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* Project : ZRHM-REXA-07-JP

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* Program name : t150204010102_ZRHM-REXA-07_V1.sas

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* Author : M. SUN

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* Date created : 06/08/2015

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* Purpose : Table 15.2.4.1.1.2 Descriptive Statistics of Blood COHb (%) by Cigarette Consumption

◆ PP Set

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* Revision History :

*

* Date Author Ref Revision (Date in YYYYMMDD format)

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*****,

%let prgname=T150204010102_ZRHM_REXA_07_JP_V1;

options mprint;

ods escapechar='^';

options sasautos=("W:\pmp07\macros" sasautos) notes;

%init(delivery=9);

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

```
%put &endpoint;
```

```
options missing="";
```

```
*libname adam 'W:\pmp07\Data\ADAM' access=readonly;
```

```
%macro t_desc_ms_2(par=,pop=,period=,chg=,sec=,dec=1);
```

```
%let dec1=%eval(&dec+1);
```

```
%let dec2=%eval(&dec+2);
```

```
proc sort data=adam.adbx(keep=usubjid paramcd param APUPER avisitn avisit ATPTN ATPT aval &chg  
ablfl BLOQFL AULQFL anl02fl) out=_adbx;
```

```
where paramcd in ("&par") and anl02fl='Y';
```

```
by usubjid;
```

```
run;
```

```
%do i=1 %to 4; /* for 4 period*/
```

```
data _pop1 _pop2 _pop3 _pop4 _pop5 _pop6 _pop7 _pop8;
```

```
set adam.adsl;
```

```
if %if &pop=fas %then &pop.fl; %else &pop&i.fl; ='Y';
```

```
if trt01p='THSm2.2' and ucpdgr1='10-19 cig/day' then output _pop1;
```

```
else if trt01p='THSm2.2' and ucpdgr1='>19 cig/day' then output _pop2;
```

```

else if trt01p='mCC' and ucpdgr1='10-19 cig/day' then output _pop3;
else if trt01p='mCC' and ucpdgr1='>19 cig/day' then output _pop4;
else if trt01p='SA' and ucpdgr1='10-19 cig/day' then output _pop5;
else if trt01p='SA' and ucpdgr1='>19 cig/day' then output _pop6;
if ucpdgr1='10-19 cig/day' then output _pop7;
else if ucpdgr1='>19 cig/day' then output _pop8;

keep usubjid;

run;

```

```

data _adbx&i;

set _adbx;

if _n_=1 then call symputx("para",param);

if aval ne 0 then logaval=log(AVAL);

if APUPER=&i then output;

if ablfl='Y' then do;

    APUPER=0;

    output;

end;

run;

```

```

proc sort data=_adbx&i;

by usubjid APUPER avisitn atptn;

run;

```

```

%do j=1 %to 8; /* for 8 groups, including total*/

```

```
%global totn&i&j;  
data _null_;  
  set _pop&j end=eof;  
  if eof then call symputx("totn&i&j",_n_);  
run;
```

```
%let canotlog=0;  
%put &canotlog;  
data _data&j;  
  merge _pop&j(in=x) _adbx&i(in=y);  
  by usubjid;  
  if x;  
  length atime $80;  
  if apuper=0 then atime='Baseline';  
  else if avisitn ne 105 then atime=propcase(avisit);  
  else atime=propcase(atpt);  
  
  if aval=0 then call symputx('canotlog',1);  
run;  
%put &canotlog;  
proc sort data=_data&j;  
  by apuper avisitn atptn atime;  
run;
```

```

proc means data = _data&j noprint;

  where aval>.;

  by apuper avisitn atptn atime;

  var aval;

  output out=temp&j n=n mean=mean std=std median=median min=min max=max q1=q1 q3=q3
  lclm=lclm uclm=uclm;

run;

```

```

proc means data = _data&j noprint;

  where logaval>.;

  by apuper avisitn atptn atime;

  var logaval;

  output out=templog&j mean=logmean std=logstd lclm=loglclm uclm=loguclm;

run;

```

```

proc freq data=_data&j noprint;

tables apuper*avisitn*atptn*atime/out=tempBLO&j(rename=(count=blcount));

where BLOQFL='Y';

run;

```

```

proc freq data=_data&j noprint;

tables apuper*avisitn*atptn*atime/out=tempaual&j(rename=(count=auccount));

where AULQFL='Y';

run;

