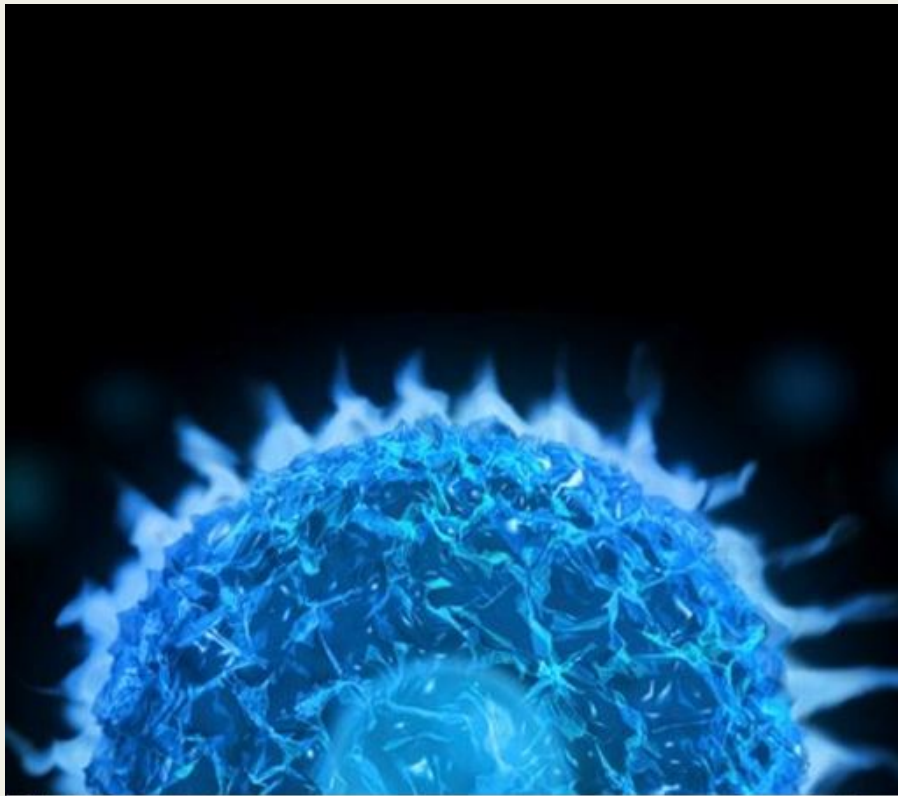




Introduction to ODS Graphics in Clinical Programming



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Agenda

- ODS Graphics.
- SG procedures.
- SGPLOT/SGPANEL usage and syntax.
- Customization options

ODS Graphics

- Integrating Graphics and ODS system.
- Turned on by ODS Graphics statement;
- Procedures like Proc Mixed , Proc Reg etc. can produce graphs.
- The options given dictate the type of graph produced.
- Ods Graphics;
- Ods pdf file = “.....graph1.pdf”
- Proc mixed data = xx **options** ;
- Class ;
- Model / **options**;
- Run;
- Ods pdf close;

