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*****;
* Project          : ZRHM-REXA-07-JP
*
* Program name     : F1501020301.sas
*
* Author          : L. Yan
*
* Date created     : 05/20/2015
*
* Purpose          : F1501020301
*
* Revision History :
*
* Date      Author      Ref      Revision (Date in YYYYMMDD format)
*
*****;

%let prgname=F1501020301_ZRHM_REXA_07_JP_V1;

options mprint;

options sasautos=("W:\pmp07\macros" sasautos) notes;
%init(delivery=9);

%titlecsv(prgname=&prgname., version=5);

%put &title1;
%put &title2;
%put &APPENDIX;
%put &endpoint;
%put &outname.;

options missing="";

data indata1;
length group $4;
set adam.adbx;
group="A";
paramn=paramn+100;
if avisitn<=106 then used="The where clause used on the dataset adam.adbx: PPROT1FL=Y and ANL02FL=Y";
else if avisitn<=130 then used="The where clause used on the dataset adam.adbx: PPROT2FL=Y and ANL02FL=Y";
else if avisitn<=160 then used="The where clause used on the dataset adam.adbx: PPROT3FL=Y and ANL02FL=Y";
else if avisitn<=191 then used="The where clause used on the dataset adam.adbx: PPROT4FL=Y and ANL02FL=Y";

if PARAMCD in ("UTXB2CRE", "UPGF2CRE") and avisitn in (100, 105, 130, 160, 190, 191) and ANL02FL="Y";
drop DTYPE ATPT;
run;

data indata2;
length group $4;
set adam.adlb;
group="B1";
paramn=paramn+200;
if avisitn<=106 then used="The where clause used on the dataset adam.adbx: PPROT1FL=Y and ANL01FL=Y";
else if avisitn<=130 then used="The where clause used on the dataset adam.adbx: PPROT2FL=Y and ANL01FL=Y";
else if avisitn<=160 then used="The where clause used on the dataset adam.adbx: PPROT3FL=Y and ANL01FL=Y";
else if avisitn<=191 then used="The where clause used on the dataset adam.adbx: PPROT4FL=Y and ANL01FL=Y";

if paramcd in ("ICAM1") and avisitn in (100, 106, 130, 160, 190, 191) and ANL01FL="Y";
drop DTYPE ATPT;
run;

data indata3;
length group $4;
set adam.adlb;
group="B2";
paramn=paramn+300;
if avisitn<=106 then used="The where clause used on the dataset adam.adbx: PPROT1FL=Y and ANL01FL=Y";
else if avisitn<=130 then used="The where clause used on the dataset adam.adbx: PPROT2FL=Y and ANL01FL=Y";
else if avisitn<=160 then used="The where clause used on the dataset adam.adbx: PPROT3FL=Y and ANL01FL=Y";
else if avisitn<=191 then used="The where clause used on the dataset adam.adbx: PPROT4FL=Y and ANL01FL=Y";

if (paramcd="HBA1C" and avisitn in (100, 190)) or (paramcd in ("LDL", "HDL", "TRIG", "CHOL") and avisitn in (100, 106, 130, 160, 190, 191))
or (paramcd in ("WBC", "NEUT", "EOS", "BASO", "LYM", "MONO") and avisitn in (100, 106, 130, 160, 190, 191)) and ANL01FL="Y";
drop DTYPE ATPT;
run;

data indata4;
length group $4;
set adam.adlb;
group="B3";
paramn=paramn+400;

