Statistical Analysis Plan

Clinical Investigation of the Next Generation Phaco System (VERITAS Vision System)

NCT Number: **NCT04332640**

Document date: 02 Sep 2020

STATISTICAL ANALYSIS PLAN

Clinical Investigation of the Next Generation Phaco System (VERITAS™ Vision System)

PROTOCOL NUMBER: ALPI-101-SYST

SPONSOR
Johnson & Johnson Surgical Vision, Inc.
1700 East St. Andrew Pl.
Santa Ana, California USA 92705

SAP CHANGE HISTORY

Version	Section(s)	Page(s)	Description of Change(s)	Rationale for Change(s)
1.0	N/A	N/A	Original	N/A

1 INTRODUCTION

This document summarizes the statistical methods to be implemented during the analysis of data for the evaluation of the overall clinical performance of the VERITAS™ Vision System in human subjects and the overall surgeon acceptability. This is a prospective, open-label clinical study. The study will be conducted at up to 3 sites with minimum 55 eyes and up to 150 eyes to be treated. Each subject will undergo preoperative, operative and 1-day postoperative visits.

The primary endpoints of 'overall clinical performance' will be evaluated based on surgeon's ratings for anterior chamber stability, followability, holdability, Phaco (cutting) efficiency, satisfaction with usability of VERITAS Vision System and overall satisfaction with VERITAS Vision System. Additional endpoints include effective phaco time, ultrasonic time, average phaco power, volume of balanced salt solution used, satisfaction with VERITAS foot pedal, satisfaction with VERITAS Swivel handpiece, corneal clarity rating at 1-day post-op, satisfaction with 1-day post-op clinical results of surgery with VERITAS Vision System, rate of complications and adverse events.

Table listings are included in Appendix I.

2 ANALYSIS POPULATIONS

2.1 ANALYSIS POPULATIONS

All subjects treated who have available data will be considered the safety population and used for the analysis. The operative visit is the critical analysis time point for the primary endpoints.

2.2 DATA CONVENTIONS

Descriptive statistics will typically include sample size (N), mean, standard deviation (SD), minimum (Min.), and maximum (Max.) as appropriate for continuous variables. For categorical data, the frequency and proportion will be computed.

For visual acuity data, letter scores will be converted to LogMAR prior to analysis. Formulas used for visual acuity analysis are included in Appendix II.

3 ACCOUNTABILITY/DEMOGRAPHICS

3.1 ACCOUNTABILITY

The number of enrolled subjects will be tabulated by site. Subject accountability will be summarized as a frequency distribution by scheduled visits. The frequency and proportion of available subjects, including those outside of the interval, and the

frequency and proportion of missing subjects (forms not yet completed, active, missed visit, lost to follow-up or discontinued) will be reported.

3.2 DEMOGRAPHICS

Subject demographic data including age, sex and ethnicity will be presented. Age will be summarized with descriptive statistics with mean, standard deviation, minimum and maximum. In addition, age will be categorized by less than 30, 30 to 39, 40 to 49, 50 to 59, 60 to 69, 70 and older group. The frequency distributions of sex, age group and ethnicity will be tabulated.

4 PREOPERATIVE/OPERATIVE PARAMETERS

Preoperative and operative parameters for all treated eyes will be reported. The frequency and proportion of eyes with selected responses will be tabulated for categorical data and descriptive statistics will be used for continuous data. Operative findings will be reported and will include the percentages of eyes with operative complications and any other reported incidents.

5 STUDY ENDPOINTS

5.1 PRIMARY ENDPOINTS

Overall clinical performance will be evaluated based on surgeon's ratings and system log files, operative report and other medical records for the following item: rating of anterior chamber stability, rating of followability, rating of holdability, rating of Phaco (cutting) efficiency, satisfaction of usability of VERITAS Vision System and overall satisfaction with VERITAS Vision System.

Each of the questions will have a surgeon's rating score of 1 (unsatisfied) to 5 (very satisfied) . The frequency and proportion of surgeon's ratings for each of the questions will be reported. Clinical performance will be considered favorable for rating scores of 4 and above. The proportion and the associated 95% confidence interval of the rating scores of 4 and above for each question will be computed. List of eyes with a rating score of 1 or 2 on a question and the corresponding comment will be provided.

5.2 OTHER ENDPOINTS

5.2.1 EFFECTIVE PHACO TIME (EPT), ULTRASONIC TIME (UST), AVERAGE PHACO POWER (AVG), VOLUME OF BALANCED SALT SOLUTION (BSS) USED

Summary statistics (mean, standard deviation, median, minimum and maximum) of EPT, UST, AVG and BSS will be reported.

5.2.2 SATISFACTION WITH VERITAS FOOTPEDAL AND SATISFACTION WITH SWIVEL HANDPIECE

The frequency and proportion of surgeon's ratings for satisfaction with VERITAS footpedal (2 items) and satisfaction with Swivel handpiece (3 items) will be reported. List of eyes with a rating score of 1 or 2 and the corresponding comment will be provided.

5.2.3 RATING OF CORNEAL CLARITY AT 1-DAY POST-OP

The frequency and proportion of surgeon's ratings of satisfaction with corneal clarity at 1-day post-op with be provided. List of eyes with a rating score of 1 or 2 and the corresponding comment will be provided.

