

From: [Wu, Baohua](#)
To: [Daruwalla, Jimmy Hoshang](#)
Subject: RE: statistics section write-up
Date: Friday, June 15, 2012 12:29:00 PM
Attachments: [gage.pdf](#)
[gnum.pdf](#)
[gsex.pdf](#)
[table_sex.rtf](#)
[table_age.rtf](#)
[table_num.rtf](#)

Jimmy,

See the attached files for graph by age groups/number of Joint replacement groups/sex. The p values shown in the graphs are from tests for the time effect on each treatment, and their difference.

See below for the revision.

Statistical Analyses

We used a repeated-measures analyses for BMI, SBP, DBP, HgA1c, TG, LDL, and HDL using a **means model** with SAS Proc Mixed (version 9, mixed linear models) to determine changes in these outcomes between baseline and follow-up at one and two years. The independent variable in the repeated measures analysis is time of follow up (**Baseline, 1 or 2 years**). The statistical model provided separate estimates of our outcome measures by years of follow up. An **compound symmetry** variance-covariance form among the repeated measurements was assumed for our outcomes, and estimates of the standard errors of parameters were used to perform statistical tests and construct 95% confidence intervals. **Statistical tests were 2-sided.**

Let me know if you have question here.

Baohua

From: Daruwalla, Jimmy Hoshang
Sent: Thursday, June 14, 2012 7:22 PM
To: Wu, Baohua
Subject: statistics section write-up

Hi Baohua,

Below is what I wrote up for the statistical analysis part of my methods section. Its pretty much the same as the example you had sent me, but with our outcome measures. Please let me know if you think this is a sufficient description for the retrospective paper and prospective grant proposal, or if you think more detail is needed.

Statistical Analyses

We used a repeated-measures analyses of changes in BMI, SBP, DBP, HgA1c, TG, LDL, and HDL using a means mixed-model with SAS Proc Mixed (version 9, mixed linear models) to determine changes in these outcomes between baseline and follow-up at one and two years. The independent variable in the repeated measures analysis is time of follow up (1 or 2 years). The statistical model provided separate estimates of our outcome measures by years of follow up. An unstructured variance-covariance form among the repeated

measurements was assumed for our outcomes, and estimates of the standard errors of parameters were used to perform statistical tests and construct 95% confidence intervals.

Thanks!

Jimmy

From: Daruwalla, Jimmy Hoshang
Sent: Tuesday, June 12, 2012 4:09 PM
To: Wu, Baohua
Cc: Bradbury, Thomas L
Subject: RE: update,Meeting

Baohua,

Thanks for meeting with me. It was extremely helpful. Below is a summary, for our reference, of the plan that we discussed:

- 1) Stratifying data based on age, using the median age as a cutoff to divide patients into two groups: younger and older. Then we can see if there is a difference in any of our outcome measures related to age.
- 2) Stratifying data based on number of joint replacements (1 vs. 2). This will help us see if having multiple joint replacements has a greater effect on any of our outcomes than having just one joint replacement. I have attached the updated spreadsheet, which contains a column indicating how many TJAs each pt received during the 2 yr follow-up period.
- 3) Calculating a p(followup) for each individual treatment (TKA, THA) separately, for each of our outcome measures. This will allow us to analyze the impact of each treatment individually, especially for outcomes where the p(interaction), i.e. difference between the TKA and THA trends, was significant but the p(followup), i.e. change in an outcome over the two year follow up for both treatments combined, was insignificant (e.g. DBP).
- 4) I will write up the statistical methods section as best as I can and then send it to you for review.

Thanks again!

Jimmy