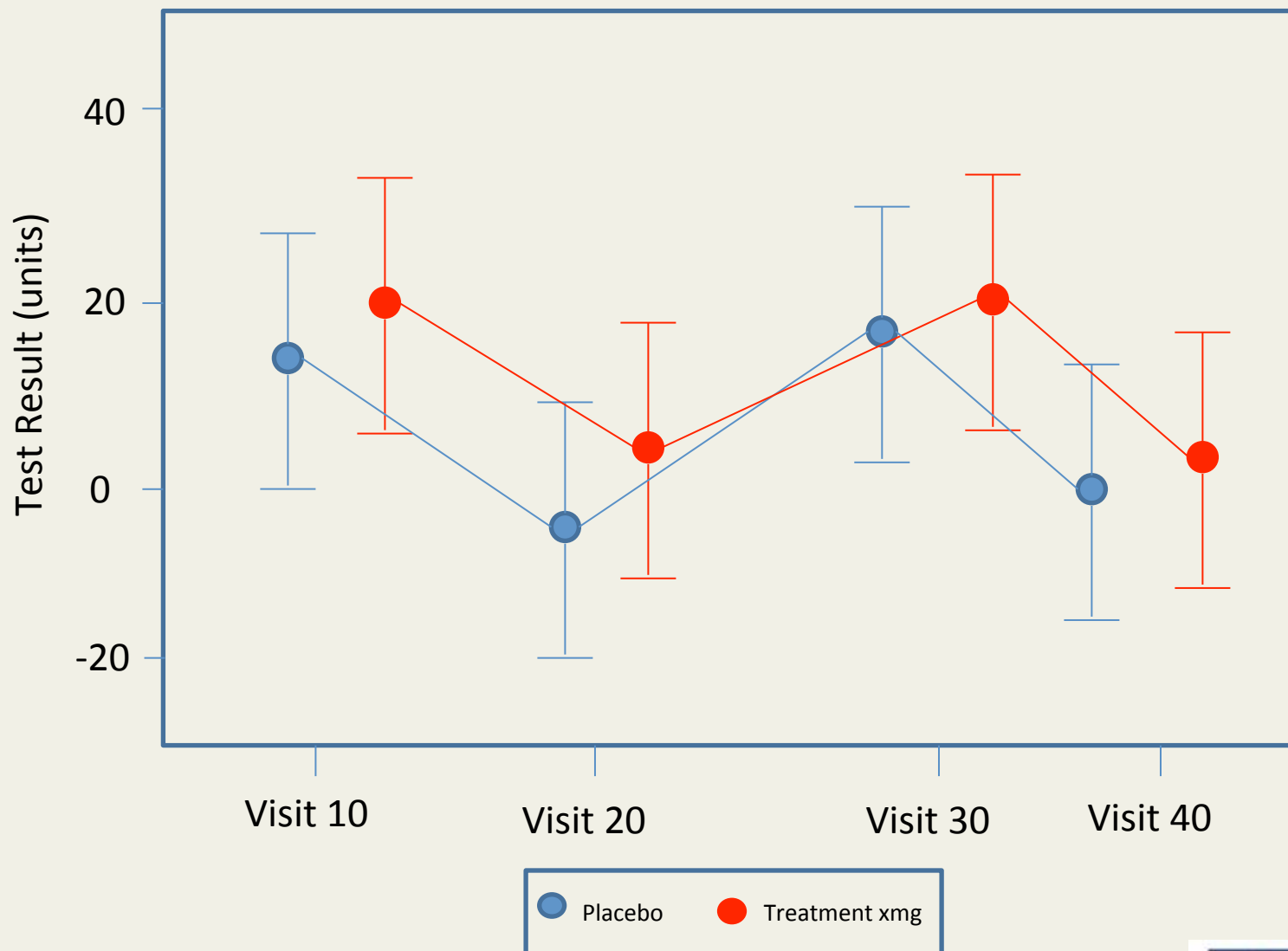
SG PROCEDURES

- SGPLOT, SGPANEL, SGSCATTER and SGRENDER (stand alone graphic procedures).
- Ease of Use.
- All procedures use GTL(Graphic Template Language) in the background.
- All SG procedures can output GTL code to enhance customization. (option Tmplout=filename)

SGPLOT

- Can produce various(single or multiple overlay) graphs including and not limited to Series, Scatter, Box , Forest plots etc.
- Graph area, Axis offset, Tick mark orientation, legend etc. are automatically controlled.
- General Syntax
Proc SGPLOT data = ;
Plot statement / options;
Axis, Legend, Footnotes etc. and their options;

