**Supplementary file**

**The supplementary information contains additional details describing the analyses of statistical data in the study.**

**Detailed analyses and results for Table 1**

**Age**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Age | .168 | 107 | .000 | .848 | 107 | .000 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Age (C) | Mean | | 24.17 | .421 |
| 95% Confidence Interval for Mean | Lower Bound | 23.31 |  |
| Upper Bound | 25.03 |  |
| 5% Trimmed Mean | | 23.93 |  |
| Median | | 24.00 |  |
| Variance | | 5.316 |  |
| Std. Deviation | | 2.306 |  |
| Minimum | | 21 |  |
| Maximum | | 33 |  |
| Range | | 12 |  |
| Interquartile Range | | 2 |  |
| Skewness | | 2.115 | .427 |
| Kurtosis | | 6.583 | .833 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Age (C) | | |
| N | Valid | 30 |
| Missing | 0 |
| Median | | 24.00 |
| Percentiles | 25 | 23.00 |
| 50 | 24.00 |
| 75 | 25.00 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Age (P) | Mean | | 72.71 | 1.493 |
| 95% Confidence Interval for Mean | Lower Bound | 69.74 |  |
| Upper Bound | 75.69 |  |
| 5% Trimmed Mean | | 73.58 |  |
| Median | | 75.00 |  |
| Variance | | 171.654 |  |
| Std. Deviation | | 13.102 |  |
| Minimum | | 38 |  |
| Maximum | | 91 |  |
| Range | | 53 |  |
| Interquartile Range | | 18 |  |
| Skewness | | -.893 | .274 |
| Kurtosis | | .227 | .541 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Age (P) | | |
| N | Valid | 77 |
| Missing | 0 |
| Median | | 75.00 |
| Percentiles | 25 | 65.00 |
| 50 | 75.00 |
| 75 | 83.00 |

C:healthy subject P:patient

**Sex**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sex Crosstabulation** | | | | |
| Count | | | | |
|  | | Gender | | Total |
| female | male |
| status | C | 10 | 20 | 30 |
| P | 30 | 47 | 77 |
| Total | | 40 | 67 | 107 |

C: healthy subject P: patient

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Chi-Square Tests** | | | | | |
|  | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
| Pearson Chi-Square | .292a | 1 | .589 |  |  |
| Continuity Correctionb | .101 | 1 | .750 |  |  |
| Likelihood Ratio | .295 | 1 | .587 |  |  |
| Fisher's Exact Test |  |  |  | .660 | .378 |
| N of Valid Cases | 107 |  |  |  |  |
| a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.21. | | | | | |
| b. Computed only for a 2x2 table | | | | | |

**Body height**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Body height, cm | .063 | 107 | .200\* | .984 | 107 | .226 |
| \*. This is a lower bound of the true significance. | | | | | | |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Group Statistics** | | | | | |
|  | status | N | Mean | Std. Deviation | Std. Error Mean |
| Height | C | 30 | 170.53 | 8.114 | 1.481 |
| P | 77 | 160.19 | 7.726 | .880 |

C:healthy subject P:patient

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Independent Samples Test** | | | | | | | | | | |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Height | Equal variances assumed | 1.137 | .289 | 6.129 | 105 | .000 | 10.335 | 1.686 | 6.992 | 13.679 |
| Equal variances not assumed |  |  | 5.997 | 50.688 | .000 | 10.335 | 1.723 | 6.875 | 13.795 |

**Body weight**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Weight | .089 | 107 | .036 | .964 | 107 | .005 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Weight (C) | Mean | | 70.50 | 3.232 |
| 95% Confidence Interval for Mean | Lower Bound | 63.89 |  |
| Upper Bound | 77.11 |  |
| 5% Trimmed Mean | | 69.78 |  |
| Median | | 68.15 |  |
| Variance | | 313.337 |  |
| Std. Deviation | | 17.701 |  |
| Minimum | | 45 |  |
| Maximum | | 110 |  |
| Range | | 65 |  |
| Interquartile Range | | 22 |  |
| Skewness | | .689 | .427 |
| Kurtosis | | -.331 | .833 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Weight (C) | | |
| N | Valid | 30 |
| Missing | 0 |
| Median | | 68.15 |
| Percentiles | 25 | 56.58 |
| 50 | 68.15 |
| 75 | 78.70 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Weight (P) | Mean | | 57.81 | 1.400 |
| 95% Confidence Interval for Mean | Lower Bound | 55.02 |  |
| Upper Bound | 60.59 |  |
| 5% Trimmed Mean | | 57.67 |  |
| Median | | 58.00 |  |
| Variance | | 151.001 |  |
| Std. Deviation | | 12.288 |  |
| Minimum | | 34 |  |
| Maximum | | 87 |  |
| Range | | 53 |  |
| Interquartile Range | | 18 |  |
| Skewness | | .100 | .274 |
| Kurtosis | | -.484 | .541 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Weight (P) | | |
| N | Valid | 77 |
| Missing | 0 |
| Median | | 58.00 |
| Percentiles | 25 | 49.50 |
| 50 | 58.00 |
| 75 | 67.00 |

C:healthy subject P:patient

**Body mass index(BMI)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| BMI | .101 | 107 | .010 | .953 | 107 | .001 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| BMI (C) | Mean | | 24.181 | 1.0576 |
| 95% Confidence Interval for Mean | Lower Bound | 22.018 |  |
| Upper Bound | 26.344 |  |
| 5% Trimmed Mean | | 23.756 |  |
| Median | | 22.427 |  |
| Variance | | 33.554 |  |
| Std. Deviation | | 5.7926 |  |
| Minimum | | 17.6 |  |
| Maximum | | 38.7 |  |
| Range | | 21.2 |  |
| Interquartile Range | | 6.9 |  |
| Skewness | | 1.311 | .427 |
| Kurtosis | | .937 | .833 |

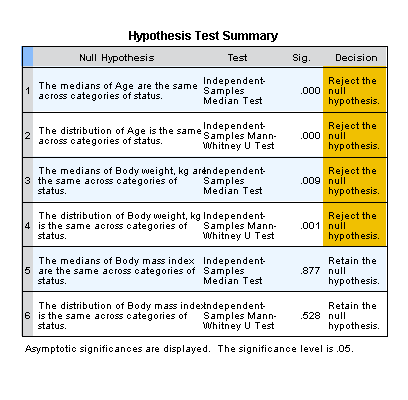
|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| BMI (C) | | |
| N | Valid | 30 |
| Missing | 0 |
| Median | | 22.427 |
| Percentiles | 25 | 20.062 |
| 50 | 22.427 |
| 75 | 26.958 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| BMI (P) | Mean | | 22.528 | .5250 |
| 95% Confidence Interval for Mean | Lower Bound | 21.483 |  |
| Upper Bound | 23.574 |  |
| 5% Trimmed Mean | | 22.401 |  |
| Median | | 22.491 |  |
| Variance | | 21.220 |  |
| Std. Deviation | | 4.6065 |  |
| Minimum | | 13.4 |  |
| Maximum | | 34.2 |  |
| Range | | 20.8 |  |
| Interquartile Range | | 5.5 |  |
| Skewness | | .308 | .274 |
| Kurtosis | | .231 | .541 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| BMI (P) | | |
| N | Valid | 77 |
| Missing | 0 |
| Median | | 22.491 |
| Percentiles | 25 | 19.516 |
| 50 | 22.491 |
| 75 | 24.989 |

C:healthy subject P:patient

**Nonparametric Tests of Age, Body weight and BMI**

**Septic shock with using vasoactive agents**

| **Septic shock with using vasoactive agents** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | No | 32 | 41.6 | 41.6 | 41.6 |
| Yes | 45 | 58.4 | 58.4 | 100.0 |
| Total | 77 | 100.0 | 100.0 |  |

**Glasgow coma scale**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | | | | | |
|  | Kolmogorov-Smirnova | | | | Shapiro-Wilk | | | | | |
| Statistic | df | Sig. | | Statistic | | df | | Sig. | |
| Glasgow coma scale | .168 | 77 | .000 | | .880 | | 77 | | .000 | |
| a. Lilliefors Significance Correction | | | | | | | | | | |
| **Descriptives** | | | | | | | | | |
|  | | | | | | Statistic | | Std. Error | |
| Glasgow coma scale | Mean | | | | | 8.84 | | .527 | |
| 95% Confidence Interval for Mean | | | Lower Bound | | 7.79 | |  | |
| Upper Bound | | 9.89 | |  | |
| 5% Trimmed Mean | | | | | 8.88 | |  | |
| Median | | | | | 8.00 | |  | |
| Variance | | | | | 21.370 | |  | |
| Std. Deviation | | | | | 4.623 | |  | |
| Minimum | | | | | 2 | |  | |
| Maximum | | | | | 15 | |  | |
| Range | | | | | 13 | |  | |
| Interquartile Range | | | | | 10 | |  | |
| Skewness | | | | | .131 | | .274 | |
| Kurtosis | | | | | -1.337 | | .541 | |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Glasgow coma scale | | |
| N | Valid | 77 |
| Missing | 0 |
| Median | | 8.00 |
| Percentiles | 25 | 6.00 |
| 50 | 8.00 |
| 75 | 15.00 |