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if avisitn<=106 then used="The where clause used on the dataset adam.adbx: PPROT1FL=Y and ANL01FL=Y";
else if avisitn<=130 then used="The where clause used on the dataset adam.adbx: PPROT2FL=Y and ANL01FL=Y";
else if avisitn<=160 then used="The where clause used on the dataset adam.adbx: PPROT3FL=Y and ANL01FL=Y";
else if avisitn<=191 then used="The where clause used on the dataset adam.adbx: PPROT4FL=Y and ANL01FL=Y";
if (paramcd in ("CRP", "FIBRINO", "HOMOCY", "GLUC") and avisitn in (100, 130, 160, 190, 191)) or (paramcd="PLAT" and avi
sitn in (100, 106, 130, 160, 190, 191)) and ANL01FL="Y";
drop DTYPE ATPT;
run;

data indata5;
length group $4;
set adam.advs;
group="C";
paramn=paramn+800;
if avisitn<=106 then used="The where clause used on the dataset adam.adbx: PPROT1FL=Y and ANL01FL=Y";
else if avisitn<=130 then used="The where clause used on the dataset adam.adbx: PPROT2FL=Y and ANL01FL=Y";
else if avisitn<=160 then used="The where clause used on the dataset adam.adbx: PPROT3FL=Y and ANL01FL=Y";
else if avisitn<=191 then used="The where clause used on the dataset adam.adbx: PPROT4FL=Y and ANL01FL=Y";

if (PARAMCD in ("SYSBP", "DIABP") and avisitn in (100, 106, 130, 160, 190, 191)) or (paramcd in ("WEIGHT", "WSTCIR") and
avisitn in (98, 106, 191)) and ANL01FL="Y";
drop DTYPE ATPT;
run;

data indata6;
length group $4;
set adam.adxp;
group="D";
paramn=paramn+500;
if avisitn<=106 then used="The where clause used on the dataset adam.adbx: PPROT1FL=Y and ANL01FL=Y";
else if avisitn<=130 then used="The where clause used on the dataset adam.adbx: PPROT2FL=Y and ANL01FL=Y";
else if avisitn<=160 then used="The where clause used on the dataset adam.adbx: PPROT3FL=Y and ANL01FL=Y";
else if avisitn<=191 then used="The where clause used on the dataset adam.adbx: PPROT4FL=Y and ANL01FL=Y";

if paramcd="FEVPCT" and avisitn in (100, 191) and ANL01FL="Y";
drop DTYPE ATPT;
run;

/*
Blood pressure, HbA1c, LDL, HDL, TG, TC, WBC, BASO, EOS, MONO, NEUT, LYM, ,body weight and waist circumference will be a
nalyzed in the regular scale.
8-epi-PGF2a, 11 DTX-B2, sICAM will be analyzed in the logarithmic scale.
Other risk markers will be logarithmically transformed prior to analysis if there is evidence of non-normality by means
of Shapiro-Wilks test using baseline
data from FAS population - if p-val <= 0.05 then analyze in log scale; otherwise, use regular scale.
*/

data anlndata1;
set indata1-indata6;
if paramcd in ("SYSBP", "DIABP", "HBA1C", "LDL", "HDL", "TRIG", "CHOL" "WBC", "NEUT", "EOS", "BASO", "LYM", "MONO", "WEI
GHT", "WSTCIR", "FEVPCT") then method=2;
else if paramcd in ("UTXB2CRE", "UPGF2CRE" "ICAM1") then method=1;
else method=3;
if avisitn=106 then avisitn=105;
if avisitn=191 then avisitn=190;
if avisitn=98 then avisitn=100;

if aval>0 then logaval=log(aval);
if base>0 then logbase=log(base);
run;

proc sort data=anlndata1 out=fmt(keep=paramn param) nodupkey;
by paramn param;
run;

proc sort data=anlndata1 out=check(keep=method paramcd) nodupkey;
by method paramcd;
run;

data indata1 indata2;
set anlndata1;
if method=3 then output indata2;
else output indata1;
run;

data indata2;
set indata2;
drop method;
run;

proc sort data=indata2;
by paramcd;
run;

data base;
set adam.adxp (drop= ABLFL ATPT) adam.adlb(drop= ABLFL ATPT);

