28 rows for landscape
page by	group rows by section	column name	NULL
page by new page	new page for each section	TRUE or FALSE	FALSE

Page Number Feature

Analysis of Subjects With Specific Adverse Events
(Incidence > 10 Subjects in One or More Treatment Groups)
ASaT

	Placebo		Drug High Dose		Drug Low Dose	
	n	(%)	n	(%)	n	(%)
APPLICATION SITE DERMATITIS	5	7.25	7	8.86	9	11.69
APPLICATION SITE ERYTHEMA	0	0	15	18.99	12	15.58
APPLICATION SITE IRRITATION	0	0	9	11.39	9	11.69
APPLICATION SITE PRURITUS	6	8.7	22	27.85	22	28.57
APPLICATION SITE VESICLES	0	0	6	7.59	0	0
BLISTER	0	0	0	0	5	6.49
COUGH	0	0	5	6.33	6	7.79
DIARRHOEA	9	13.04	0	0	5	6.49
DIZZINESS	0	0	12	15.19	8	10.39
ERYTHEMA	9	13.04	14	17.72	15	19.48
FATIGUE	0	0	5	6.33	5	6.49
HEADACHE	7	10.14	6	7.59	0	0
HYPERHIDROSIS	0	0	8	10.13	0	0
NASOPHARYNGITIS	0	0	6	7.59	0	0
NAUSEA	0	0	6	7.59	0	0
PRURITUS	8	11.59	26	32.91	23	29.87
RASH	5	7.25	11	13.92	13	16.88
SINUS BRADYCARDIA	0	0	8	10.13	7	9.09
SKIN IRRITATION	0	0	5	6.33	6	7.79
UPPER RESPIRATORY TRACT INFECTION	6	8.7	0	0	0	0
VOMITING	0	0	7	8.86	0	0

This is a footnote
Source: xxx

default value for parameter page_num:
40 rows for portrait

set page_num = 10

Analysis of Subjects With Specific Adverse Events
(Incidence > 10 Subjects in One or More Treatment Groups)
ASaT

	Placebo		Drug High Dose		Drug Low Dose	
	n	(%)	n	(%)	n	(%)
APPLICATION SITE DERMATITIS	5	7.25	7	8.86	9	11.69
APPLICATION SITE ERYTHEMA	0	0	15	18.99	12	15.58
APPLICATION SITE IRRITATION	0	0	9	11.39	9	11.69
APPLICATION SITE PRURITUS	6	8.7	22	27.85	22	28.57
APPLICATION SITE VESICLES	0	0	6	7.59	0	0
BLISTER	0	0	0	0	5	6.49
COUGH	0	0	5	6.33	6	7.79
DIARRHOEA	9	13.04	0	0	5	6.49
DIZZINESS	0	0	12	15.19	8	10.39
ERYTHEMA	9	13.04	14	17.72	15	19.48

This is a footnote
Source: xxx

Analysis of Subjects With Specific Adverse Events
(Incidence > 10 Subjects in One or More Treatment Groups)
ASaT

	Placebo		Drug High Dose		Drug Low Dose	
	n	(%)	n	(%)	n	(%)
FATIGUE	0	0	5	6.33	5	6.49
HEADACHE	7	10.14	6	7.59	0	0
HYPERHIDROSIS	0	0	8	10.13	0	0
NASOPHARYNGITIS	0	0	6	7.59	0	0
NAUSEA	0	0	6	7.59	0	0
PRURITUS	8	11.59	26	32.91	23	29.87
RASH	5	7.25	11	13.92	13	16.88
SINUS BRADYCARDIA	0	0	8	10.13	7	9.09
SKIN IRRITATION	0	0	5	6.33	6	7.79
UPPER RESPIRATORY TRACT INFECTION	6	8.7	0	0	0	0

This is a footnote
Source: xxx

Analysis of Subjects With Specific Adverse Events
(Incidence > 10 Subjects in One or More Treatment Groups)
ASaT

	Placebo		Drug High Dose		Drug Low Dose	
	n	(%)	n	(%)	n	(%)
VOMITING	0	0	7	8.86	0	0

This is a footnote
Source: xxx

Page By Feature Example

Sample Data Set

	var	1	1_pct	2	2_pct	3	3_pct	9999	9999_pct	var_label
1	Female	53	10.4	50	9.8	40	7.9	143	28.1	Gender
2	Male	33	6.5	34	6.7	44	8.7	111	21.9	Gender
3	<65	14	2.8	8	1.6	11	2.2	33	6.5	Age (Years)
4	>80	30	5.9	29	5.7	18	3.5	77	15.2	Age (Years)
5	65-80	42	8.3	47	9.3	55	10.8	144	28.3	Age (Years)
6										Age (Years)
7	Subjects with data	86		84		84		254		Age (Years)
8	Mean	75.2		75.7		74.4		75.1		Age (Years)
9	SD	8.6		8.3		7.9		8.2		Age (Years)
10	Median	76.0		77.5		76.0		77.0		Age (Years)
11	Range	52 to 89		51 to 88		56 to 88		51 to 89		Age (Years)
12	Black	8	1.6	6	1.2	9	1.8	23	4.5	Race
13	Caucasian	75	14.8	72	14.2	71	14.0	218	42.9	Race
14	Hispanic	3	0.6	6	1.2	3	0.6	12	2.4	Race
15	Other	0	0.0	0	0.0	1	0.2	1	0.2	Race