**Acute Physiology and Chronic Health Evaluation Score II**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Acute Physiology and Chronic Health Evaluation Score II | .061 | 77 | .200\* | .986 | 77 | .564 |
| \*. This is a lower bound of the true significance. | | | | | | |
| a. Lilliefors Significance Correction | | | | | | |

| **Descriptive Statistics** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | N | Minimum | Maximum | Mean | Std. Deviation |
| Acute Physiology and Chronic Health Evaluation Score II | 77 | 6 | 37 | 18.91 | 6.602 |
| Valid N (listwise) | 77 |  |  |  |  |

**Mean arterial pressure**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Mean arterial pressure, mmHg | .107 | 77 | .028 | .960 | 77 | .015 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Mean arterial pressure, mmHg | Mean | | 88.188 | 1.5681 |
| 95% Confidence Interval for Mean | Lower Bound | 85.065 |  |
| Upper Bound | 91.312 |  |
| 5% Trimmed Mean | | 87.496 |  |
| Median | | 87.500 |  |
| Variance | | 189.349 |  |
| Std. Deviation | | 13.7604 |  |
| Minimum | | 62.0 |  |
| Maximum | | 130.0 |  |
| Range | | 68.0 |  |
| Interquartile Range | | 17.0 |  |
| Skewness | | .701 | .274 |
| Kurtosis | | .991 | .541 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Mean arterial pressure, mmHg | | |
| N | Valid | 77 |
| Missing | 0 |
| Median | | 87.500 |
| Percentiles | 25 | 78.000 |
| 50 | 87.500 |
| 75 | 95.000 |

**Systolic arterial pressure**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| 1Systolic arterial pressure(mmHg) | .089 | 77 | .200\* | .969 | 77 | .060 |
| \*. This is a lower bound of the true significance. | | | | | | |
| a. Lilliefors Significance Correction | | | | | | |

| **Descriptive Statistics** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | N | Minimum | Maximum | Mean | Std. Deviation |
| Systolic arterial pressure, mmHg | 77 | 79.0 | 180.0 | 114.753 | 19.5786 |
| Valid N (listwise) | 77 |  |  |  |  |

**Diastolic arterial pressure**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Diastolic arterial pressure, mmHg | .124 | 77 | .005 | .966 | 77 | .037 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Diastolic arterial pressure, mmHg | Mean | | 61.623 | 1.4059 |
| 95% Confidence Interval for Mean | Lower Bound | 58.823 |  |
| Upper Bound | 64.423 |  |
| 5% Trimmed Mean | | 61.110 |  |
| Median | | 59.000 |  |
| Variance | | 152.185 |  |
| Std. Deviation | | 12.3363 |  |
| Minimum | | 39.0 |  |
| Maximum | | 99.0 |  |
| Range | | 60.0 |  |
| Interquartile Range | | 17.0 |  |
| Skewness | | .646 | .274 |
| Kurtosis | | .494 | .541 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Diastolic arterial pressure, mmHg | | |
| N | Valid | 77 |
| Missing | 0 |
| Median | | 59.000 |
| Percentiles | 25 | 53.500 |
| 50 | 59.000 |
| 75 | 70.500 |

**White blood cells**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| White blood cells(1000/uL) | .087 | 77 | .200\* | .930 | 77 | .000 |
| \*. This is a lower bound of the true significance. | | | | | | |
| a. Lilliefors Significance Correction | | | | | | |

| **Descriptive Statistics** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | N | Minimum | Maximum | Mean | Std. Deviation |
| White blood cells, 1000/uL | 77 | .5 | 47.6 | 13.638 | 8.5618 |
| Valid N (listwise) | 77 |  |  |  |  |

**Haemoglobin**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Hemoglobin(g/dL) | .089 | 77 | .200\* | .968 | 77 | .052 |
| \*. This is a lower bound of the true significance. | | | | | | |
| a. Lilliefors Significance Correction | | | | | | |

| **Descriptive Statistics** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | N | Minimum | Maximum | Mean | Std. Deviation |
| Haemoglobin, g/dL | 77 | 5.8 | 16.1 | 11.191 | 2.6501 |
| Valid N (listwise) | 77 |  |  |  |  |

**Creatinine**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Creatinine, mg/dL | .206 | 77 | .000 | .615 | 77 | .000 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Creatinine, mg/dL | Mean | | 2.0718 | .23072 |
| 95% Confidence Interval for Mean | Lower Bound | 1.6123 |  |
| Upper Bound | 2.5313 |  |
| 5% Trimmed Mean | | 1.8080 |  |
| Median | | 1.5900 |  |
| Variance | | 4.099 |  |
| Std. Deviation | | 2.02458 |  |
| Minimum | | .37 |  |
| Maximum | | 15.66 |  |
| Range | | 15.29 |  |
| Interquartile Range | | 1.47 |  |
| Skewness | | 4.363 | .274 |
| Kurtosis | | 26.561 | .541 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Creatinine, mg/dL | | |
| N | Valid | 77 |
| Missing | 0 |
| Median | | 1.5900 |
| Percentiles | 25 | .9800 |
| 50 | 1.5900 |
| 75 | 2.4500 |

**Arterial lactate**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Arterial lactate, mg/dL | .252 | 75 | .000 | .545 | 75 | .000 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Arterial lactate, mg/dL | Mean | | 28.423 | 3.6320 |
| 95% Confidence Interval for Mean | Lower Bound | 21.186 |  |
| Upper Bound | 35.660 |  |
| 5% Trimmed Mean | | 23.147 |  |
| Median | | 19.400 |  |
| Variance | | 989.369 |  |
| Std. Deviation | | 31.4542 |  |
| Minimum | | 5.1 |  |
| Maximum | | 218.9 |  |
| Range | | 213.8 |  |
| Interquartile Range | | 17.8 |  |
| Skewness | | 4.064 | .277 |
| Kurtosis | | 19.950 | .548 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Arterial lactate, mg/dL | | |
| N | Valid | 75 |
| Missing | 2 |
| Median | | 19.400 |
| Percentiles | 25 | 13.600 |
| 50 | 19.400 |
| 75 | 31.400 |

**Partial pressure of oxygen**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Partial pressure of oxygen, mmHg | .202 | 77 | .000 | .707 | 77 | .000 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Partial pressure of oxygen, mmHg | Mean | | 129.538 | 8.8836 |
| 95% Confidence Interval for Mean | Lower Bound | 111.845 |  |
| Upper Bound | 147.231 |  |
| 5% Trimmed Mean | | 119.354 |  |
| Median | | 105.800 |  |
| Variance | | 6076.663 |  |
| Std. Deviation | | 77.9530 |  |
| Minimum | | 48.7 |  |
| Maximum | | 565.5 |  |
| Range | | 516.8 |  |
| Interquartile Range | | 59.8 |  |
| Skewness | | 3.056 | .274 |
| Kurtosis | | 12.966 | .541 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Partial pressure of oxygen, mmHg | | |
| N | Valid | 77 |
| Missing | 0 |
| Median | | 105.800 |
| Percentiles | 25 | 83.750 |
| 50 | 105.800 |
| 75 | 143.550 |

**Arterial oxygen saturation**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Arterial oxygen saturation, percent | .220 | 77 | .000 | .599 | 77 | .000 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Arterial oxygen saturation, percent | Mean | | 97.478 | .3726 |
| 95% Confidence Interval for Mean | Lower Bound | 96.736 |  |
| Upper Bound | 98.220 |  |
| 5% Trimmed Mean | | 97.888 |  |
| Median | | 98.100 |  |
| Variance | | 10.689 |  |
| Std. Deviation | | 3.2694 |  |
| Minimum | | 75.0 |  |
| Maximum | | 100.0 |  |
| Range | | 25.0 |  |
| Interquartile Range | | 2.4 |  |
| Skewness | | -4.582 | .274 |
| Kurtosis | | 29.220 | .541 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Arterial oxygen saturation, percent | | |
| N | Valid | 77 |
| Missing | 0 |
| Median | | 98.100 |
| Percentiles | 25 | 96.950 |
| 50 | 98.100 |
| 75 | 99.350 |

**Intake and Output (Data recorded on the day prior to the NIRS measurement)**

Day 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Intake and Output ml/day | .107 | 70 | .047 | .970 | 70 | .087 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Intake and Output, ml/day | Mean | | 435.59 | 130.951 |
| 95% Confidence Interval for Mean | Lower Bound | 174.34 |  |
| Upper Bound | 696.83 |  |
| 5% Trimmed Mean | | 399.29 |  |
| Median | | 201.00 |  |
| Variance | | 1200380.130 |  |
| Std. Deviation | | 1095.619 |  |
| Minimum | | -1967 |  |
| Maximum | | 4224 |  |
| Range | | 6191 |  |
| Interquartile Range | | 1415 |  |
| Skewness | | .653 | .287 |
| Kurtosis | | 1.336 | .566 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Statistics**  Intake and Output, ml/day | | | |
| N | Valid | 70 |
| Missing | 7 |
| Percentiles | 25 | -262.25 |
| 50 | 201.00 |
| 75 | 1152.75 |

Day 2

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Intake and Output, ml/day | .104 | 77 | .038 | .948 | 77 | .003 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Intake and Output, ml/day | Mean | | 764.16 | 153.403 |
| 95% Confidence Interval for Mean | Lower Bound | 458.63 |  |
| Upper Bound | 1069.68 |  |
| 5% Trimmed Mean | | 697.89 |  |
| Median | | 531.00 |  |
| Variance | | 1811999.607 |  |
| Std. Deviation | | 1346.105 |  |
| Minimum | | -2418 |  |
| Maximum | | 5325 |  |
| Range | | 7743 |  |
| Interquartile Range | | 1512 |  |
| Skewness | | .878 | .274 |
| Kurtosis | | 1.737 | .541 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Statistics**  Intake and Output, ml/day | | | |
| N | Valid | 77 |
| Missing | 0 |
| Percentiles | 25 | -132.00 |
| 50 | 531.00 |
| 75 | 1380.00 |