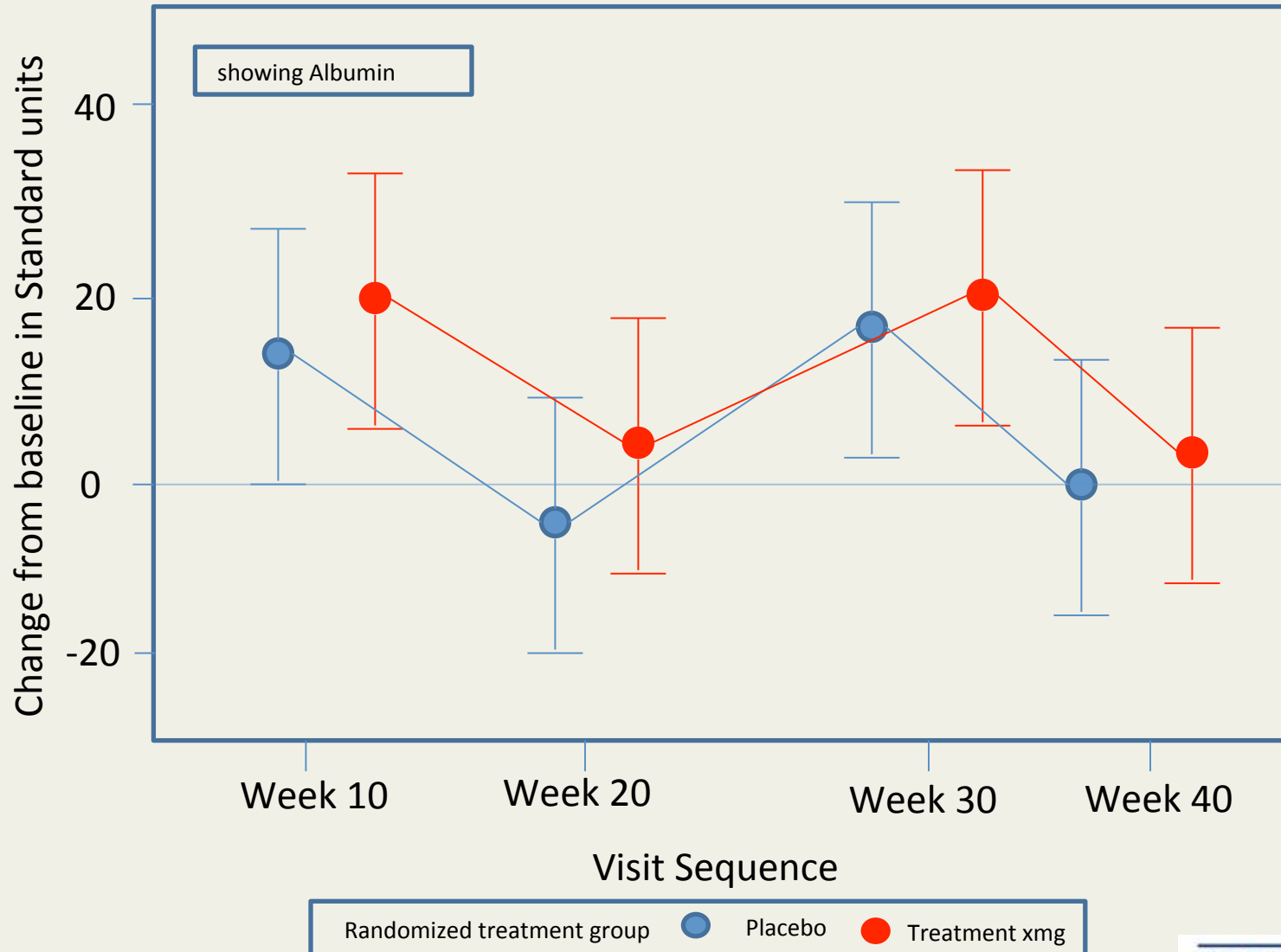
Plot of Mean $\pm$ (SE) of Chg. From Baseline for Chem. parameters



Program code

1. Ods graphics;
2. Proc **SGPLOT** data = lab_means;
3. *Series* x= Visit y= Mean /group = Trtgrp
4. Markers markerattrs = (Symbol= circle);
5. *Scatter* x= Visit y= Mean /group = Trtgrp
6. Yerrorupper =H_SE Yerrorlower = L_SE
7. Markerattrs = (Size =0);
8. *Refline* 0 /transparency =0.3;
9. *Inset* "Showing Albumin" /border;
10. Run;

Plot of Mean $\pm$ (SE) of Chg. From Baseline for Chem. parameters



SGPANEL

- Produces paneled Graphs.
- Useful for comparative analysis.
- General Syntax

Proc SGPANEL data = ;

Plot statement / options;