Figure 5. A sample data set on demographic and anthropometric characteristics

Page By Feature Example

```
tbl %>%
  rtf_title("Demographic and Anthropometric Characteristics",
            "ITT Subjects") %>%
  rtf_colheader(" | Placebo | Drug Low Dose | Drug High Dose | Total",
                col_rel_width = c(3, rep(2,4)),
                first_row = TRUE) %>%


  rtf_colheader(" | n | (%) | n | (%) | n | (%) | n |(%)",
                border_top = c("", rep("single", 8)),
                border_left = c("single", rep(c("single",""), 4)))) %>%
  rtf_body(page_by = "var_label",
           col_rel_width = c(3, rep(c(1.2, 0.8), 4)) ,
           text_justification = c("l", rep("d",8)),
           border_left = c("single", rep(c("single",""), 4) )) %>%
  rtf_footnote("This is a footnote", justification = "l") %>%
  rtf_source("Source: xxx", justification = "l") %>%
  rtf_encode() %>%
  write_rtf("table4.rtf");
```

Page By Feature

Demographic and Anthropometric Characteristics
ITT Subjects

	Placebo		Drug Low Dose		Drug High Dose		Total	
	n	(%)	n	(%)	n	(%)	n	(%)
Gender								
Female	53	10.4	50	9.8	40	7.9	143	28.1
Male	33	6.5	34	6.7	44	8.7	111	21.9
Age (Years)								
<65	14	2.8	8	1.6	11	2.2	33	6.5
>80	30	5.9	29	5.7	18	3.5	77	15.2
65-80	42	8.3	47	9.3	55	10.8	144	28.3
Subjects with data	86		84		84		254	
Mean	75.2		75.7		74.4		75.1	
SD	8.6		8.3		7.9		8.2	
Median	76.0		77.5		76.0		77.0	
Range	52 to 89		51 to 88		56 to 88		51 to 89	
Race								
Black	8	1.6	6	1.2	9	1.8	23	4.5
Caucasian	75	14.8	72	14.2	71	14.0	218	42.9
Hispanic	3	0.6	6	1.2	3	0.6	12	2.4
Other	0	0.0	0	0.0	1	0.2	1	0.2

This is a footnote
Source: xxx

Table 4. A summary table of demographic and anthropometric characteristics

page by & new page

page_by = "label", new_page = TRUE

Demographic and Anthropometric Characteristics
ITT Subjects

	Placebo		Drug Low Dose		Drug High Dose		Total	
	n	(%)	n	(%)	n	(%)	n	(%)
Gender								
Female	53	10.4	50	9.8	40	7.9	143	28.1
Male	33	6.5	34	6.7	44	8.7	111	21.9

This is a footnote
Source: xxx

Demographic and Anthropometric Characteristics
ITT Subjects

	Placebo		Drug Low Dose		Drug High Dose		Total	
	n	(%)	n	(%)	n	(%)	n	(%)
Age (Years)								
<65	14	2.8	8	1.6	11	2.2	33	6.5
>80	30	5.9	29	5.7	18	3.5	77	15.2
65-80	42	8.3	47	9.3	55	10.8	144	28.3
Subjects with data	86		84		84		254	
Mean	75.2		75.7		74.4		75.1	
SD	8.6		8.3		7.9		8.2	
Median	76.0		77.5		76.0		77.0	
Range	52 to 89		51 to 88		56 to 88		51 to 89	

This is a footnote
Source: xxx

Demographic and Anthropometric Characteristics
ITT Subjects

	Placebo		Drug Low Dose		Drug High Dose		Total	
	n	(%)	n	(%)	n	(%)	n	(%)
Race								
Black	8	1.6	6	1.2	9	1.8	23	4.5
Caucasian	75	14.8	72	14.2	71	14.0	218	42.9
Hispanic	3	0.6	6	1.2	3	0.6	12	2.4
Other	0	0.0	0	0.0	1	0.2	1	0.2

This is a footnote
Source: xxx

Features for `rtf_title()`, `rtf_footnote()`, and `rtf_source()`

Features	Options	Default
text font	Times New Roman, Times New Roman Greek, Arial Greek	Times New Roman
text format	normal, bold, italics, underline, etc…	normal
text font size	any integer size	12 for title, 9 for other content
text color	657 different colors named in R color() function	black
text background color	657 different colors named in R color() function	white
alignment	left, right, center, decimal	center
space	single-space, double-space, 1.5-space	single-space
space before text	any integer space	0.01 inch (15 twips)
space after text	any integer space	0.01 inch (15 twips)
first line Indent	any integer indent	0 inch
left indent	any integer indent	0 inch
right Indent	any integer indent	0 inch

Features for `rtf_colheader()` and `rtf_body()`

Features	Options	Default
border type	single, double, blank, dash, dot, etc…	double on top and bottom
border color	657 different colors named in R color() function	black
border line width	any integer width	0.01 inch (15 twips)
total column width	any integer width	page width / 1.4 inch
relative column width	any integer width	1:1:1:1…
row height	any integer height	0.15 inch (216 twips)
text font	Times New Roman, Times New Roman Greek, Arial Greek	Times New Roman
text format	normal, bold, italics, underline, etc…	normal
text font size	any integer size	9 for table content, 12 for title
text color	657 different colors named in R color() function	black
cell space before text	any integer space	0.01 inch (15 twips)
cell space after text	any integer space	0.01 inch (15 twips)

Highlighted Features for `rtf_figure()`

Features	Options	Default
page width	any integer width	8.5 inch
page height	any integer height	11 inch
orientation	portrait, landscape	portrait
doctype	csr, wma, wmm, narrow	wma
figure width	any integer width	5 inch
figure height	any integer height	5 inch