5.2.4 SATISFACTION WITH 1-DAY POST-OP CLINICAL RESULTS OF SURGERY WITH VERITAS VISION SYSTEM

The frequency and proportion of surgeon's ratings for satisfaction with 1-day post-op clinical results of surgery with VERITAS (based on results of UCDVA, corneal clarity, adverse event rate, and other relevant clinical assessment) will be reported. List of eyes with a rating score of 1 or 2 and the corresponding comment will be provided.

5.2.5 OTHER OPERATIVE QUESTIONNAIRE ITEMS

The frequency and proportion of surgeon's ratings for all other operative questionnaire items will be reported. List of eyes with a rating score of 1 or 2 and the corresponding comment will be provided.

5.2.6 CORNEAL DENSITOMETRY

Results of corneal densitometry will be summarized by four topographical zones (0-2 mm, 2-6 mm, 6-10 mm, 10-12 mm and total) and by corneal depth (anterior layer, central layer, posterior layer and total). The mean, standard deviation, median, minimum and maximum will be reported for each eye at preoperative visit and 1-day postoperative visit.

5.2.7 ANTERIOR CHAMBER DEPTH (ACD)

Summary statistics (mean, standard deviation, median, minimum and maximum) of ACD will be reported at preoperative visit and 1-day postoperative visit.

5.2.8 MONOCULAR UCDVA AND BCDVA

The frequency and proportion of eyes with each acuity line of UCDVA (20/16 or better, 20/20 or better, 20/25 or better, 20/40 or better, 20/100 or better and worse than 20/100) will be summarized at preoperative visit and 1-day postoperative visit. The frequency and proportion of eyes with each acuity line of BCDVA (20/16 or better, 20/20 or better, 20/25 or better, 20/40 or better, etc.) at 1-day postoperative visit will be summarized.

5.2.9 RATE OF COMPLICATIONS AND ADVERSE EVENTS

The frequency and proportion of eyes with complications and adverse events will be summarized throughout the study.

6 SAMPLE SIZE CALCULATIONS

The study sample size is using a confidence interval approach. A two-sided 95% confidence interval for an expected proportion of 0.95 using the large sample normal approximation will extend 0.058 (i.e., a precision of 5.8%) with a sample size of 55 eyes and will extend 0.035 (i.e., a precision of 3.5%) with a sample size of 150 eyes.

APPENDIX I: TABLE LISTING

Variable	All Subjects	Study Eyes
ENROLLMENT/PREOP/OP		
Accountability/Enrollment		
Subjects/eyes at the investigational site (n, %)	x	x
Accountability table over time – (Available for analysis, Missing data –Forms not yet completed, Active, Missed visit, Lost to follow-up, Discontinued) (n and %)	x	x
Out of Interval listing	x	x
Demographics		
Demographic – Age in years (N, Mean, SD, Min, Max), race, sex, ethnicity (n and %) Age in groups (<30, 30-39, 40-49, 50-59, 60-69, ≥70) (n, %)	x	
Preoperative Parameters		
Cataract status (n, %)		x
IOP - (N, Mean, SD, Min, Max)		x
Operative Data		
surgical complications (n and %)		x
Other surgical procedure (n and %)		x
PRIMARY ENDPOINTS		
Rating of anterior chamber stability, rating of followability, rating of holdability, rating of Phaco (cutting) efficiency, satisfaction of usability, overall satisfaction: (n, %) for each rating score and (n, %, 95% CI) for rating score ≥4		x
ADDITIONAL ENDPOINTS		
EPT, UST, AVG, BSS (N, Mean, SD, Median, Min, Max)		x
Satisfaction with footpedal (2 items) and handpiece (3 items) (n, %)		x
Rating of 1-day post-op corneal clarity (n, %)		x
Satisfaction with 1-day post-op clinical results (n, %)		x
Other operative questionnaire items (n, %)		x
Corneal Densitometry by radial zone (0-2mm, 2-6mm, 6-10mm, 10-12mm, total) and by corneal depth (anterior, central, posterior, total) at preop and 1-day post-op – (N, Mean, SD, Median, Min, Max)		X
Anterior chamber depth at preop and 1-day post-op (N, Mean, SD, Median, Min, Max)		x
Monocular UCDVA at each acuity line – (n and % within each category) at preop and 1-day post-op Monocular BCDVA at each acuity line – (n and % within each category) at 1-day post-op		x
Medical findings from slit lamp exam over time (n, %)		x
Ocular symptoms over time (n, %)		x
Rate of complications and adverse events (n, %)		x

APPENDIX II: FORMULAS USED FOR VISUAL ACUITY

LOGMAR CONVERSIONS

LogMAR score for UCDVA and BCDVA	
Category	LogMAR
20/16 or better	≤ -0.06
20/20 or better	≤ 0.04
20/25 or better	≤ 0.14
20/32 or better	≤ 0.24
20/40 or better	≤ 0.34
20/50 or better	≤ 0.44
20/63 or better	≤ 0.54
20/80 or better	≤ 0.64
20/100 or better	≤ 0.74
Worse than 20/100	>0.74