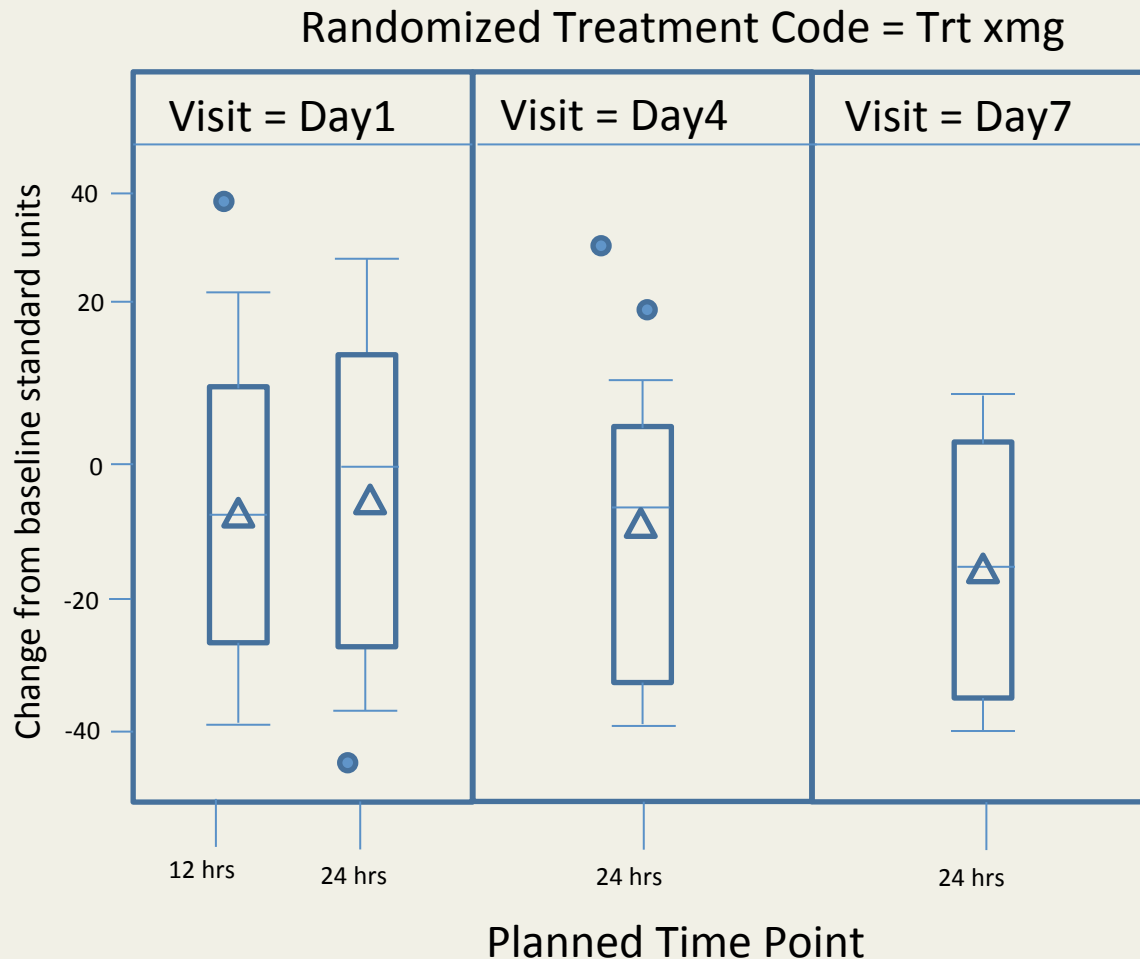
Axis, Legend, Footnotes etc. and their options;

Box plot of Change from Baseline at days 1,4 and 7 for Glucose



Wrong
Slide
Bobo..

Box plot of Change from Baseline at days 1,4 and 7 for Glucose



Program Code

1. Ods graphics;
2. Proc ***SGPANEL*** data = labs;
3. By Trtcd;
4. *Panelby* Visitnum/*uniscale* = row rows=1
columns=3;
5. *Vbox* Lbchg/*category* = Ptm;
6. Format Visitnum vis. Trtcd trt.;
7. Rowaxis discrete order = data;
8. Run;
9. Quit;

Customization

- Graph plot: Line attributes, Marker attributes, Fill Attributes, Size etc.
- Axis options: Tick marks, Type of Axis etc.
- Global statements: Title, Footnotes, Label, Formats etc.
- Layout Change: Row lattice, Column Lattice, Noborders, spacing options etc.
- Legend: Keylegend , Legendlabel statements and position options.
- Refline, Grid, Inset text etc.
- Annotation datasets.
- Further customizations using GTL code.

References

- http://support.sas.com/documentation/cdl/en/statug/63033/HTML/default/viewer.htm#odsgraph_toc.htm
- **The Power to Plot: Three Ways to Enhance SG Graphical Outputs** Xiangxiang Meng, University of Cincinnati, Cincinnati, OH.
- **Using PROC SGPLOT for Quick High-Quality Graphs** Susan J. Slaughter, Avocet Solutions, Davis, CA.
Lora D. Delwiche, University of California, Davis, CA.
- **The Graph Template Language: Beyond the SAS/GRAPH® Procedures** Jesse M. Pratt, Cincinnati Children's Hospital Medical Center, Cincinnati, OH.

Thank You.