Day 3

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| I/O,  day 3 | .078 | 75 | .200\* | .966 | 75 | .041 |
| \*. This is a lower bound of the true significance. | | | | | | |
| a. Lilliefors Significance Correction | | | | | | |

| **Descriptive Statistics** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | N | Minimum | Maximum | Mean | Std. Deviation |
| Intake and Output, ml/day | 75 | -3289 | 4960 | 337.69 | 1222.798 |
| Valid N (listwise) | 75 |  |  |  |  |

Total mean

| **Descriptive Statistics** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | N | Minimum | Maximum | Mean | Std. Deviation |
| Intake and Output, ml/day | 77 | -1434 | 3347 | 514.86 | 960.870 |
| Valid N (listwise) | 77 |  |  |  |  |

**Intravascular fluid administration (Data recorded on the day prior to the NIRS measurement)**

Day 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Intravascular fluid administration, ml/day | .132 | 70 | .004 | .865 | 70 | .000 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Intravascular fluid administration, ml/day | Mean | | 1240.77 | 111.674 |
| 95% Confidence Interval for Mean | Lower Bound | 1017.99 |  |
| Upper Bound | 1463.55 |  |
| 5% Trimmed Mean | | 1150.76 |  |
| Median | | 973.00 |  |
| Variance | | 872971.831 |  |
| Std. Deviation | | 934.330 |  |
| Minimum | | 100 |  |
| Maximum | | 4330 |  |
| Range | | 4230 |  |
| Interquartile Range | | 999 |  |
| Skewness | | 1.490 | .287 |
| Kurtosis | | 2.287 | .566 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Intravascular fluid administration, ml/day | | |
| N | Valid | 70 |
| Missing | 7 |
| Median | | 973.00 |
| Percentiles | 25 | 590.00 |
| 50 | 973.00 |
| 75 | 1588.75 |

Day 2

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Intravascular fluid administration, ml/day | .152 | 77 | .000 | .865 | 77 | .000 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Intravascular fluid administration, ml/day | Mean | | 1624.99 | 127.789 |
| 95% Confidence Interval for Mean | Lower Bound | 1370.47 |  |
| Upper Bound | 1879.50 |  |
| 5% Trimmed Mean | | 1520.88 |  |
| Median | | 1414.00 |  |
| Variance | | 1257405.013 |  |
| Std. Deviation | | 1121.341 |  |
| Minimum | | 80 |  |
| Maximum | | 6101 |  |
| Range | | 6021 |  |
| Interquartile Range | | 1083 |  |
| Skewness | | 1.678 | .274 |
| Kurtosis | | 3.721 | .541 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Intravascular fluid administration, ml/day | | |
| N | Valid | 77 |
| Missing | 0 |
| Median | | 1414.00 |
| Percentiles | 25 | 902.00 |
| 50 | 1414.00 |
| 75 | 1984.50 |

Day 3

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| Intravascular fluid administration, ml/day | .137 | 75 | .001 | .878 | 75 | .000 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| Intravascular fluid administration, ml/day | Mean | | 1209.59 | 108.624 |
| 95% Confidence Interval for Mean | Lower Bound | 993.15 |  |
| Upper Bound | 1426.02 |  |
| 5% Trimmed Mean | | 1123.39 |  |
| Median | | 988.00 |  |
| Variance | | 884937.489 |  |
| Std. Deviation | | 940.711 |  |
| Minimum | | 10 |  |
| Maximum | | 5007 |  |
| Range | | 4997 |  |
| Interquartile Range | | 1213 |  |
| Skewness | | 1.575 | .277 |
| Kurtosis | | 3.737 | .548 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| Intravascular fluid administration, ml/day | | |
| N | Valid | 75 |
| Missing | 2 |
| Median | | 988.00 |
| Percentiles | 25 | 480.00 |
| 50 | 988.00 |
| 75 | 1693.00 |

Total mean

| **Descriptive Statistics** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | N | Minimum | Maximum | Mean | Std. Deviation |
| Intravascular fluid administration, ml/day | 77 | 170 | 3763 | 1376.16 | 823.839 |
| Valid N (listwise) | 77 |  |  |  |  |

**Diagnosis**

**Pulmonary infection**

| **Pulmonary infection** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | No | 26 | 33.8 | 33.8 | 33.8 |
| Yes | 51 | 66.2 | 66.2 | 100.0 |
| Total | 77 | 100.0 | 100.0 |  |

**Urinary tract infection**

| **Urinary tract infection** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | No | 41 | 53.2 | 53.2 | 53.2 |
| Yes | 36 | 46.8 | 46.8 | 100.0 |
| Total | 77 | 100.0 | 100.0 |  |

**Hepatic or biliary tract infection**

| **Hepatic or biliary tract infection** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | No | 69 | 89.6 | 89.6 | 89.6 |
| Yes | 8 | 10.4 | 10.4 | 100.0 |
| Total | 77 | 100.0 | 100.0 |  |

**Spontaneous bacteria peritonitis**

| **Spontaneous bacteria peritonitis** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | No | 76 | 98.7 | 98.7 | 98.7 |
| Yes | 1 | 1.3 | 1.3 | 100.0 |
| Total | 77 | 100.0 | 100.0 |  |

**Pelvic infection**

| **Pelvic infection** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | No | 76 | 98.7 | 98.7 | 98.7 |
| Yes | 1 | 1.3 | 1.3 | 100.0 |
| Total | 77 | 100.0 | 100.0 |  |

**Cellulitis**

| **Cellulitis** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | No | 73 | 94.8 | 94.8 | 94.8 |
| Yes | 4 | 5.2 | 5.2 | 100.0 |
| Total | 77 | 100.0 | 100.0 |  |

**Other**

| **Other** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | No | 74 | 96.1 | 96.1 | 96.1 |
| Yes | 3 | 3.9 | 3.9 | 100.0 |
| Total | 77 | 100.0 | 100.0 |  |

**ICU survival**

| **ICU survivor** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | ICU non-survivor | 16 | 20.8 | 20.8 | 20.8 |
| ICU survivor | 61 | 79.2 | 79.2 | 100.0 |
| Total | 77 | 100.0 | 100.0 |  |

**ICU length of stay**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Tests of Normality** | | | | | | |
|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
| Statistic | df | Sig. | Statistic | df | Sig. |
| ICU length of stay, days | .185 | 77 | .000 | .829 | 77 | .000 |
| a. Lilliefors Significance Correction | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| ICU length of stay, days | Mean | | 9.16 | .738 |
| 95% Confidence Interval for Mean | Lower Bound | 7.69 |  |
| Upper Bound | 10.63 |  |
| 5% Trimmed Mean | | 8.57 |  |
| Median | | 7.00 |  |
| Variance | | 41.923 |  |
| Std. Deviation | | 6.475 |  |
| Minimum | | 3 |  |
| Maximum | | 27 |  |
| Range | | 24 |  |
| Interquartile Range | | 8 |  |
| Skewness | | 1.303 | .274 |
| Kurtosis | | .836 | .541 |

|  |  |  |
| --- | --- | --- |
| **Statistics** | | |
| ICU length of stay, days | | |
| N | Valid | 77 |
| Missing | 0 |
| Median | | 7.00 |
| Percentiles | 25 | 4.00 |
| 50 | 7.00 |
| 75 | 11.50 |

**Detailed analyses and results for Table 2**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Status | | | | | |
|  |  | Controls | | | Patients | | |
|  |  | Mean | Standard Deviation | Valid N | Mean | Standard Deviation | Valid N |
| HbO2 | Day 1 | .2214 | .0099 | 30 | .1993 | .0114 | 77 |
| Day 2 | .2216 | .0099 | 30 | .1960 | .0212 | 75 |
| Day 3 | .2213 | .0104 | 30 | .1928 | .0253 | 64 |
| HbR | Day 1 | .2229 | .0158 | 30 | .2228 | .0165 | 77 |
| Day 2 | .2222 | .0155 | 30 | .2277 | .0319 | 75 |
| Day 3 | .2222 | .0152 | 30 | .2320 | .0418 | 64 |
| HbT | Day 1 | .4443 | .0239 | 30 | .4222 | .0227 | 77 |
| Day 2 | .4439 | .0231 | 30 | .4237 | .0244 | 75 |
| Day 3 | .4435 | .0236 | 30 | .4248 | .0259 | 64 |
| StO2(%) | Day 1 | 49.88 | 1.26 | 30 | 47.25 | 1.97 | 77 |
| Day 2 | 49.97 | 1.35 | 30 | 46.40 | 5.25 | 75 |
| Day 3 | 49.92 | 1.28 | 30 | 45.66 | 6.80 | 64 |
| H2O | Day 1 | 7.40 | 1.89 | 30 | 10.57 | 3.37 | 77 |
| Day 2 | 7.60 | 1.95 | 30 | 10.52 | 3.40 | 75 |
| Day 3 | 7.49 | 1.92 | 30 | 10.79 | 3.40 | 64 |

