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The effect of different altitude levels on spinal anesthesia in cesarean section surgery; Comparison of anesthesia parameters and hemodynamic changes

Statistical Analysis Plan

One Way ANOVA Power Analysis

Numeric Results

Power	Average n	k	Total N	Alpha	Beta	Std Dev of Means (Sm)	Standard Deviation (S)	Effect Size
0,81163	31,00	3	93	0,05000	0,18837	18,37	55,35	0,3319

References

Desu, M. M. and Raghavarao, D. 1990. Sample Size Methodology. Academic Press. New York.
Fleiss, Joseph L. 1986. The Design and Analysis of Clinical Experiments. John Wiley & Sons. New York.
Kirk, Roger E. 1982. Experimental Design: Procedures for the Behavioral Sciences. Brooks/Cole. Pacific Grove, California.

Report Definitions

Power is the probability of rejecting a false null hypothesis. It should be close to one.
n is the average group sample size.
k is the number of groups.
Total N is the total sample size of all groups combined.
Alpha is the probability of rejecting a true null hypothesis. It should be small.
Beta is the probability of accepting a false null hypothesis. It should be small.
Sm is the standard deviation of the group means under the alternative hypothesis.
Standard deviation is the within group standard deviation.
The Effect Size is the ratio of Sm to standard deviation.

Summary Statements

In a one-way ANOVA study, sample sizes of 31, 31, and 31 are obtained from the 3 groups whose means are to be compared. The total sample of 93 subjects achieves 81% power to detect differences among the means versus the alternative of equal means using an F test with a 0,05000 significance level. The size of the variation in the means is represented by their standard deviation which is 18,37. The common standard deviation within a group is assumed to be 55,35.

Sample size; The minimum number of patients required to complete our study with 95% confidence level (α=0.05) and 80% power was calculated as 31 for each group, a total of 93. The IBM-Statistical Package for Social Sciences (IBM-SPSS Inc., Chicago, IL, USA) 22.0 program will be used in the analysis of the data obtained in the study. The conformity of the data to the normal distribution will be examined by the "Shapiro-Wilk test". Continuous variables will be expressed as mean and standard deviation or (median (25-75 percentile)) according to their distribution status, and categorical variables will be expressed as numbers and percentages. In the analysis of continuous variables, the 'One-Way Anova test' will be applied in cases where parametric test assumptions are met, otherwise the 'Kruskal-Wallis test' will be applied. Bonferroni or Games-Howell tests will be applied for post hoc comparisons. “Chi-square test” will be used in the analysis of categorical variables. “Analysis of Variance (ANOVA)” will be used for repeated measurements at different times between groups. Statistical significance level will be accepted as $p<0.05$.