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* Project          : ZRHM-REXA-07-JP
*
* Program name     : t1502042101.sas
*
* Author          : L. Yan
*
* Date created     : 05/20/2015
*
* Purpose         : Table t1502042101.
*
* Revision History :
*
* Date          Author      Ref      Revision (Date in YYYYMMDD format)
*
*****;

%let prgname=T1502042101_ZRHM_REXA_07_JP_V1;
options mprint;

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

%titlecsv(prgname=&prgname., version=3);

%put &title1;
%put &title2;
%put &APPENDIX;
%put &endpoint;
%put &outname.;
%let decimal=0;

options missing="";
%macro cal_summary_pvalue(wher=, outnum=, var=, in=, pflg=, decimal=0);

proc sort data=&in. out=anadt_&outnum.;
by usubjid;
where &wher. ;
run;

proc sort data=anadt_&outnum.;
by trtcd;
run;

proc means data = anadt_&outnum. noprint;
by trtcd;
var &var.;
output out=xlab_&outnum. n=n mean=mean median=med std=sd min=min max=max q1=q1 q3=q3 lclm=lclm uclm=uclm;
run;

data xlab_&outnum.;
set xlab_&outnum.;
n1 = trim(left(compress(put(n, 8.))));
%if &decimal=1 %then %do;
if sd > . then mean1 = (trim(left(compress(put(mean, 8.%eval(&decimal+1))))))||' ('||trim(left(compress(put(ceil(sd*1000)/1000, 8.%eval(&decimal+2))))))||')';
else mean1 = (trim(left(compress(put(mean, 8.%eval(&decimal+1))))))||' (NA)';
%end;
%if &decimal=0 %then %do;
if sd > . then mean1 = (trim(left(compress(put(mean, 8.%eval(&decimal+1))))))||' ('||trim(left(compress(put(ceil(sd*100)/100, 8.%eval(&decimal+2))))))||')';
else mean1 = (trim(left(compress(put(mean, 8.%eval(&decimal+1))))))||' (NA)';
%end;

ci1=trim(left(compress(put(floor(lclm*100)/100, 8.%eval(&decimal+1))))||', '||trim(left(compress(put(ceil(uclm*100)/100, 8.%eval(&decimal+1))))));
median1 = trim(left(compress(put(med, 8.%eval(&decimal+1)))));
q1q3 = trim(left(compress(put(q1, 8.%eval(&decimal+1))))||', '||trim(left(compress(put(q3, 8.%eval(&decimal+1))))));
;
min1 = trim(left(compress(put(min, 8.%eval(&decimal+0))))||', '||trim(left(compress(put(max, 8.%eval(&decimal+0))))));
run;

proc means data = anadt_&outnum. noprint;
by trtcd;
var logaval;
output out=xlab1_&outnum. n=n mean=mean lclm=lclm uclm=uclm std=std;
run;

data xlab1_&outnum. ;
set xlab1_&outnum. ;
Estimate1 = exp(mean); /* Ratio of geometric mean */
LowerCL = exp(lclm); /* 95% CI lower bound */
UpperCL = exp(uclm); /* 95% CI upper bound */

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    CVperc=100*sqrt(exp(std**2)-1);
run;

data xlab1_&outnum.;
length geomean geoci $100;
set xlab1_&outnum.;
geomean=strip(put(estimate1, 8.2))||" ("||strip(put(ceil(CVperc*100)/100, 8.2)) ||")";
geoci=strip(put(floor(LowerCL*100)/100, 8.2))||", "||strip(put(ceil(UpperCL*100)/100, 8.2));
keep trtcd geomean geoci;
run;

proc sort data=xlab1_&outnum.;
by trtcd;
run;

proc sort data=xlab_&outnum.;
by trtcd;
run;

data xlab_&outnum.;
merge xlab_&outnum.(in=a) xlab1_&outnum.;
by trtcd;
run;

proc transpose data = xlab_&outnum. out=xlab_1_&outnum.;
id trtcd;
var n1 geomean geoci MEDIAN1 Q1Q3 MIN1 MEAN1 ci1;
run;

data rep_&outnum.;
length _name_ _1 _2 ord1 $100;
set xlab_1_&outnum.;
ord1="&outnum";
ordnum=input(ord1, best.);