```

```

data _res&j.1;

```

```

merge temp&j templog&j tempBLO&j(where=(blcount>0)) tempaul&j(where=(auccount>0));

by apuper avisitn atptn atime;

length col&j.1 $20 stat $40;

dord=1;

ord=1; stat='n'; col&j.1 = put(n, 8.); output;

if 0<n<&&totn&i&j then do;

    ord=2; stat='Missing, n (%)'; col&j.1 = put(&&totn&i&j-n, 8.) || ' (' || strip(put((&&totn&i&j-
n)/&&totn&i&j*100, 5.1)) || ')'; output;

end;

ord=3; stat='BLOQ, n (%)';

if blcount>0 then col&j.1 = put(blcount, 8.) || ' (' || strip(put(blcount/&&totn&i&j*100, 5.1)) || ')';

else col&j.1=""; output;

if auccount>0 then do;

    ord=4; stat='ALQ, n (%)'; col&j.1 = put(auccount, 8.) || ' (' || strip(put(auccount/&&totn&i&j*100,
5.1)) || ')'; output;

end;


geomean = exp(logmean); /* Ratio of geometric mean */

geoLCL = exp(loglclm); /* 95% CI lower bound */

geoUCL = exp(loguclm); /* 95% CI upper bound */

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


ord=5; stat='Geometric Mean (CV%)'; col&j.1=strip(put(round(geomean,1E-&dec1), 8.&dec1)) || "
(" || strip(put(round(ceil(CVperc*100)/100,0.01), 8.2)) || "%)"; output;

ord=6; stat='95% CI of Geometric Mean'; col&j.1=strip(put(round(floor(geoLCL*1E&dec1)/1E&dec1,1E-
&dec1), 8.&dec1)) || ", " || strip(put(round(ceil(geoUCL*1E&dec1)/1E&dec1,1E-&dec1), 8.&dec1));
output;

```

```

ord=7; stat='Median'; col&j.1 =put(round(median,1E-&dec1), 8.&dec1); output;

ord=8; stat='Q25, Q75'; col&j.1 =strip(put(round(q1,1E-&dec1),8.&dec1))||',
'| |strip(put(round(q3,1E-&dec1), 8.&dec1)); output;

ord=9; stat='Min, Max'; col&j.1 = strip(put(round(min,1E-&dec), 8.&dec))||',
'| |strip(put(round(max,1E-&dec), 8.&dec)); output;

ord=10; stat='Mean (SD)';

if std > . then col&j.1 = strip(put(round(mean,1E-&dec1), 8.&dec1))||'
('| |strip(put(round(ceil(std*1E&dec2)/1E&dec2,1E-&dec2), 8.&dec2))||')';

else col&j.1 = strip(put(round(mean,1E-&dec1), 8.&dec1))||' (NA)'; output;

ord=11; stat='95% CI of Mean';

col&j.1 =strip(put(round(floor(lclm*1E&dec1)/1E&dec1,1E-&dec1), 8.&dec1))||',
'| |strip(put(round(ceil(uclm*1E&dec1)/1E&dec1,1E-&dec1), 8.&dec1)); output;

run;

```

```

/***** change*****/

```

```

proc means data = _data&j noprint;

where &chg>. and apuper>0;

by apuper avisitn atptn atime;

var &chg;

output out=tempc&j n=n mean=mean std=std median=median min=min max=max q1=q1 q3=q3
lclm=lclm uclm=uclm;

run;

data _res&j.2;