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if paramcd in ("CRP", "FIBRINO", "HOMOCY", "GLUC", "PLAT") and avisitn =100 and fasfl="Y";
run;

proc sort data=base;
by paramcd;
run;

ods listing close;
ods output TestsForNormality=TestsForNormality;
proc univariate data=base normal;
by paramcd;
var aval;
run;
ods listing;
ods output close;

data test;
set testsfornormality;
if TEST="Shapiro-Wilk";
run;

data test;
set test;
if PVALUE<=0.05 then method=1;
else method=2;
keep paramcd method;
run;

proc sort data=test;
by paramcd;
run;

data indata2;
merge indata2 test;
by paramcd;
run;

data anldata;
set indata1 indata2;
run;

data anldata;
set anldata;
if aval>0 then logaval=log(aval);
run;

data anldata;
set anldata;
if aval>0 then logaval=log(aval);
run;

data anldata;
set anldata;
if TRTA="THSm2.2" then trtcd=1;
else if TRTA="mCC" then trtcd=2;
else if TRTA="SA" then trtcd=3;
if trtcd>.;
run;

proc sort data=anldata out=check(keep=paramn paramcd param method) nodupkey;
by paramn paramcd param;
run;

proc print data=check;
run;

%macro mainloop(paramn=, outn=, sizen=, ypos=, flg=, where=, method=);

proc sort data=anldata out=param(keep=param) nodupkey;
by param;
where paramn=&paramn.;
run;

%global param_&paramn.;

data param;
set param;
call symput("param_&paramn.", strip(param));
run;

proc sort data=anldata out=adpc;
by trtcd avisitn;
where paramn=&paramn. and (&where.);
run;

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proc means data = adpc noprint;
by trtcd avisitn paramn;
%if &method =1 %then %do;
    var logaval;
%end;
%if &method =2 %then %do;
    var aval;
%end;
    output out=xlab1 n=n mean=mean lclm=lclm uclm=uclm std=std;
run;

data xlab1 ;
set xlab1;
%if &method =1 %then %do;
    Estimate1 = exp(mean); /* Ratio of geometric mean */
    LowerCL   = exp(lclm); /* 95% CI lower bound */
    UpperCL   = exp(uclm); /* 95% CI upper bound */
%end;
%if &method =2 %then %do;
    Estimate1 =mean; /* Ratio of geometric mean */
    LowerCL   = lclm; /* 95% CI lower bound */
    UpperCL   = uclm; /* 95% CI upper bound */
%end;

run;

/* Reshape the data to contain three Y values for */
/* each X for use with the HILOC interpolation. */
data reshape_&paramn._&outn(keep=xvar yvar mean trtcd avisitn Estimate1 LowerCL UpperCL paramn method);
length method 8.;
    set xlab1;
    mean=Estimate1;
    method="&method";
    if avisitn=106 then avisitn=105;
    if avisitn<=106 then xvar=avisitn-100;
    else if avisitn=130 then xvar=10;
    else if avisitn=160 then xvar=15;
    else if avisitn=190 then xvar=20;

    yvar=Estimate1;
    output;

    yvar=LowerCL;
    output;

    yvar=UpperCL;
    output;
run;

proc format;
value visitf
-1=" "
0=" "
6=" "
7=" "
8=" "
11=" "
12=" "
13=" "
14=" "
16=" "
17=" "
18=" "
19=" "
10="30"
15="60"
20="90"
9=" ";
run;

%let annopos=6;
%let xpos=60;
%let yypos=9.5;

data anno3;
length function color $ 8;
retain xsys hsys '3';
ysys="3"; size=0.3;
color="blue"; function='move'; x=30; y=&annopos.; line=1; output;
color="blue"; function='draw'; x=35; y=&annopos.; line=1; output;
color="red"; function='move'; x=50; y=&annopos.; line=3; output;
color="red"; function='draw'; x=55; y=&annopos.; line=3; output;
color="green"; function='move'; x=65; y=&annopos.; line=33; output;
color="green"; function='draw'; x=70; y=&annopos.; line=33; output;

