

/*=====*

| Covance Study Number : COV- 106331 |

| Client Protocol ID : ZRHM-REXA-07-JP |

| Program Name : t_anlrisk.sas |

| Purpose : Table Analysis of risk markers |

| Input Data : ADBX ADSL |

| Output Data : T_15_02_04_25_01 |

| |

| Macros Called : |

| |

| Originally Performed by : Seroan Zheng |

| Date/Time billed : 05May2015 |

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| Modification History |

| |

| Programmer : Serona Zheng |

| Date : 28May2015 |

| Reason for Change : Add parameter BASO,EOS,MONO,NEUT,LYM |

| |

+=====*/

options noquotelenmax symbolgen;

%macro t_anlrisk(t_name=,t_pop1=,t_pop2=,t_pop3=,t_pop4=,t_title=);

%let pgname=t_anlrisk.sas;

```
%let table=&tflout.;
```

```
%let tflno=&t_name;
```

```
%let TFL_Part=%scan(&_SASPROGRAMFILE,-3,%str(/));
```

```
data _null_;
```

```
    tmp="&TFL_Part";
```

```
        if tmp not in ("dev" "qc") then call symput("TFL_Part", "prod");
```

```
        call symput('TFLpath', compress("&_SASPROGRAMFILE", ""));
```

```
run;
```

```
***Get data from ADSL;
```

```
/*proc sort data=adam.adsl out=adsl; where pprot1fl = 'Y' or pprot4fl = 'Y';by usubjid;run;*/
```

```
***Get data from ADBX;
```

```
proc sort data=adam.adbx out=adbx(keep=usubjid ppro: aval base chg ablfl anl: avisit avisitn par: trt: sexc ucpdgr1);
```

```
    where ((&t_pop1 = 'Y' and avisitn = 105) or (&t_pop2 = 'Y' and avisitn = 130) or (&t_pop3 = 'Y' and avisitn = 160) or (&t_pop4 = 'Y' and avisitn in (190 191)))
```

```
        and anl02fl = 'Y' and upcase(parcat2) = 'RISK MARKERS' and paramcd in ('UPGF2CRE' 'UTXB2CRE');
```

```
        by usubjid paramn param;
```

```
run;
```

```
***Get data from ADLB;
```

```
proc sort data=adam.adlb out=adlb(keep=usubjid ppro: aval base chg ablfl anl: avisit avisitn par: trt: sexc ucpdgr1);
```

```
    where anl01fl = 'Y' and upcase(parcat3) = 'RISK MARKERS' and
```

```
((paramcd in ('HOMOCY' 'CRP' 'GLUC' 'FIBRINO' 'HDL' 'LDL' 'CHOL' 'TRIG') and ((&t_pop2 = 'Y' and avisitn = 130) or (&t_pop3 = 'Y' and avisitn = 160) or (&t_pop4 = 'Y' and avisitn in (190 191))))
```

```
or (paramcd in ('HBA1C' 'APOA1' 'APOB') and avisitn in (191 190) and &t_pop4 = 'Y')
```

```
or (paramcd in ('ICAM1' 'WBC' 'PLAT' 'BASO' 'EOS' 'MONO' 'NEUT' 'LYM') and ((&t_pop1 = 'Y' and avisitn = 106) or (&t_pop2 = 'Y' and avisitn = 130) or (&t_pop3 = 'Y' and avisitn = 160) or (&t_pop4 = 'Y' and avisitn in (190 191)))));
```

```
by usubjid paramn param;
```

```
run;
```

```
***Get data from ADVS;
```

```
proc sort data=adam.advs out=advs(keep=usubjid ppro: aval base chg ablfl anl: avisit avisitn par: trt: sexc ucpdgr1 avalu);
```

```
where anl01fl = 'Y' and upcase(parcat1) = 'RISK MARKERS'
```

```
and ((paramcd in ('DIABP' 'SYSBP') and ((&t_pop1 = 'Y' and avisitn = 106) or (&t_pop2 = 'Y' and avisitn = 130) or (&t_pop3 = 'Y' and avisitn = 160) or (&t_pop4 = 'Y' and avisitn in (190 191)))) or (paramcd in ('WEIGHT' 'WSTCIR') and avisitn in (191 190) and &t_pop4 = 'Y'));
```

```
by usubjid paramn param;
```

```
run;
```

```
***Get baseline data;
```

```
proc sort data=adam.adbx out=adbx_b(keep=usubjid ppro: aval base chg ablfl anl: avisit avisitn par: trt: sexc ucpdgr1);
```

```
where &t_pop1 = 'Y' and upcase(parcat2) = 'RISK MARKERS' and (
```

```
(avisitn = 100 and paramcd in ('UTXB2CRE' 'UPGF2CRE')));
```

```
by usubjid paramn param;
```

```
run;
```

```
proc sort data=adam.adlb out=adlb_b(keep=usubjid ppro: aval base chg ablfl anl: avisit avisitn par: trt: sexc ucpdgr1);
```

```
where upcase(parcat3) = 'RISK MARKERS' and (&t_pop1 = 'Y' and avisitn = 100);
```

```

        by usubjid paramn param;

run;

proc sort data=adam.advs out=advs_b(keep=usubjid ppro: aval base chg ablf1 anl: avisit avisitn par: trt:
sex: ucpdgr1 avalu);

    where upcase(parcat1) = 'RISK MARKERS' and

    ((&t_pop1 = 'Y' and avisitn = 100) or

    (paramcd in ('WEIGHT' 'WSTCIR') and &t_pop1 = 'Y' and avisitn = 98));

    by usubjid paramn param;

run;

data adbx;

    set adbx adbx_b;

    by usubjid paramn;

run;

data adlb;

    set adlb adlb_b;

    by usubjid paramn;

run;

data advs;

    set advs advs_b;

    by usubjid paramn;

    param = strip(param)||' ('||strip(avalu)||')';