```

```

set tempc&j;

by apuper avisitn atptn atime;

length col&j.1 $20 stat $40;

dord=2;

ord=1; stat='n'; col&j.1 = put(n, 8.); output;

/*

if 0<n<&&totn&i&j then do;

    ord=2; stat='Missing, n (%)'; col&j.1 = put(&&totn&i&j-n, 8.)||'('||strip(put((&&totn&i&j-
n)/&&totn&i&j*100, 5.1))||')'; output;

end;

*/

ord=7; stat='Median'; col&j.1 =put(round(median,1E-&dec1), 8.&dec1); output;

ord=8; stat='Q25, Q75'; col&j.1 =strip(put(round(q1,1E-&dec1),8.&dec1))||',
'|strip(put(round(q3,1E-&dec1), 8.&dec1)); output;

ord=9; stat='Min, Max'; col&j.1 = strip(put(round(min,1E-&dec), 8.&dec))||',
'|strip(put(round(max,1E-&dec), 8.&dec)); output;

ord=10; stat='Mean (SD)';

if std > . then col&j.1 = strip(put(round(mean,1E-&dec1), 8.&dec1))||'
('||strip(put(round(ceil(std*1E&dec2)/1E&dec2,1E-&dec2), 8.&dec2))||')';

else col&j.1 = strip(put(round(mean,1E-&dec1), 8.&dec1))||' (NA)'; output;

ord=11; stat='95% CI of Mean';

col&j.1 =strip(put(round(floor(lclm*1E&dec1)/1E&dec1,1E-&dec1), 8.&dec1))||',
'|strip(put(round(ceil(uclm*1E&dec1)/1E&dec1,1E-&dec1), 8.&dec1)); output;

keep apuper stat avisitn atptn atime ord dord col&j.1;

run;

```



```
%end;
```

```
data _res&i;
```

```
merge _res11 _res21 _res31 _res41 _res51 _res61
```

```
    _res12 _res22 _res32 _res42 _res52 _res62;
```

```
by apuper avisitn atptn atime dord ord;
```

```
period=&i;
```

```
run;
```

```
%end;
```

```
data &par;
```

```
set _res1-_res4;
```

```
by period apuper avisitn atptn dord atime ord;
```

```
run;
```

```
data &par;
```

```
set &par;
```

```
by period apuper avisitn atptn dord atime ord;
```

```
length para $100;
```

```
para="&para";
```

```
sec=&sec;
```

```
lagcol11=lag(col11);
```

```
lagcol21=lag(col21);
```

```
lagcol31=lag(col31);
```

```
lagcol41=lag(col41);
```

```
lagcol51=lag(col51);
```

```
lagcol61=lag(col61);
```

```
array cols[6] col11 col21 col31 col41 col51 col61;
```

```
array lagcols[6] lagcol11 lagcol21 lagcol31 lagcol41 lagcol51 lagcol61;
```

```
if ord=2 then do i=1 to 6;
```

```
    if cols[i]=" and lagcols[i]>" then cols[i]='0';
```

```
end;
```

```
keep sec period apuper avisitn atptn atime dord ord stat para col;;
```

```
run;
```

```
data &par;
```

```
set &par;
```

```
by period apuper avisitn atptn dord atime ord;
```

```
length para $100;
```

```
para="&para";
```

```
sec=&sec;
```

```
lagcol11=lag(col11);
```

```
lagcol21=lag(col21);
```

```
lagcol31=lag(col31);
```

```
lagcol41=lag(col41);
```

```
lagcol51=lag(col51);
```

```
lagcol61=lag(col61);
```

```
array cols[6] col11 col21 col31 col41 col51 col61;
```

```
array lagcols[6] lagcol11 lagcol21 lagcol31 lagcol41 lagcol51 lagcol61;
```

```
if ord=3 and dord=1 then do i=1 to 6;
```

```
    if cols[i]=" and lagcols[i]>" then cols[i]='0';
```

```
end;
```

```
keep sec period apuper avisitn atptn atime dord ord stat para col;;
```

```
run;
```

```
proc datasets library=work memtype=data nolist;
```

```
delete _: temp;;
```

```
run;quit;
```

```
%mend;
```

```
%t_desc_ms_2(par=CARBXHGB,pop=pprot,period=%str(1,2,3,4),chg=PCHG,sec=1);
```

```
data CARBXHGB;
```

```
set CARBXHGB;
```

```
by sec period apuper avisitn atptn dord ;
```

```
output;
```

```
if first.dord then do;
```

```
ord=-99;

array cols stat col;;

do over cols;

    cols="";

end;

output;

end;

run;
```

```
proc sort data=CARBXHGB;

    by sec period apuper avisitn atptn dord ord;

run;
```

```
%macro doreport;

data final;

    set CARBXHGB;

    by sec period apuper avisitn atptn dord ;

    /*

    if first.atptn then ctpg+1;

    if _n_=1 then pagen=1;

    if ctpg>2 or (first.period and _n_ ne 1) then do;

        pagen+1;

        ctpg=1;

    end;

    */
```

```

if first.dord then pagen+1;

if atime ne 'Baseline' and dord=2 then atime='% Change from baseline to '|strip(atime);

run;

data final;

set final end=eof;

by pagen;

if eof then call symputx("totalpage",pagen);

run;

data odata.&prgname.;

retain pagen para apuper avisitn atptn atime dord ord stat col11 col21 col31 col41 col51 col61;

set final;

run;

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

%do i=1 %to &totalpage;

data final&i;

set final;

where pagen=&i;

call symputx("period",period);

run;