%if &outnum = 3 %then %do;

if upcase(_name_)="N1" then do; _name_="n"; sord=0; end;

if upcase(_name_)="MEDIAN1" then do; _name_="Median"; sord=5; end;
if upcase(_name_)="Q1Q3" then do; _name_="Q25, Q75"; sord=6; end;
if upcase(_name_)="MIN1" then do; _name_="Min, Max"; sord=7; end;

%end;

%else %if &outnum = 6 %then %do;

if upcase(_name_)="N1" then do; _name_="n"; sord=0; end;

if upcase(_name_)="MEDIAN1" then do; _name_="Median"; sord=5; end;
if upcase(_name_)="Q1Q3" then do; _name_="Q25, Q75"; sord=6; end;
if upcase(_name_)="MIN1" then do; _name_="Min, Max"; sord=7; end;

%end;
%else %do;

if upcase(_name_)="N1" then do; _name_="n"; sord=0; end;
if upcase(_name_)="GEOMEAN" then do; _name_="Geometric Mean (CV%)"; sord=1; end;
if upcase(_name_)="GEOCI" then do; _name_="95% CI of Geometric Mean"; sord=2; end;

if upcase(_name_)="MEAN1" then do; _name_="Mean (SD)"; sord=8; end;
if upcase(_name_)="CI1" then do; _name_="95% CI of Mean"; sord=9; end;
if upcase(_name_)="MEDIAN1" then do; _name_="Median"; sord=5; end;
if upcase(_name_)="Q1Q3" then do; _name_="Q25, Q75"; sord=6; end;
if upcase(_name_)="MIN1" then do; _name_="Min, Max"; sord=7; end;

%end;

run;

data rep;
set rep rep_&outnum.;
run;

%mend;

%macro mainloop(flgl, outn=);

proc sort data=adam.adsl out=trt;
by usbjid;
where &flgl.="Y";
run;

data trt;

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set trt;
if TRT01A="THSm2.2" then trtcd=1;
else if TRT01A="mCC" then trtcd=2;
else if TRT01A="SA" then trtcd=3;
run;

data adpp1;
set adam.adpp;
if AVISITn>=101 and trta in ("mCC" "THSm2.2") and aval>. and &flg.="Y" and anl01fl="Y";
run;

data adpp1;
set adpp1;
decimal=compress(scan(avalc, 2, "."));
if decimal ne "" then decin=length(decimal);
else decin=0;
run;

proc sort data=adpp1 out=check1;
by paramn decin;
run;

data check1;
set check1;
by paramn decin;
if last.paramn;
keep paramn decin;
run;

proc sort data=adpp1 out=check(keep=paramn avisitn avisit param paramcd) nodupkey;
by paramn avisitn avisit;
run;

data check;
merge check(in=a) check1;
by paramn;
if a;
run;

data adpp1;
set adpp1;
if aval>0 then logaval=log(aval);
run;

/*
proc sort data=adpp1 out=check(keep=paramn avisitn avisit) nodupkey;
by paramn avisitn avisit;
run;
*/
data trt_1;
set trt;
run;

data adpp1;
set adpp1;
if TRTA="THSm2.2" then trtcd=1;
else if TRTA="mCC" then trtcd=2;
else if TRTA="SA" then trtcd=3;
run;

data check;
set check;
ord=_n_;
run;

%*cal_summary_pvalue(wher=1, outnum=1, var=aval, in=adpp1, pflg=1);

data rep;
run;

data _null_;
set check;
call execute ('%cal_summary_pvalue(wher=%str(avisitn='||avisitn||' and paramn='||paramn||' ), outnum='||ord||', var
=aval, in=adpp1, decimal=1);');
run;

data frep;
set rep;
ord=ORDNUM;
run;

data frep;
merge frep(in=a) check;

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by ord;
if a;
if avisitn>.;
run;

proc sort data=adpp1 out=sub(keep=trtcd usubjid) nodupkey;
by trtcd usubjid;
run;

proc sort data=trt_1 nodupkey;
by trtcd usubjid;
run;
/*
data trt_1;
merge trt_1(in=a) sub(in=b);
by trtcd usubjid;
if a and b;
run;
*/
proc freq data = trt_1 noprint;
tables trtcd/ out= denom;
run;