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color="black"; function='move'; x=28; y=&annopos.-2.5; line=1; output;
color="black"; function='draw'; x=77; y=&annopos.-2.5; line=1; output;
color="black"; function='draw'; x=77; y=&annopos.+2; line=1; output;
color="black"; function='draw'; x=28; y=&annopos.+2; line=1; output;
color="black"; function='draw'; x=28; y=&annopos.-2.5; line=1; output;
run;

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```

data anno8;
length function color $ 8;
retain xsys '2';
ysys="3"; hsys="3"; size=0.3;
color="black"; function='move'; x=0; y=28.3+1.2-&yypos.; line=1; output;
color="black"; function='draw'; x=0; y=29+1.05-&yypos.; line=1; output;
color="black"; function='move'; x=1; y=28.3+1.2-&yypos.; line=1; output;
color="black"; function='draw'; x=1; y=29+1.05-&yypos.; line=1; output;
color="black"; function='move'; x=2; y=28.3+1.2-&yypos.; line=1; output;
color="black"; function='draw'; x=2; y=29+1.05-&yypos.; line=1; output;
color="black"; function='move'; x=3; y=28.3+1.2-&yypos.; line=1; output;
color="black"; function='draw'; x=3; y=29+1.05-&yypos.; line=1; output;
color="black"; function='move'; x=4; y=28.3+1.2-&yypos.; line=1; output;
color="black"; function='draw'; x=4; y=29+1.05-&yypos.; line=1; output;
color="black"; function='move'; x=5; y=28.3+1.2-&yypos.; line=1; output;
color="black"; function='draw'; x=5; y=29+1.05-&yypos.; line=1; output;
color="black"; function='move'; x=10; y=28.3+1.2-&yypos.; line=1; output;
color="black"; function='draw'; x=10; y=29+1.05-&yypos.; line=1; output;
color="black"; function='move'; x=15; y=28.3+1.2-&yypos.; line=1; output;
color="black"; function='draw'; x=15; y=29+1.05-&yypos.; line=1; output;
color="black"; function='move'; x=20; y=28.3+1.2-&yypos.; line=1; output;
color="black"; function='draw'; x=20; y=29+1.05-&yypos.; line=1; output;

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```
run;
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```

data anno4;
length function color $8 text style $80;
retain xsys hsys '3';
ysys="3"; position="6";

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color="black"; function='label';
%if &paramn.=321 %then %do; x=2.2; %end;
%else %if &paramn.=405 %then %do; x=2.2; %end;
%else %do; x=3.1; %end;
y=27.9-&yypos.+0.3; text="Baseline"; output;
function='label'; x=36; y=&annopos+0.5; color="black"; text="THSm2.2"; output;
function='label'; x=56; y=&annopos+0.5; color="black"; text="mCC"; output;
function='label'; x=72; y=&annopos+0.5; color="black"; text="SA"; output;
size=2.0; color="blue"; function='SYMBOL'; x=32.5; y=&annopos.; style="marker"; text='Z'; output;
size=2.0; color="red"; function='SYMBOL'; x=52.5; y=&annopos.; style="marker"; text='U'; output;
size=2.0; color="green"; function='SYMBOL'; x=67.5; y=&annopos.; style="marker"; text='C'; output;

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```
run;
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```

data anno5;
set xlab1;
length function color $8 text style $80 size 8;
retain xsys '2';
ysys="2"; hsys="3"; position="6";
y=Estimate1;
if avisitn<=106 then x=avisitn-100;
else if avisitn=130 then x=10;
else if avisitn=160 then x=15;
else if avisitn=190 then x=20;
size=2.0;
if trtcd=1 then do; color="blue"; function='SYMBOL'; style="marker"; text='Z'; output; end;
size=2.0;
if trtcd=2 then do; color="red"; function='SYMBOL'; style="marker"; text='U'; output; end;
size=2.0;
if trtcd=3 then do; color="green"; function='SYMBOL'; style="marker"; text='C'; output; end;