```

title; footnote;

/*

title1 bold j=l "&title1 &title2";

title2 " ";

title3 j=l h=9pt "Product Use Time Period: Period &period";

footnote1 bold h=12pt

"

_____";

footnote2 j=l h=9pt "Note: mCC = Menthol conventional cigarettes; SA = Smoking abstinence; THSm2.2 = Tobacco Heating System 2.2 Menthol.";

footnote3 j=l h=9pt "Note: * % change from baseline, where baseline is defined as the last assessment prior to first randomized product use "

"in mCC / THS 2.2 Menthol arms or the last assessment prior to 10 AM on Day 1 in the SA arm.";

footnote4 j=l h=9pt " ";

footnote5 h=9pt j=l "&APPENDIX.";

footnote6 h=9pt j=l "Study ID:ZRHM-REXA-07-JP Program: &prgname..sas Status:
&repversion./&fdate. Page: &i. of &totalpage";

*/

proc report data=final&i headskip headline nowd split='~' style=[outputwidth=100%] style(header
column)=[protectspecialchars=off];

column pagen apuper avisitn atptn dord atime ord stat ("^R/RTF"\brdrb\brdrs ' THSm2.2" col11 col21)
("^R/RTF"\brdrb\brdrs ' mCC" col31 col41) ("^R/RTF"\brdrb\brdrs ' SA" col51 col61);

define pagen /order order=internal noprint;

define apuper /order order=internal noprint;

```

define avisitn /order order=internal noprint;

define atptn /order order=internal noprint;

define dord /order order=internal noprint;

define atime /order "Timepoint" style(column)=[cellwidth=11% just=l] style(header)=[just=l];

define ord /order order=internal noprint;

define stat /display "Statistic" style(column)=[cellwidth=17% just=l ] style(header)=[just=l];

define col11 /display "10-19~cig/day~(N=&&totn&period.1)" style(column)=[cellwidth=9% just=c ];

define col21 /display ">19~cig/day~(N=&&totn&period.2)" style(column)=[cellwidth=9% just=c ];

define col31 /display "10-19~cig/day~(N=&&totn&period.3)" style(column)=[cellwidth=9% just=c ];

define col41 /display ">19~cig/day~(N=&&totn&period.4)" style(column)=[cellwidth=9% just=c ];

define col51 /display "10-19~cig/day~(N=&&totn&period.5)" style(column)=[cellwidth=9% just=c ];

define col61 /display ">19~cig/day~(N=&&totn&period.6)" style(column)=[cellwidth=9% just=c ];

```

COMPUTE before pagen;

LINE @1 " ";

ENDCOMP;

COMPUTE after dord;

LINE @1 "";

ENDCOMP;

compute before _page_ /style=[fontweight=bold fontsize=3.75];

line @1 "&title1 &title2";

line @1 " ";

line @1 "Product Use Time Period: Period &period";

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

```
endcomp;
```

```
compute after _page_/style=[fontsize=1.75];
```

```
line @1 "Note: mCC = Menthol conventional cigarettes; SA = Smoking abstinence; THSm2.2 = Tobacco Heating System 2.2 Menthol.";
```

```
line @1 "Note: * % change from baseline, where baseline is defined as the last assessment prior to first randomized product use "
```

```
"in mCC / THS 2.2 Menthol arms or the last assessment prior to 10 AM on Day 1 in the SA arm.";
```

```
line @1 " ";
```

```
line @1 "&APPENDIX.";
```

```
line @1 "Study ID:ZRHM-REXA-07-JP      Program: &fprgname..sas      Status: &repversion./&fdate.  
Page: &i. of &totalpage";
```

```
endcomp;
```

```
run;
```

```
%end;
```

```
ods listing;
```

```
ods rtf close;
```

```
%mend;
```

```
%doreport;
```