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Breathe Better Live Better

Report on O2Gold Study_

A paired t-test was done on the pre/post tests run on 19 Sept for the variables O2Hb, PO2, PCO2, ctHb, CoGb, and MetHb to investigate whether there was an short-term effect on the variables. The results are summarized in Table 1

Table 1

Variable	t6	P
02HB	0.574	0.5865
PO2	-0.255	0.8069
PCO2	1.348	0.2263
CtHb	0.925	0.3907
COHb	-2.025	0.0893
MetHb	-0.584	0.6036

The variable COHb shows a significant result at a 10% level of significance (t6 = -2.025, P=0.0893).

A repeated measured analysis was then performed on the pre reading taken on 19 September, the reading on 6 October and 20 October to investigate whether there is any change in the means across time. The results are summarised in Table 2.

Table 2

Variable	Wilks'lambda	F2.5	P
02HB	0.3056	5.68	0.0516
PO2	0.7127	1.01	0.4289
PCO2	0.6327	1.45	0.3184
CtHb	0.7182	0.98	0.4372
COHb	0.5768	1.83	0.2527
MetHb	0.5714	1.88	0.2468
CD3	0.1766	11.66	0.0131
CD4	0.0913	24.89	0.0025

CD8	0.6813	1.17	0.3831

From the table it is evident that the CD3 and CD4 counts show a significant difference in means across the 3 time periods at a 5% level of significance.Furthermore the variable O2Hb is almost as significant at the 5% level giving an indication that there is a significant change in the means across time.

Comment on missing data aspect

- Combined all nine variables taken at the various times, across all seven observational units into 1 data set (consisting of 33 recorded variables)
- The Data Augmentation (DA) Algorithm (Tanner & Wong 1987) was then run using PROC MI (SAS Version 8.2), by utilizing starting values obtained from the Expectation-Maximisation (EM) Algorithm (Dempster, Laird & Rubin 1977), once the DA algorithm had converged, five `complete' data sets were formed by imputing values, via Multiple Imputation, for the missing data values
- PROC GLM was then used on each complete data set, on each different variable, across all time readings, to determine whether there were any significant differences between the means at the different times.

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26/11/2003

References

Dempster, A.P., Laird, N.M. & Rubin, D.B. 1977, `Maximum likelihood from incomplete data via the EM algorithm (with discussion)'. Journal of the Royal Statistical Society B, 39, pp.1-38.
Rubin, D.B. 1987, Multiple imputation for nonresponse in surveys, John Wiley & Sons, New York.

Tanner, M.A. & Wong, W.H. 1987, `The calculation of posterior distributions by data augmentation (with discussion)', Journal of the American Statistical Association, 82, pp.528-550.

Analysis done by Mrs Fay Hosking and Dr GB Matthews, University of Natal.

Thus it can be seen that all benefits are directly attributable the the almost 5% increase in blood oxygen levels