**HbO2**

Day 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbO2 (C) | Mean | | .221416 | .0018043 |
| 95% Confidence Interval for Mean | Lower Bound | .217726 |  |
| Upper Bound | .225106 |  |
| 5% Trimmed Mean | | .221695 |  |
| Median | | .221465 |  |
| Variance | | .000 |  |
| Std. Deviation | | .0098823 |  |
| Minimum | | .1941 |  |
| Maximum | | .2391 |  |
| Range | | .0449 |  |
| Interquartile Range | | .0112 |  |
| Skewness | | -.349 | .427 |
| Kurtosis | | .819 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbO2 (P) | Mean | | .199344 | .0012945 |
| 95% Confidence Interval for Mean | Lower Bound | .196766 |  |
| Upper Bound | .201922 |  |
| 5% Trimmed Mean | | .200024 |  |
| Median | | .200410 |  |
| Variance | | .000 |  |
| Std. Deviation | | .0113590 |  |
| Minimum | | .1592 |  |
| Maximum | | .2203 |  |
| Range | | .0611 |  |
| Interquartile Range | | .0121 |  |
| Skewness | | -1.078 | .274 |
| Kurtosis | | 1.962 | .541 |

C:healthy subject P:patient

Day 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbO2 (C) | Mean | | .221640 | .0017985 |
| 95% Confidence Interval for Mean | Lower Bound | .217962 |  |
| Upper Bound | .225318 |  |
| 5% Trimmed Mean | | .221797 |  |
| Median | | .223235 |  |
| Variance | | .000 |  |
| Std. Deviation | | .0098510 |  |
| Minimum | | .1986 |  |
| Maximum | | .2429 |  |
| Range | | .0444 |  |
| Interquartile Range | | .0138 |  |
| Skewness | | -.308 | .427 |
| Kurtosis | | .410 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbO2 (P) | Mean | | .196044 | .0024480 |
| 95% Confidence Interval for Mean | Lower Bound | .191166 |  |
| Upper Bound | .200922 |  |
| 5% Trimmed Mean | | .199051 |  |
| Median | | .199090 |  |
| Variance | | .000 |  |
| Std. Deviation | | .0212004 |  |
| Minimum | | .1095 |  |
| Maximum | | .2276 |  |
| Range | | .1181 |  |
| Interquartile Range | | .0124 |  |
| Skewness | | -2.752 | .277 |
| Kurtosis | | 8.452 | .548 |

C:healthy subject P:patient

Day 3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbO2 (C) | Mean | | .221293 | .0019025 |
| 95% Confidence Interval for Mean | Lower Bound | .217402 |  |
| Upper Bound | .225184 |  |
| 5% Trimmed Mean | | .221360 |  |
| Median | | .220900 |  |
| Variance | | .000 |  |
| Std. Deviation | | .0104204 |  |
| Minimum | | .1957 |  |
| Maximum | | .2465 |  |
| Range | | .0508 |  |
| Interquartile Range | | .0126 |  |
| Skewness | | .048 | .427 |
| Kurtosis | | .787 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbO2 (P) | Mean | | .192817 | .0031647 |
| 95% Confidence Interval for Mean | Lower Bound | .186493 |  |
| Upper Bound | .199142 |  |
| 5% Trimmed Mean | | .196070 |  |
| Median | | .199585 |  |
| Variance | | .001 |  |
| Std. Deviation | | .0253176 |  |
| Minimum | | .0997 |  |
| Maximum | | .2179 |  |
| Range | | .1182 |  |
| Interquartile Range | | .0124 |  |
| Skewness | | -2.377 | .299 |
| Kurtosis | | 5.423 | .590 |

C:healthy subject P:patient

**HbR**

Day 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbR (C) | Mean | | .222854 | .0028869 |
| 95% Confidence Interval for Mean | Lower Bound | .216949 |  |
| Upper Bound | .228758 |  |
| 5% Trimmed Mean | | .222918 |  |
| Median | | .224010 |  |
| Variance | | .000 |  |
| Std. Deviation | | .0158122 |  |
| Minimum | | .1913 |  |
| Maximum | | .2518 |  |
| Range | | .0605 |  |
| Interquartile Range | | .0213 |  |
| Skewness | | -.096 | .427 |
| Kurtosis | | -.448 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbR (P) | Mean | | .222836 | .0018856 |
| 95% Confidence Interval for Mean | Lower Bound | .219081 |  |
| Upper Bound | .226592 |  |
| 5% Trimmed Mean | | .222700 |  |
| Median | | .220780 |  |
| Variance | | .000 |  |
| Std. Deviation | | .0165461 |  |
| Minimum | | .1912 |  |
| Maximum | | .2601 |  |
| Range | | .0690 |  |
| Interquartile Range | | .0252 |  |
| Skewness | | .170 | .274 |
| Kurtosis | | -.812 | .541 |

C:healthy subject P:patient

Day 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbR (C) | Mean | | .222212 | .0028315 |
| 95% Confidence Interval for Mean | Lower Bound | .216421 |  |
| Upper Bound | .228003 |  |
| 5% Trimmed Mean | | .222243 |  |
| Median | | .221375 |  |
| Variance | | .000 |  |
| Std. Deviation | | .0155089 |  |
| Minimum | | .1920 |  |
| Maximum | | .2511 |  |
| Range | | .0591 |  |
| Interquartile Range | | .0199 |  |
| Skewness | | -.002 | .427 |
| Kurtosis | | -.518 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbR (P) | Mean | | .227693 | .0036877 |
| 95% Confidence Interval for Mean | Lower Bound | .220345 |  |
| Upper Bound | .235041 |  |
| 5% Trimmed Mean | | .223195 |  |
| Median | | .221970 |  |
| Variance | | .001 |  |
| Std. Deviation | | .0319360 |  |
| Minimum | | .1923 |  |
| Maximum | | .3575 |  |
| Range | | .1653 |  |
| Interquartile Range | | .0283 |  |
| Skewness | | 2.524 | .277 |
| Kurtosis | | 7.596 | .548 |

C:healthy subject P:patient

Day 3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbR (C) | Mean | | .222236 | .0027806 |
| 95% Confidence Interval for Mean | Lower Bound | .216549 |  |
| Upper Bound | .227923 |  |
| 5% Trimmed Mean | | .222359 |  |
| Median | | .222965 |  |
| Variance | | .000 |  |
| Std. Deviation | | .0152302 |  |
| Minimum | | .1910 |  |
| Maximum | | .2507 |  |
| Range | | .0597 |  |
| Interquartile Range | | .0160 |  |
| Skewness | | -.109 | .427 |
| Kurtosis | | -.233 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbR (P) | Mean | | .231973 | .0052197 |
| 95% Confidence Interval for Mean | Lower Bound | .221542 |  |
| Upper Bound | .242404 |  |
| 5% Trimmed Mean | | .227249 |  |
| Median | | .217425 |  |
| Variance | | .002 |  |
| Std. Deviation | | .0417575 |  |
| Minimum | | .1924 |  |
| Maximum | | .3572 |  |
| Range | | .1648 |  |
| Interquartile Range | | .0300 |  |
| Skewness | | 2.128 | .299 |
| Kurtosis | | 3.845 | .590 |

C:healthy subject P:patient

**HbT**

Day 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbT (C) | Mean | | .444272 | .0043647 |
| 95% Confidence Interval for Mean | Lower Bound | .435345 |  |
| Upper Bound | .453199 |  |
| 5% Trimmed Mean | | .444751 |  |
| Median | | .444470 |  |
| Variance | | .001 |  |
| Std. Deviation | | .0239065 |  |
| Minimum | | .3854 |  |
| Maximum | | .4895 |  |
| Range | | .1041 |  |
| Interquartile Range | | .0337 |  |
| Skewness | | -.155 | .427 |
| Kurtosis | | .042 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbT (P) | Mean | | .422180 | .0025917 |
| 95% Confidence Interval for Mean | Lower Bound | .417018 |  |
| Upper Bound | .427342 |  |
| 5% Trimmed Mean | | .423081 |  |
| Median | | .420830 |  |
| Variance | | .001 |  |
| Std. Deviation | | .0227422 |  |
| Minimum | | .3548 |  |
| Maximum | | .4623 |  |
| Range | | .1075 |  |
| Interquartile Range | | .0298 |  |
| Skewness | | -.346 | .274 |
| Kurtosis | | .135 | .541 |

C:healthy subject P:patient

Day 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbT (C) | Mean | | .443852 | .0042133 |
| 95% Confidence Interval for Mean | Lower Bound | .435234 |  |
| Upper Bound | .452469 |  |
| 5% Trimmed Mean | | .444146 |  |
| Median | | .442190 |  |
| Variance | | .001 |  |
| Std. Deviation | | .0230773 |  |
| Minimum | | .3906 |  |
| Maximum | | .4932 |  |
| Range | | .1026 |  |
| Interquartile Range | | .0335 |  |
| Skewness | | -.083 | .427 |
| Kurtosis | | .021 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbT (P) | Mean | | .423737 | .0028130 |
| 95% Confidence Interval for Mean | Lower Bound | .418132 |  |
| Upper Bound | .429342 |  |
| 5% Trimmed Mean | | .423713 |  |
| Median | | .423260 |  |
| Variance | | .001 |  |
| Std. Deviation | | .0243612 |  |
| Minimum | | .3601 |  |
| Maximum | | .4771 |  |
| Range | | .1170 |  |
| Interquartile Range | | .0367 |  |
| Skewness | | .088 | .277 |
| Kurtosis | | -.304 | .548 |

