2.10 Statistical Analysis

Data were translated into a computerized database structure. The database was examined for errors using range and logical data cleaning methods, and inconsistencies were remedied. Statistical analyses were done using SPSS version 20 computer software (Statistical Package for Social Sciences).

The 95% prediction interval in a linear regression model is a statistical procedure to anticipate or predict the expected range of possible correct values of the mean predicted concentration with 95% confidence.

The statistical significance of difference in mean of a normally distributed variable, like drug concentration between 2 groups was assessed using the independent samples Student's t-test. The statistical significance of mean calculated errors between predicted and target concentration was assessed by paired t-test.

Difference between 2 means is a measure of effect size presented in its original units of measurements. It equals the mean of a quantitative outcome variable in a test group minus that of a comparison group. Its usefulness is limited for comparison with other contexts of similar units of measurements and magnitude of mean. The difference between 2 means as a measure of effect is affected by the units of measurement for the variable and the amount of variability (SD). Therefore such a measure is not useful to compare the effect size across different type of variables or different studies.

Cohen's d is a standardized measure of effect size for difference between 2 means, which can be compared across different variables and studies, since it has no unit of