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```
run;
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```

data anno_&paramn._&outn;
set anno3 anno4 anno5 anno8;
run;

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%mend;
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%mainloop(paramn=173, outn=1, size=1000, ypos=95, where=%str((avisitn<=106 and PPR0T1FL="Y") or
(avisitn=130 and APUPER=2 and PPR0T2FL="Y") or (avisitn=160 and APUPER=3 and PPR0T3FL="Y") or (avisitn in (190, 191) and
PPR0T4FL="Y") ), method=1);
%mainloop(paramn=176, outn=1, size=1000, ypos=95, where=%str((avisitn<=106 and PPR0T1FL="Y") or
(avisitn=130 and APUPER=2 and PPR0T2FL="Y") or (avisitn=160 and APUPER=3 and PPR0T3FL="Y") or (avisitn in (190, 191) and
PPR0T4FL="Y") ), method=1);
%mainloop(paramn=226, outn=1, size=0.18, ypos=95, where=%str((avisitn<=106 and PPR0T1FL="Y") or
(avisitn=130 and APUPER=2 and PPR0T2FL="Y") or (avisitn=160 and APUPER=3 and PPR0T3FL="Y") or (avisitn in (190, 191) and
PPR0T4FL="Y") ), method=1);

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%excelloop(paramn=176, pagen= 2);
%excelloop(paramn=226, pagen= 3);
%excelloop(paramn=312, pagen= 4);
%excelloop(paramn=313, pagen= 5);
%excelloop(paramn=321, pagen= 6);
%excelloop(paramn=322, pagen= 7);
%excelloop(paramn=323, pagen= 8);
%excelloop(paramn=404, pagen= 9);
%excelloop(paramn=405, pagen=10);
%excelloop(paramn=407, pagen=11);
%excelloop(paramn=408, pagen=12);
%excelloop(paramn=409, pagen=13);
%excelloop(paramn=411, pagen=14);
%excelloop(paramn=413, pagen=15);
%excelloop(paramn=420, pagen=16);
%excelloop(paramn=424, pagen=17);
%excelloop(paramn=425, pagen=18);
%excelloop(paramn=515, pagen=19);
%*excelloop(paramn=517, pagen=20);
%excelloop(paramn=801, pagen=20);
%excelloop(paramn=802, pagen=21);
%excelloop(paramn=815, pagen=22);
%excelloop(paramn=826, pagen=23);

ods tagsets.ExcelXP close;

data odata.&prgname;
set ototal;
if paramn>;
run;

proc format;
value yfmt
0.1=" "
1=" "
10=" "
100=" "
1000=" "
10000=" "
100000=" ";
run;

%macro call(paramn=, method=, outputn=, hsize=, vsize=, innum=, innum1=, outn=, xlabel=, xmin=, xmax=, ymin=, ymax=, b
y=);

options /*leftmargin=0.2cm topmargin=0.1cm rightmargin=0.2cm bottommargin=1cm*/
nodate nonumber nobyline;
ods results off;

%let startobs = 1;
%let eof = 0;
%let imageCnt = 1;

/*****

* handle graph size -> transform to cm when inches are specified

*****/;

%let vunit=%upcase(%scan(&vsize,-1,' 0123456789. '));
%let hunit=%upcase(%scan(&hsize,-1,' 0123456789. '));
%if &vunit=IN or &vunit=INCH %then %let vsize=%sysevalf(%scan(&vsize,1,%str( icIC))*2.58);
%if &hunit=IN or &hunit=INCH %then %let hsize=%sysevalf(%scan(&hsize,1,%str( icIC))*2.58);
%if &vunit=CM %then %let vsize=%sysevalf(%scan(&vsize,1,%str( icIC))*1);
%if &hunit=CM %then %let hsize=%sysevalf(%scan(&hsize,1,%str( icIC))*1);

ods listing gpath=&opath";
ods graphics on / imageName = "lineplot"
imagefmt = png
border = off
scale = no
reset = index
width = 6 cm
height = 4 cm;
ods escapechar="é";

filename graphout "&opath\&outname._&outputn..png";
goptions reset=all device=png gsfname=graphout ftext="Arial/bold" htext=2.5 hsize=6.25 in vsize=4.9 in;

axis1 offset=(2 pct,2 pct) label=("Visit Day")
width=1 minor=none major=none origin=(, 1.0in) order=0 to &xmax. by 1
;