C:healthy subject P:patient

Day 3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbT (C) | Mean | | .443529 | .0043062 |
| 95% Confidence Interval for Mean | Lower Bound | .434722 |  |
| Upper Bound | .452336 |  |
| 5% Trimmed Mean | | .443623 |  |
| Median | | .442810 |  |
| Variance | | .001 |  |
| Std. Deviation | | .0235859 |  |
| Minimum | | .3867 |  |
| Maximum | | .4972 |  |
| Range | | .1105 |  |
| Interquartile Range | | .0227 |  |
| Skewness | | .072 | .427 |
| Kurtosis | | .666 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| HbT (P) | Mean | | .424790 | .0032426 |
| 95% Confidence Interval for Mean | Lower Bound | .418310 |  |
| Upper Bound | .431270 |  |
| 5% Trimmed Mean | | .424271 |  |
| Median | | .420130 |  |
| Variance | | .001 |  |
| Std. Deviation | | .0259411 |  |
| Minimum | | .3587 |  |
| Maximum | | .4845 |  |
| Range | | .1258 |  |
| Interquartile Range | | .0357 |  |
| Skewness | | .403 | .299 |
| Kurtosis | | -.040 | .590 |

C:healthy subject P:patient

**StO2(%)**

Day 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| StO2 (C) | Mean | | 49.8751 | .22978 |
| 95% Confidence Interval for Mean | Lower Bound | 49.4052 |  |
| Upper Bound | 50.3451 |  |
| 5% Trimmed Mean | | 49.8500 |  |
| Median | | 49.6462 |  |
| Variance | | 1.584 |  |
| Std. Deviation | | 1.25854 |  |
| Minimum | | 47.64 |  |
| Maximum | | 52.49 |  |
| Range | | 4.85 |  |
| Interquartile Range | | 1.77 |  |
| Skewness | | .475 | .427 |
| Kurtosis | | -.323 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| StO2 (P) | Mean | | 47.2480 | .22443 |
| 95% Confidence Interval for Mean | Lower Bound | 46.8010 |  |
| Upper Bound | 47.6950 |  |
| 5% Trimmed Mean | | 47.2854 |  |
| Median | | 47.3630 |  |
| Variance | | 3.878 |  |
| Std. Deviation | | 1.96938 |  |
| Minimum | | 42.15 |  |
| Maximum | | 50.81 |  |
| Range | | 8.66 |  |
| Interquartile Range | | 2.99 |  |
| Skewness | | -.216 | .274 |
| Kurtosis | | -.530 | .541 |

C:healthy subject P:patient

Day 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| StO2 (C) | Mean | | 49.9706 | .24642 |
| 95% Confidence Interval for Mean | Lower Bound | 49.4666 |  |
| Upper Bound | 50.4746 |  |
| 5% Trimmed Mean | | 49.9516 |  |
| Median | | 49.6992 |  |
| Variance | | 1.822 |  |
| Std. Deviation | | 1.34969 |  |
| Minimum | | 47.29 |  |
| Maximum | | 52.78 |  |
| Range | | 5.49 |  |
| Interquartile Range | | 1.78 |  |
| Skewness | | .335 | .427 |
| Kurtosis | | -.169 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| StO2 (P) | Mean | | 46.4030 | .60629 |
| 95% Confidence Interval for Mean | Lower Bound | 45.1949 |  |
| Upper Bound | 47.6111 |  |
| 5% Trimmed Mean | | 47.3260 |  |
| Median | | 47.6129 |  |
| Variance | | 27.569 |  |
| Std. Deviation | | 5.25063 |  |
| Minimum | | 24.00 |  |
| Maximum | | 51.28 |  |
| Range | | 27.27 |  |
| Interquartile Range | | 3.05 |  |
| Skewness | | -3.378 | .277 |
| Kurtosis | | 11.523 | .548 |

C:healthy subject P:patient

Day 3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| StO2 (C) | Mean | | 49.9241 | .23308 |
| 95% Confidence Interval for Mean | Lower Bound | 49.4474 |  |
| Upper Bound | 50.4008 |  |
| 5% Trimmed Mean | | 49.8743 |  |
| Median | | 49.7784 |  |
| Variance | | 1.630 |  |
| Std. Deviation | | 1.27666 |  |
| Minimum | | 47.57 |  |
| Maximum | | 53.01 |  |
| Range | | 5.44 |  |
| Interquartile Range | | 1.44 |  |
| Skewness | | .871 | .427 |
| Kurtosis | | .671 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| StO2 (P) | Mean | | 45.6563 | .84944 |
| 95% Confidence Interval for Mean | Lower Bound | 43.9589 |  |
| Upper Bound | 47.3538 |  |
| 5% Trimmed Mean | | 46.5906 |  |
| Median | | 47.5761 |  |
| Variance | | 46.180 |  |
| Std. Deviation | | 6.79555 |  |
| Minimum | | 21.83 |  |
| Maximum | | 51.68 |  |
| Range | | 29.85 |  |
| Interquartile Range | | 3.61 |  |
| Skewness | | -2.512 | .299 |
| Kurtosis | | 5.523 | .590 |

C:healthy subject P:patient

**H2O**

Day 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| H2O (C) | Mean | | 7.4041 | .34556 |
| 95% Confidence Interval for Mean | Lower Bound | 6.6974 |  |
| Upper Bound | 8.1109 |  |
| 5% Trimmed Mean | | 7.3759 |  |
| Median | | 7.5022 |  |
| Variance | | 3.582 |  |
| Std. Deviation | | 1.89273 |  |
| Minimum | | 2.53 |  |
| Maximum | | 12.39 |  |
| Range | | 9.86 |  |
| Interquartile Range | | 2.02 |  |
| Skewness | | .322 | .427 |
| Kurtosis | | 1.630 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| H2O (P) | Mean | | 10.5716 | .38384 |
| 95% Confidence Interval for Mean | Lower Bound | 9.8071 |  |
| Upper Bound | 11.3361 |  |
| 5% Trimmed Mean | | 10.3421 |  |
| Median | | 9.9319 |  |
| Variance | | 11.345 |  |
| Std. Deviation | | 3.36822 |  |
| Minimum | | 5.66 |  |
| Maximum | | 23.05 |  |
| Range | | 17.40 |  |
| Interquartile Range | | 4.03 |  |
| Skewness | | 1.147 | .274 |
| Kurtosis | | 1.735 | .541 |

C:healthy subject P:patient

Day 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| H2O (C) | Mean | | 7.6009 | .35585 |
| 95% Confidence Interval for Mean | Lower Bound | 6.8731 |  |
| Upper Bound | 8.3287 |  |
| 5% Trimmed Mean | | 7.5586 |  |
| Median | | 7.3642 |  |
| Variance | | 3.799 |  |
| Std. Deviation | | 1.94906 |  |
| Minimum | | 2.52 |  |
| Maximum | | 13.00 |  |
| Range | | 10.47 |  |
| Interquartile Range | | 2.30 |  |
| Skewness | | .388 | .427 |
| Kurtosis | | 2.171 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| H2O (P) | Mean | | 10.5201 | .39310 |
| 95% Confidence Interval for Mean | Lower Bound | 9.7368 |  |
| Upper Bound | 11.3033 |  |
| 5% Trimmed Mean | | 10.3551 |  |
| Median | | 9.7477 |  |
| Variance | | 11.590 |  |
| Std. Deviation | | 3.40436 |  |
| Minimum | | 4.58 |  |
| Maximum | | 21.03 |  |
| Range | | 16.45 |  |
| Interquartile Range | | 4.29 |  |
| Skewness | | .739 | .277 |
| Kurtosis | | .418 | .548 |

C:healthy subject P:patient

Day 3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| H2O (C) | Mean | | 7.4883 | .35064 |
| 95% Confidence Interval for Mean | Lower Bound | 6.7711 |  |
| Upper Bound | 8.2054 |  |
| 5% Trimmed Mean | | 7.4390 |  |
| Median | | 7.3918 |  |
| Variance | | 3.689 |  |
| Std. Deviation | | 1.92055 |  |
| Minimum | | 2.34 |  |
| Maximum | | 13.00 |  |
| Range | | 10.66 |  |
| Interquartile Range | | 2.19 |  |
| Skewness | | .453 | .427 |
| Kurtosis | | 2.895 | .833 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptives** | | | | |
|  | | | Statistic | Std. Error |
| H2O (P) | Mean | | 10.7859 | .42475 |
| 95% Confidence Interval for Mean | Lower Bound | 9.9371 |  |
| Upper Bound | 11.6347 |  |
| 5% Trimmed Mean | | 10.6556 |  |
| Median | | 10.5098 |  |
| Variance | | 11.547 |  |
| Std. Deviation | | 3.39801 |  |
| Minimum | | 4.60 |  |
| Maximum | | 20.31 |  |
| Range | | 15.71 |  |
| Interquartile Range | | 3.97 |  |
| Skewness | | .573 | .299 |
| Kurtosis | | .158 | .590 |

C:healthy subject P:patient

**Detailed analyses and results for Figure 3**

As the relative tissue concentrations of Hb and H2O and tissue oxygenation were repeatedly measured at designated intervals over time, generalised estimating equations, which consider the correlation within individuals, were employed to evaluate the differences in NIRS parameters between groups.