```

```

data anl_all;

    length param $100;

    set adlb(drop=parcat3 parcat1 parcat2 rename=(param=param1) in=a) adbx(drop= parcat2
parcat1 rename=(param=param2) in=b) advs(drop= parcat1 rename=(param=param3) in=c);

    by usbjid paramn;

    if a then do;

        param = param1;

        paramn = paramn+2000;

    end;

    if b then do;

        param = param2;

        paramn = paramn + 3000;

    end;

    if c then do;

        param = param3;

        paramn = paramn + 1000;

    end;

    avisit = propcase(avisit);

run;

```

***Get decimal length;

```

data temp;

    set anl_all;

    declen=lengthn(scan(strip(put(aval, best.)),2,"."));

run;

```

```
proc sql;

  create table dectemp

  as select distinct paramcd, max(declen) as declen

  from temp

  group by paramcd;

quit;
```

***Calculate LOG;

```
data anl_all_log anl_all_nlog anl_all_t missing;

  set anl_all;

  if paramcd in ('UGF2CRE4' 'UPGF2CRE' 'UTXB2CRE' 'UXB2CRE4' 'ICAM1') then do;

    if aval not in (.,0) then do;

      logaval=log(aval);

      logbase=log(base);

      output anl_all_log;

    end;

    else output missing;

  end;

  else if paramcd in ('DIABP' 'SYSBP' 'HDL' 'LDL' 'CHOL' 'TRIG' 'WBC' 'WEIGHT' 'WSTCIR' 'HBA1C'
'BASO' 'EOS' 'MONO' 'NEUT' 'LYM') then output anl_all_nlog;

  else output anl_all_t;

run;
```

***Shapiro-Wilks test Non-normal mean for anl_all_t;

```
proc sql;

  create table SWT as
```

```

        select usubjid,paramcd,aval from adam.adlb

        where ablfl = 'Y' and fasfl ='Y' and paramcd in (select distinct paramcd from anl_all_t)

        order by paramcd;

quit;

proc univariate data=swt NORMALTEST;

    by paramcd;

    var aval;

    ods output TestsForNormality = test;

run;

data test;

    set test(where=(test = 'Shapiro-Wilk'));

    if pvalue <= 0.05 then log_f='Y';

    keep paramcd log_f;

run;

proc sort data=anl_all_t;by paramcd;run;

data anl_all_t_l anl_all_t_n;

    merge anl_all_t(in=a) test;

    by paramcd;

    if log_f = 'Y' and aval not in (.,0) then do;

logaval=log(aval);

        output anl_all_t_l;

    end;

    else if log_f ne 'Y' then output anl_all_t_n;

```

```
run;
```

```
data anl_all_log;
```

```
    set anl_all_log anl_all_t_l;
```

```
run;
```

```
proc sort data=anl_all_log;by paramcd avisitn;run;
```

```
data anl_all_nlog;
```

```
    set anl_all_nlog anl_all_t_n;
```

```
run;
```

```
proc sort data=anl_all_nlog;by paramcd avisitn;run;
```

```
***Calculate STAT;
```

```
%macro glm_nco(dsin=,conf=,var=,base=,dsout=,dsoutf=,logf=);
```

```
data anal;
```

```
    set &dsin;
```

```
    &conf
```

```
run;
```

```
proc sort data=anal;by paramn paramcd param avisitn avisit trtp;run;
```

```
options byline;
```

```
proc means data=anal noprint;
```

```
    var &var;
```

```
    by paramn paramcd param avisitn avisit trtp trtpn;
```



```

output out=stat N=N1 mean=mean lclm=lclm uclm=uclm;

/*    ods output BasicIntervals=stat;*/

run;

data &dsout;

    set stat;

    logf = &logf;

    if logf = 1 then do;

        mean = exp(mean);

        lclm = exp(lclm);

        uclm = exp(uclm);

    end;

    drop _type_ _freq_;

run;

%mend;

%glm_nco(dsin=anl_all_log,conf=,var=logaval,base=logbase,dsout=tabout_log,dsoutf=tabout_log_f,logf=1);

%glm_nco(dsin=anl_all_nlog,conf=,var=aval,base=base,dsout=tabout_nlog,dsoutf=tabout_nlog_f,logf=0);

/*%glm_nco(dsin=anl_all_log,conf=,var=logchg,base=logbase,dsout=tabout_log_c,dsoutf=tabout_log_f,logf=1);*/

/*%glm_nco(dsin=anl_all_nlog,conf=,var=chg,base=base,dsout=tabout_nlog_c,dsoutf=tabout_nlog_f,logf=0);*/

data tabout;

    set tabout_log tabout_nlog ;

    keep paramn paramcd param avisit avisitn logf mean lclm uclm trtp trtpn;

run;

```

```
proc sort data=tabout out=tflds.&t_name.;by logf paramn avisitn trtp trtpn;
```

```
%mend;
```

```
%t_anlrisk(t_name=F1501020301,t_pop1=pprot1fl,t_pop2=pprot2fl,t_pop3=pprot3fl,t_pop4=pprot4fl,t  
_title=%str(Table 15.2.4.25.1 Analysis of Risk Markers - PP Set));
```

```
%t_anlrisk(t_name=F1501020302,t_pop1=fasfl,t_pop2=fasfl,t_pop3=fasfl,t_pop4=fasfl,t_title=%str(Tabl  
e 15.2.4.25.1 Analysis of Risk Markers - FAS));
```