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%if &method. =1 %then %do;
    axis2          /*length=4.8 in */  label=(angle=90 "&&param_&paramn")
                    width=1 minor=none order=&ymin. to &ymax. by &by.
                    ;

    axis3          /*length=4.8 in */
                    width=1 minor=none order=&ymin. to &ymax. by &by. major=none
                    ;
%end;

%if &method. =2 %then %do;
    axis2          /*length=4.8 in */  label=(angle=90 "&&param_&paramn")
                    width=1 minor=none order=&ymin. to &ymax. by &by.
                    ;

    axis3          /*length=4.8 in */
                    width=1 minor=none /*order=&ymin. to &ymax. by &by.*/ major=none
                    ;
%end;

/* Define the symbol characteristics */
symbol1 interpol=hiloctj color=blue line=1 w=1 ;
symbol2 interpol=hiloctj color=red line=3 w=1 ;
symbol3 interpol=hiloctj color=green line=33 w=1 ;

/* symbol4 interpol=none color=blue w=4 font=marker value=W;
symbol5 interpol=none color=red w=4 font=marker value=P;
symbol6 interpol=none color=green w=4 font=marker value=D;
*/

/* Plot the error bars using the HILOCTJ interpolation */
/* and overlay symbols at the means. */

proc gplot data=reshape_&paramn._&outn;
    plot
        yvar*xvar=trtcd
        /haxis=axis1 vaxis=axis2 anno=anno_&paramn._&outn nolegend;
    format xvar visitf.;
    /* plot
        Estimate1*xvar=trtcd
        /haxis=axis1 vaxis=axis2 nolegend;
    format xvar visitf.;
*/
run;
quit;

proc greplay igout=work.gseg nofs;
delete _all_;
run;
quit;

ods listing close;
ods graphics off;

%mend;

%cal1(paramn=173, method=1, outputn= 1, hsize=4 in, vsize=6 in, innum=1, innum1=5, outn=1, xmin=0, xmax=20, ymin=160,
ymax=280, by= 20);
%cal1(paramn=176, method=1, outputn= 2, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=300,
ymax=700, by=100);
%cal1(paramn=226, method=1, outputn= 3, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=140,
ymax=260, by=20);
%cal1(paramn=312, method=2, outputn= 4, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=60, y
max=180, by=40);
%cal1(paramn=313, method=2, outputn= 5, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=160,
ymax=220, by=20);
%cal1(paramn=321, method=2, outputn= 6, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=4, y
ax=6, by=1);
%cal1(paramn=322, method=2, outputn= 7, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=50, y
max=70, by=5);
%cal1(paramn=323, method=2, outputn= 8, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=80, y
max=140, by=20);
%cal1(paramn=404, method=2, outputn= 9, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=4, ym
ax=8, by=1);
%cal1(paramn=405, method=2, outputn=10, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=2, ym
ax=5, by=1);
%cal1(paramn=407, method=2, outputn=11, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=1, ym
ax=3, by=1);
%cal1(paramn=408, method=1, outputn=12, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=80, y
max=96, by=2);
%cal1(paramn=409, method=2, outputn=13, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=0.2,
ymax=0.4, by=0.1);
%cal1(paramn=411, method=2, outputn=14, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=0, ym
ax=0.3, by=0.1);
%cal1(paramn=413, method=2, outputn=15, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=0, ym
ax=0.07, by=0.01);
%cal1(paramn=420, method=1, outputn=16, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=0, ym
ax=0.4, by=0.1);

```