***[HbO2]***

|  |  |  |  |
| --- | --- | --- | --- |
| **Tests of Model Effects** | | | |
| Source | Type III | | |
| Wald Chi-Square | df | Sig. |
| (Intercept) | 31239.614 | 1 | .000 |
| day | 4.240 | 2 | .120 |
| status | 114.698 | 1 | .000 |
| day \* status | 4.410 | 2 | .110 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter Estimates** | | | | | | | |
| Parameter | B | Std. Error | 95% Wald Confidence Interval | | Hypothesis Test | | |
| Lower | Upper | Wald Chi-Square | df | Sig. |
| (Intercept) | .221 | .0018 | .218 | .225 | 15579.338 | 1 | .000 |
| [day=3] | .000 | .0009 | -.002 | .002 | .019 | 1 | .890 |
| [day=2] | .000 | .0008 | -.001 | .002 | .077 | 1 | .782 |
| [day=1] | 0 | . | . | . | . | . | . |
| [status=p] | -.022 | .0022 | -.026 | -.018 | 101.485 | 1 | .000 |
| [status=c] | 0 | . | . | . | . | . | . |
| [day=3] \* [status=p] | -.006 | .0034 | -.013 | .001 | 3.116 | 1 | .078 |
| [day=3] \* [status=c] | 0 | . | . | . | . | . | . |
| [day=2] \* [status=p] | -.004 | .0024 | -.008 | .001 | 2.322 | 1 | .128 |
| [day=2] \* [status=c] | 0 | . | . | . | . | . | . |
| [day=1] \* [status=p] | 0 | . | . | . | . | . | . |
| [day=1] \* [status=c] | 0 | . | . | . | . | . | . |
| (Scale) | .000 |  |  |  |  |  |  |

□Day 2:Healthy subjects vs Patients

Z=(β4+β24)/ √se(β4)2+se(β24)2

=(-0.022+(-0.004))/ √0.00222+0.00242=-7.896

p-value=NORMSDIST(-7.896)= 1.44E-15

□Day 3:Healthy subjects vs Patients

Z=(β4+β34)/ √se(β4)2+se(β34)2

=(-0.022+(-0.006))/ √0.00222+0.00342=-6.936

p-value=NORMSDIST(-6.936)= 2.02E-12

□Patient:Day 1 vs Day 2

Z=(β2+β24)/ √se(β2)2+se(β24)2

=(0.0002+(-0.004))/ √0.00082+0.00242=-1.357

p-value=NORMSDIST(-1.357)= 0.087

□Patient:Day 1 vs Day 3

Z=(β3+β34)/ √se(β3)2+se(β34)2

=((-0.0001)+ (-0.006))/ √0.00092+0. 00342=-1.743

p-value=NORMSDIST(-1.743)= 0.041

□Patient:Day 2 vs Day 3

Z=〔 (β2+β24)- (β3+β34) 〕/ √〔 se(β2)+se(β24) 〕2+〔 se(β3)+se(β34) 〕2

=(0.0002+(-0.004))-( (-0.0001)+ (-0.006))/ √(0.0008+0.0024)2+(0.0009+0. 0034)2=0.498

p-value=2\*(1-NORMSDIST(0.498))= 0.618

□Healthy subjects:Day 2 vs Day 3

Z=(β2-β3)/ √se(β2)2+se(β3)2

=(0.0002-(-0.0001))/ √0.00082+0.00092=0.289

p-value=2\*(1-NORMSDIST(0.289))= 0.773

|  |  |  |  |
| --- | --- | --- | --- |
| HbO2 | | p-value | Z |
| group difference at | Day 1 | <0.001 |  |
| Day 2 | <0.001 | -7.896 |
| Day 3 | <0.001 | -6.936 |
| Patients | Day 1 vs Day 2 | 0.087 | -1.357 |
| Day 1 vs Day 3 | 0.041 | -1.743 |
| Day 2 vs Day 3 | 0.618 | 0.498 |
| Healthy subjects | Day 1 vs Day 2 | 0.782 |  |
| Day 1 vs Day 3 | 0.890 |  |
| Day 2 vs Day 3 | 0.773 | 0.289 |
| Patient vs Healthy subjects | | <0.001 |  |

***[HbR]***

|  |  |  |  |
| --- | --- | --- | --- |
| **Tests of Model Effects** | | | |
| Source | Type III | | |
| Wald Chi-Square | df | Sig. |
| (Intercept) | 13518.373 | 1 | .000 |
| day | 3.839 | 2 | .147 |
| status | 1.590 | 1 | .207 |
| day \* status | 5.660 | 2 | .059 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter Estimates** | | | | | | | |
| Parameter | B | Std. Error | 95% Wald Confidence Interval | | Hypothesis Test | | |
| Lower | Upper | Wald Chi-Square | df | Sig. |
| (Intercept) | .223 | .0028 | .217 | .228 | 6164.488 | 1 | .000 |
| [day=3] | -.001 | .0010 | -.003 | .001 | .364 | 1 | .546 |
| [day=2] | -.001 | .0009 | -.002 | .001 | .530 | 1 | .467 |
| [day=1] | 0 | . | . | . | . | . | . |
| [status=p] | .000 | .0034 | -.007 | .007 | .000 | 1 | .996 |
| [status=c] | 0 | . | . | . | . | . | . |
| [day=3] \* [status=p] | .009 | .0049 | .000 | .019 | 3.577 | 1 | .059 |
| [day=3] \* [status=c] | 0 | . | . | . | . | . | . |
| [day=2] \* [status=p] | .005 | .0032 | -.001 | .012 | 2.869 | 1 | .090 |
| [day=2] \* [status=c] | 0 | . | . | . | . | . | . |
| [day=1] \* [status=p] | 0 | . | . | . | . | . | . |
| [day=1] \* [status=c] | 0 | . | . | . | . | . | . |
| (Scale) | .001 |  |  |  |  |  |  |

□Day 2:Healthy subjects vs Patients

Z=(β4+β24)/ √se(β4)2+se(β24)2

=(-0.00001+0.0054)/ √0.00342+0.00322=1.155

p-value=2\*(1-NORMSDIST(1.155))= 0.248

□Day 3:Healthy subjects vs Patients

Z=(β4+β34)/ √se(β4)2+se(β34)2

=(-0.00001+0.0092)/ √0.00342+0.00492=1.552

p-value=2\*(1-NORMSDIST(1.552))= 0.121

□Patient:Day 1 vs Day 2

Z=(β2+β24)/ √se(β2)2+se(β24)2

=(-0.00064+0.0054)/ √0.00092+0.00322=1.439

p-value=2\*(1-NORMSDIST(1.439))= 0.15

□Patient:Day 1 vs Day 3

Z=(β3+β34)/ √se(β3)2+se(β34)2

=(-0.00062+0.0092)/ √0.0012+0.00492=1.728

p-value=2\*(1-NORMSDIST(1.728))= 0.084

□Patient:Day 2 vs Day 3

Z=〔 (β2+β24)- (β3+β34) 〕/ √〔 se(β2)+se(β24) 〕2+〔 se(β3)+se(β34) 〕2

=(-0.00064+0.0054)-( -0.00062+0.0092)/ √(0.0009+0.0032)2+(0.001+0.0049)2=-0.543

p-value=NORMSDIST(-0.543))= 0.294

□Healthy subjects:Day 2 vs Day 3

Z=(β2-β3)/ √se(β2)2+se(β3)2

=(-0.00064)- (-0.00062)/ √0.00092+0.0012=-0.018

p-value=NORMSDIST(-0.018))= 0.493

|  |  |  |  |
| --- | --- | --- | --- |
| HbR | | p-value | Z |
| group difference at | Day 1 | 0.996 |  |
| Day 2 | 0.248 | 1.155 |
| Day 3 | 0.121 | 1.552 |
| Patients | Day 1 vs Day 2 | 0.15 | 1.439 |
| Day 1 vs Day 3 | 0.084 | 1.728 |
| Day 2 vs Day 3 | 0.294 | -0.543 |
| Healthy subjects | Day 1 vs Day 2 | 0.467 |  |
| Day 1 vs Day 3 | 0.546 |  |
| Day 2 vs Day 3 | 0.493 | -0.018 |
| Patient vs Healthy subjects | | 0.996 |  |

***[HbT]***

|  |  |  |  |
| --- | --- | --- | --- |
| **Tests of Model Effects** | | | |
| Source | Type III | | |
| Wald Chi-Square | df | Sig. |
| (Intercept) | 32339.685 | 1 | .000 |
| day | .328 | 2 | .849 |
| status | 18.125 | 1 | .000 |
| day \* status | 1.195 | 2 | .550 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter Estimates** | | | | | | | |
| Parameter | B | Std. Error | 95% Wald Confidence Interval | | Hypothesis Test | | |
| Lower | Upper | Wald Chi-Square | df | Sig. |
| (Intercept) | .444 | .0043 | .436 | .453 | 10717.907 | 1 | .000 |
| [day=3] | -.001 | .0016 | -.004 | .002 | .208 | 1 | .648 |
| [day=2] | .000 | .0014 | -.003 | .002 | .084 | 1 | .771 |
| [day=1] | 0 | . | . | . | . | . | . |
| [status=p] | -.022 | .0050 | -.032 | -.012 | 19.487 | 1 | .000 |
| [status=c] | 0 | . | . | . | . | . | . |
| [day=3] \* [status=p] | .003 | .0031 | -.003 | .009 | 1.108 | 1 | .293 |
| [day=3] \* [status=c] | 0 | . | . | . | . | . | . |
| [day=2] \* [status=p] | .001 | .0024 | -.003 | .006 | .375 | 1 | .540 |
| [day=2] \* [status=c] | 0 | . | . | . | . | . | . |
| [day=1] \* [status=p] | 0 | . | . | . | . | . | . |
| [day=1] \* [status=c] | 0 | . | . | . | . | . | . |
| (Scale) | .001 |  |  |  |  |  |  |