%global trt1 trt2;

data _null_;
set denom end=eof;

retain total 0;

total = total+count;

if trtcd= 1 then do;
call symput('trt1', trim(left(put(count,8)))));
end;
if trtcd= 2 then do;
call symput('trt2', trim(left(put(count,8)))));
end;
if trtcd= 3 then do;
call symput('trt3', trim(left(put(count,8)))));
end;

run;

%put trt1=&trt1 trt2=&trt2 trt3=&trt3;

%macro cal_part_main();

data frep;
set frep;

%do i = 1 %to 100;
if (&i-1)*3<ordnum<=&i*3 then pagen=&i;
%end;

run;

%mend;

data frep;
set frep;
if sord >.;
run;

%cal_part_main();
data frep&outn.;
set frep;
space=" ";
if paramn<=3 then groupid=1;
else groupid=2;
run;

%mend;

%mainloop(flag=PPROT1FL, outn=1);
%*mainloop(flag=PPROT2FL, outn=2);
%*mainloop(flag=PPROT3FL, outn=3);
%*mainloop(flag=PPROT4FL, outn=4);

data odata.&prgname.;
set frep1 (in=a) /*frep2 (in=b) frep3 (in=c) frep4 (in=d)*/;

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if a then group="PPROT1FL";
*if b then group="PPROT2FL";
*if c then group="PPROT3FL";
*if d then group="PPROT4FL";
run;

proc format;
value grp
1   ="Average Conc (ng/mL)"
2   ="Max Conc (ng/mL)"
3   ="Time of C^{sub MAX} (h)"
4   ="Average Conc (ng/mL)"
5   ="Max Conc (ng/mL)"
6   ="Time of C^{sub MAX} (h)"
;
value grpf
1="Parameter: Nicotine (ng/mL)"
2="Parameter: Cotinine (ng/mL)";
run;

proc sort data=frep1;
by pagen;
run;

%global totalpage;

data _null_;
set frep1 end=eof;

if eof then do;
call symput('totalpage', trim(left(put(pagen,8)))));
end;

run;

%put totalpage=&totalpage;

%**title(prgname1=&prgname.);

%trtrtfg(pgmname=&outname., pgmid=1, new=0, style=, bookmark=%lowercase(&outname.));

%macro reppart;

%do i = 1 %to &totalpage;

proc report data=frep1 headskip headline spacing=4 nowd split='~' style=[outputwidth=100%] style(header column)=[protec
tspecialchars=off];
where pagen =&i.;
column pagen groupid paramn sord _name_ _1 space _2;
define pagen /order order=internal noprint;
define groupid /order order=internal noprint;
define paramn /order "Variable" format=grp. flow style(column)=[cellwidth=10% just=l];
define sord /order order=internal noprint;

define _name_ /display "Statistic" flow style(column)=[cellwidth=15% just=l];
define _1 /display "THSm2.2~(N=&trt1.)" flow style(column)=[cellwidth=10% just=c];
define space /display " " flow style(column)=[cellwidth=0.5% just=c];

define _2 /display "mCC~(N=&trt2.)" flow style(column)=[cellwidth=10% just=c];
/*
COMPUTE before groupid ;
LINE @1 groupid grpf.;
ENDCOMP;
*/
COMPUTE after paramn ;
LINE @1 "";
ENDCOMP;

compute before pagen;
line @1 "";
endcomp;

compute before _page_ /style=[fontweight=bold fontsize=3.75];
line @1 "&title1 &title2";
line @1 " ";
LINE @1 groupid grpf.;

line @1 "^R/RTF'\brdrb\brdrs\brdrw30\brsp20\b ' ";
endcomp;

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compute after _page_/style=[fontsize=1.75];
line @1 "Note: mCC = Menthol conventional cigarettes; THSm2.2 = Tobacco Heating System 2.2 Menthol.";
line @1 " ";
line @1 "&APPENDIX.";
line @1 "Study ID:ZRHM-REXA-07-JP          Program: &fprgname..sas          Status: &repversion./&fdate.          Page: &i.
of &totalpage";
endcomp;

break after pagen/page;

run;

%end;

%mend;
%reppart;

ods listing;
ods rtf close;
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