```

%cal1(paramn=424, method=1, outputn=17, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=8, ym
ax=16, by=2);
%cal1(paramn=425, method=1, outputn=18, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=240,
ymax=320, by=20);
%cal1(paramn=515, method=1, outputn=19, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=200,
ymax=280, by=20);
%*cal1(paramn=517, method=2, outputn=20, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=80,
ymax=100, by=10);
%cal1(paramn=801, method=2, outputn=20, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=90, y
max=120, by=10);
%cal1(paramn=802, method=2, outputn=21, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=50, y
max=80, by=10);
%cal1(paramn=815, method=2, outputn=22, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=50, y
max=70, by=5);
%cal1(paramn=826, method=2, outputn=23, hsize=4 in, vsize=6 in, innum=3, innum1=7, outn=1, xmin=0, xmax=20, ymin=70, y
max=120, by=10);

%macro rtfoutput;
option nobyline nodate nonumber orientation=landscape;

ods listing close;
%trtrtf_fig(pgmname=&outname., pgmid=1, new=0, style=, bookmark=%lowcase(&outname.));
ods escapechar="é";

title;

%let n_plots=23;
%let orient=landscape;

data _rmtext;
format text $12.;
text = 'éR"\par\ "';
%do i = 1 %to &n_plots;
output;
%end;
run;

data _rmtext;
set _rmtext;
pagen=_n_;
run;

%local tblwidth;
%let tblwidth = 6.25;

%do i = 1 %to &n_plots;

proc report data = _rmtext nowd;
column pagen text;
where pagen = &i;
define pagen /order order=internal noprint;
define text / display style(column)=[cellwidth=&tblwidth.in] ' ';
compute text;
*line_count + 1;
* if line_count = &i then do;
call define(_row_, 'STYLE', %str('%')STYLE=[just=center postimage="&opath\&&outname._&i..png"]%str('%'));
* end;
endcomp;

compute before pagen /style=[fontweight=bold fontsize=3.75];
line @1 "&title1 &title2";
endcomp;

compute after pagen /style=[fontsize=1.75];
line @1 "Note: mCC = Conventional menthol cigarettes; SA = Smoking abstinence; THSm2.2 = Tobacco Heating";
line @1 "System 2.2 Menthol.";
line @1 "Note: Baseline is the last assessment prior to first product use in CC/THS 2.2 arms on Day 1 or";
line @1 "last assessment prior to 06:29 AM in SA arm on Day 1.";
line @1 "Baseline is summarized using the baseline data from the PP Set for Period 1.";
line @1 "Geometric mean: ";
line @1 "Prostaglandin F2 Alpha (pg/mg creat), 11-Dehydro-Thromboxane B2 (pg/mg creat), Intercellular Adhesion";
line @1 "Molecule 1 (ng/mL), Glucose (mg/dL), C Reactive Protein (mg/L), Homocysteine (umol/L), Fibrinogen";
line @1 "(mg/dL), Platelets (GI/L)";
line @1 "Arithmetic mean:";
line @1 "Triglycerides (mg/dL), Cholesterol (mg/dL), Hemoglobin A1C (%), HDL Cholesterol (mg/dL), LDL Cholesterol";
line @1 "(mg/dL), Leukocytes (GI/L), Neutrophils (GI/L), Lymphocytes (GI/L), Monocytes (GI/L), Eosinophils (GI/L)";
line @1 "Basophils (GI/L), Systolic Blood Pressure, Diastolic Blood Pressure, Weight, Waist Circumference";
line @1 " ";
line @1 "&APPENDIX.";
line @1 "Study ID: ZRHM-REXA-07-JP";
line @1 "Program: &fprgname..sas Status: &repversion./&fdate. Page &i. of 23";
endcomp;

```

```
run;

%end;

/*
proc datasets nolist;
    delete _rmttext;
quit;
*/
ods rtf close;
ods listing;

%mend;
%rtfoutput;
```