□Day 2:Healthy subjects vs Patients

Z=(β4+β24)/ √se(β4)2+se(β24)2

=(-0.022+0.001)/ √0.0052+0.00242=-3.719

p-value=NORMSDIST(-3.719)= 9.99E-05

□Day 3:Healthy subjects vs Patients

Z=(β4+β34)/ √se(β4)2+se(β34)2

=(-0.022+0.003)/ √0.0052+0.00312=-3.218

p-value=NORMSDIST(-3.218)= 0.001

□Patient:Day 1 vs Day 2

Z=(β2+β24)/ √se(β2)2+se(β24)2

=(-0.0004+0.001)/ √0.00142+0.00242=0.373

p-value=2\*(1-NORMSDIST(0.373))= 0.709

□Patient:Day 1 vs Day 3

Z=(β3+β34)/ √se(β3)2+se(β34)2

=(-0.001+0.003)/ √0.00162+0.00312=0.714

p-value=2\*(1-NORMSDIST(0.714))= 0.475

□Patient:Day 2 vs Day 3

Z=〔 (β2+β24)- (β3+β34) 〕/ √〔 se(β2)+se(β24) 〕2+〔 se(β3)+se(β34) 〕2

=(-0.0004+0.001)-( -0.001+0.003)/ √(0.0014+0.0024)2+(0.0016+0.0031)2=-0.236

p-value=NORMSDIST(-0.236)= 0.407

□Healthy subjects:Day 2 vs Day 3

Z=(β2-β3)/ √se(β2)2+se(β3)2

=(-0.0004-(-0.001))/ √0.00142+0.00162=-0.148

p-value=2\*(1-NORMSDIST(0.148))= 0.882

|  |  |  |  |
| --- | --- | --- | --- |
| HbT | | p-value | Z |
| group difference at | Day 1 | <0.001 |  |
| Day 2 | <0.001 | -3.719 |
| Day 3 | 0.001 | -3.218 |
| Patients | Day 1 vs Day 2 | 0.709 | 0.373 |
| Day 1 vs Day 3 | 0.475 | 0.714 |
| Day 2 vs Day 3 | 0.407 | -0.236 |
| Healthy subjects | Day 1 vs Day 2 | 0.771 |  |
| Day 1 vs Day 3 | 0.648 |  |
| Day 2 vs Day 3 | 0.882 | 0.148 |
| Patient vs Healthy subjects | | <0.001 |  |

**StO2(%)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Tests of Model Effects** | | | |
| Source | Type III | | |
| Wald Chi-Square | df | Sig. |
| (Intercept) | 42793.083 | 1 | .000 |
| day | 4.348 | 2 | .114 |
| status | 55.387 | 1 | .000 |
| day \* status | 5.620 | 2 | .060 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter Estimates** | | | | | | | |
| Parameter | B | Std. Error | 95% Wald Confidence Interval | | Hypothesis Test | | |
| Lower | Upper | Wald Chi-Square | df | Sig. |
| (Intercept) | 49.875 | .2259 | 49.432 | 50.318 | 48738.872 | 1 | .000 |
| [day=3] | .049 | .1117 | -.170 | .268 | .192 | 1 | .661 |
| [day=2] | .095 | .0999 | -.100 | .291 | .913 | 1 | .339 |
| [day=1] | 0 | . | . | . | . | . | . |
| [status=p] | -2.627 | .3174 | -3.249 | -2.005 | 68.503 | 1 | .000 |
| [status=c] | 0 | . | . | . | . | . | . |
| [day=3] \* [status=p] | -1.569 | .8348 | -3.205 | .067 | 3.532 | 1 | .060 |
| [day=3] \* [status=c] | 0 | . | . | . | . | . | . |
| [day=2] \* [status=p] | -.952 | .5551 | -2.040 | .136 | 2.940 | 1 | .086 |
| [day=2] \* [status=c] | 0 | . | . | . | . | . | . |
| [day=1] \* [status=p] | 0 | . | . | . | . | . | . |
| [day=1] \* [status=c] | 0 | . | . | . | . | . | . |
| (Scale) | 17.969 |  |  |  |  |  |  |

□Day 2:Healthy subjects vs Patients

Z=(β4+β24)/ √se(β4)2+se(β24)2

=(-2.627+(-0.952))/ √0.31742+0.55512=-5.597

p-value=NORMSDIST(-5.597)=1.09E-08

□Day 3:Healthy subjects vs Patients

Z=(β4+β34)/ √se(β4)2+se(β34)2

=(-2.627+(-1.569))/ √0.31742+0.83482=-4.698

p-value=NORMSDIST(-4.698)=1.31E-06

□Patient:Day 1 vs Day 2

Z=(β2+β24)/ √se(β2)2+se(β24)2

=(0.095+(-0.952))/ √0.09992+0.55512=-1.518

p-value=NORMSDIST(-1.518)= 0.064

□Patient:Day 1 vs Day 3

Z=(β3+β34)/ √se(β3)2+se(β34)2

=(0.049+(-1.569))/ √0.11172+0.83482=-1.805

p-value=NORMSDIST(-1.805)= 0.036

□Patient:Day 2 vs Day 3

Z=〔 (β2+β24)- (β3+β34) 〕/ √〔 se(β2)+se(β24) 〕2+〔 se(β3)+se(β34) 〕2

=(0.095+(-0.952))-( 0.049+(-1.569))/ √(0.0999+0.5551)2+(0.1117+0.8348)2=0.576

p-value=2\*(1-NORMSDIST(0.576))= 0.564

□Healthy subjects:Day 2 vs Day 3

Z=(β2-β3)/ √se(β2)2+se(β3)2

=0.095- 0.049/ √0.09992+0.11172=0.310

p-value=2\*(1-NORMSDIST(0.310))= 0.756

|  |  |  |  |
| --- | --- | --- | --- |
| StO2 | | p-value | Z |
| group difference at | Day 1 | <0.001 |  |
| Day 2 | <0.001 | -5.597 |
| Day 3 | <0.001 | -4.698 |
| Patients | Day 1 vs Day 2 | 0.064 | -1.518 |
| Day 1 vs Day 3 | 0.036 | -1.805 |
| Day 2 vs Day 3 | 0.564 | 0.576 |
| Healthy subjects | Day 1 vs Day 2 | 0.339 |  |
| Day 1 vs Day 3 | 0.661 |  |
| Day 2 vs Day 3 | 0.756 | 0.310 |
| Patient vs Healthy subjects | | <0.001 |  |

***[H2O]***

|  |  |  |  |
| --- | --- | --- | --- |
| **Tests of Model Effects** | | | |
| Source | Type III | | |
| Wald Chi-Square | df | Sig. |
| (Intercept) | 1671.482 | 1 | .000 |
| day | .320 | 2 | .852 |
| status | 50.289 | 1 | .000 |
| day \* status | .313 | 2 | .855 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter Estimates** | | | | | | | |
| Parameter | B | Std. Error | 95% Wald Confidence Interval | | Hypothesis Test | | |
| Lower | Upper | Wald Chi-Square | df | Sig. |
| (Intercept) | 7.404 | .3398 | 6.738 | 8.070 | 474.915 | 1 | .000 |
| [day=3] | .084 | .1855 | -.279 | .448 | .206 | 1 | .650 |
| [day=2] | .197 | .2528 | -.299 | .692 | .606 | 1 | .436 |
| [day=1] | 0 | . | . | . | . | . | . |
| [status=p] | 3.167 | .5107 | 2.166 | 4.168 | 38.460 | 1 | .000 |
| [status=c] | 0 | . | . | . | . | . | . |
| [day=3] \* [status=p] | .095 | .5211 | -.926 | 1.116 | .033 | 1 | .855 |
| [day=3] \* [status=c] | 0 | . | . | . | . | . | . |
| [day=2] \* [status=p] | -.157 | .4756 | -1.089 | .775 | .108 | 1 | .742 |
| [day=2] \* [status=c] | 0 | . | . | . | . | . | . |
| [day=1] \* [status=p] | 0 | . | . | . | . | . | . |
| [day=1] \* [status=c] | 0 | . | . | . | . | . | . |
| (Scale) | 9.230 |  |  |  |  |  |  |

□Day 2:Healthy subjects vs Patients

Z=(β4+β24)/ √se(β4)2+se(β24)2

=(3.167+(-0.157))/ √0.51072+0.47562=4.314

p-value=2\*(1-NORMSDIST(4.314))=1.60E-05

□Day 3:Healthy subjects vs Patients

Z=(β4+β34)/ √se(β4)2+se(β34)2

=(3.167+0.095)/ √0. 51072+0.52112=4.471

p-value=2\*(1-NORMSDIST(4.471))=7.78E-06

□Patient:Day 1 vs Day 2

Z=(β2+β24)/ √se(β2)2+se(β24)2

=(0.197+(-0.157))/ √0.25282+0. 47562=0.074

p-value=2\*(1-NORMSDIST(0.074))= 0.941

□Patient:Day 1 vs Day 3

Z=(β3+β34)/ √se(β3)2+se(β34)2

=(0.084+0.095)/ √0.18552+0. 52112=0.324

p-value=2\*(1-NORMSDIST(0.324))= 0.746

□Patient:Day 2 vs Day 3

Z=〔 (β2+β24)- (β3+β34) 〕/ √〔 se(β2)+se(β24) 〕2+〔 se(β3)+se(β34) 〕2

=(0.197+(-0.157))-( 0.084+0.095)/ √(0.2528+0. 4756)2+(0.1855+0.5211)2= -0.137

p-value=NORMSDIST(-0.137)= 0.446

□Healthy subjects:Day 2 vs Day 3

Z=(β2-β3)/ √se(β2)2+se(β3)2

=(0.197-0.084)/ √0. 25282+0. 18552=0.359

p-value=2\*(1-NORMSDIST(0.359))= 0.719

|  |  |  |  |
| --- | --- | --- | --- |
| H2O | | p-value | Z |
| group difference at | Day 1 | <0.001 |  |
| Day 2 | <0.001 | 4.314 |
| Day 3 | <0.001 | 4.471 |
| Patients | Day 1 vs Day 2 | 0.941 | 0.074 |
| Day 1 vs Day 3 | 0.746 | 0.324 |
| Day 2 vs Day 3 | 0.446 | -0.137 |
| Healthy subjects | Day 1 vs Day 2 | 0.436 |  |
| Day 1 vs Day 3 | 0.650 |  |
| Day 2 vs Day 3 | 0.719 | 0.359 |
| Patient vs Healthy subjects | | <0.001 |  |

**Detailed analyses and results for Table 3 and Figure 4**

**Day 1**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Correlations** | | | | | | |
|  | | HbO2 | HbR | HbT | StO2 | H2O |
| HbO2 | Pearson Correlation | 1 | .304\*\* | .721\*\* | .454\*\* | -.510\*\* |
| Sig. (2-tailed) |  | .007 | .000 | .000 | .000 |
| N | 77 | 77 | 77 | 77 | 77 |
| HbR | Pearson Correlation | .304\*\* | 1 | .880\*\* | -.709\*\* | .044 |
| Sig. (2-tailed) | .007 |  | .000 | .000 | .705 |
| N | 77 | 77 | 77 | 77 | 77 |
| HbT | Pearson Correlation | .721\*\* | .880\*\* | 1 | -.289\* | -.223 |
| Sig. (2-tailed) | .000 | .000 |  | .011 | .052 |
| N | 77 | 77 | 77 | 77 | 77 |
| StO2 | Pearson Correlation | .454\*\* | -.709\*\* | -.289\* | 1 | -.423\*\* |
| Sig. (2-tailed) | .000 | .000 | .011 |  | .000 |
| N | 77 | 77 | 77 | 77 | 77 |
| H2O | Pearson Correlation | -.510\*\* | .044 | -.223 | -.423\*\* | 1 |
| Sig. (2-tailed) | .000 | .705 | .052 | .000 |  |
| N | 77 | 77 | 77 | 77 | 77 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | | | | |
| \*. Correlation is significant at the 0.05 level (2-tailed). | | | | | | |

**Day 2**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Correlations** | | | | | | |
|  | | HbO2 | HbR | HbT | StO2 | H2O |
| HbO2 | Pearson Correlation | 1 | -.654\*\* | .017 | .879\*\* | -.528\*\* |
| Sig. (2-tailed) |  | .000 | .883 | .000 | .000 |
| N | 75 | 75 | 75 | 75 | 75 |
| HbR | Pearson Correlation | -.654\*\* | 1 | .745\*\* | -.934\*\* | .288\* |
| Sig. (2-tailed) | .000 |  | .000 | .000 | .012 |
| N | 75 | 75 | 75 | 75 | 75 |
| HbT | Pearson Correlation | .017 | .745\*\* | 1 | -.460\*\* | -.084 |
| Sig. (2-tailed) | .883 | .000 |  | .000 | .472 |
| N | 75 | 75 | 75 | 75 | 75 |
| StO2 | Pearson Correlation | .879\*\* | -.934\*\* | -.460\*\* | 1 | -.436\*\* |
| Sig. (2-tailed) | .000 | .000 | .000 |  | .000 |
| N | 75 | 75 | 75 | 75 | 75 |
| H2O | Pearson Correlation | -.528\*\* | .288\* | -.084 | -.436\*\* | 1 |
| Sig. (2-tailed) | .000 | .012 | .472 | .000 |  |
| N | 75 | 75 | 75 | 75 | 75 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | | | | |
| \*. Correlation is significant at the 0.05 level (2-tailed). | | | | | | |

**Day 3**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Correlations** | | | | | | |
|  | | HbO2 | HbR | HbT | StO2 | H2O |
| HbO2 | Pearson Correlation | 1 | -.815\*\* | -.332\*\* | .933\*\* | -.665\*\* |
| Sig. (2-tailed) |  | .000 | .007 | .000 | .000 |
| N | 64 | 64 | 64 | 64 | 64 |
| HbR | Pearson Correlation | -.815\*\* | 1 | .818\*\* | -.968\*\* | .539\*\* |
| Sig. (2-tailed) | .000 |  | .000 | .000 | .000 |
| N | 64 | 64 | 64 | 64 | 64 |
| HbT | Pearson Correlation | -.332\*\* | .818\*\* | 1 | -.647\*\* | .217 |
| Sig. (2-tailed) | .007 | .000 |  | .000 | .085 |
| N | 64 | 64 | 64 | 64 | 64 |
| StO2 | Pearson Correlation | .933\*\* | -.968\*\* | -.647\*\* | 1 | -.629\*\* |
| Sig. (2-tailed) | .000 | .000 | .000 |  | .000 |
| N | 64 | 64 | 64 | 64 | 64 |
| H2O | Pearson Correlation | -.665\*\* | .539\*\* | .217 | -.629\*\* | 1 |
| Sig. (2-tailed) | .000 | .000 | .085 | .000 |  |
| N | 64 | 64 | 64 | 64 | 64 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed).  \*. Correlation is significant at the 0.05 level (2-tailed). | | | | | | |

**Detailed analyses and results for Table 4 and Figure 5**

Concerning the associations of systemic haemodynamics with regional tissue oxygenation and H2O content in patients with severe sepsis, we analysed the correlations between real-time arterial blood pressures and NIRS parameters in the patients who also received pulse contour cardiac output (PiCCO) monitoring. A total of 21 patients were monitored by PiCCO. One of them began to be monitored from day 2 and six had stopped the monitoring on day 3 after participating in the study.

**Day 1**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Correlations** | | | | | | |
|  | | HbO2 | HbR | HbT | StO2 | H2O |
| Systolic arterial pressure | Pearson Correlation | -.148 | .225 | .109 | -.301 | .508\* |
| Sig. (2-tailed) | .534 | .340 | .646 | .198 | .022 |
| N | 20 | 20 | 20 | 20 | 20 |
| Diastolic arterial pressure | Pearson Correlation | .089 | .248 | .240 | -.156 | .386 |
| Sig. (2-tailed) | .709 | .292 | .308 | .510 | .092 |
| N | 20 | 20 | 20 | 20 | 20 |
| Mean arterial pressure | Pearson Correlation | -.055 | .194 | .129 | -.202 | .451\* |
| Sig. (2-tailed) | .817 | .412 | .588 | .394 | .046 |
| N | 20 | 20 | 20 | 20 | 20 |
| \*. Correlation is significant at the 0.05 level (2-tailed). | | | | | | |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | | | | |

**Day 2**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Correlations** | | | | | | |
|  | | HbO2 | HbR | HbT | StO2 | H2O |
| Systolic arterial pressure | Pearson Correlation | -.388 | -.185 | -.288 | -.056 | .359 |
| Sig. (2-tailed) | .082 | .423 | .206 | .809 | .111 |
| N | 21 | 21 | 21 | 21 | 21 |
| Diastolic arterial pressure | Pearson Correlation | -.254 | -.134 | -.198 | -.001 | .200 |
| Sig. (2-tailed) | .266 | .561 | .389 | .996 | .385 |
| N | 21 | 21 | 21 | 21 | 21 |
| Mean arterial pressure | Pearson Correlation | -.349 | -.150 | -.247 | -.064 | .307 |
| Sig. (2-tailed) | .121 | .518 | .281 | .782 | .176 |
| N | 21 | 21 | 21 | 21 | 21 |
| \*. Correlation is significant at the 0.05 level (2-tailed). | | | | | | |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | | | | |

**Day 3**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Correlations** | | | | | | |
|  | | HbO2 | HbR | HbT | StO2 | H2O |
| Systolic arterial pressure | Pearson Correlation | -.106 | .176 | .178 | -.149 | .088 |
| Sig. (2-tailed) | .708 | .531 | .526 | .597 | .755 |
| N | 15 | 15 | 15 | 15 | 15 |
| Diastolic arterial pressure | Pearson Correlation | -.367 | .334 | .220 | -.348 | .289 |
| Sig. (2-tailed) | .179 | .223 | .430 | .203 | .297 |
| N | 15 | 15 | 15 | 15 | 15 |
| Mean arterial pressure | Pearson Correlation | -.256 | .302 | .252 | -.287 | .223 |
| Sig. (2-tailed) | .357 | .275 | .365 | .300 | .424 |
| N | 15 | 15 | 15 | 15 | 15 |
| \*. Correlation is significant at the 0.05 level (2-tailed). | | | | | | |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | | | | |