Cerebral oxygenation manuscript figures

2022-11-15

Table 1. Baseline clinical characteristics

Table 1a. All clinical data **Table 1a.** A summary of subject information and hematological data. Group patient data presented as median (quartile 1, quartile 3).

Table 1b. CM-specific data **Table 1b.** CM-specific clinical characteristics

Fig 1. Hb_oxy and Hb_tot in the brain and muscle

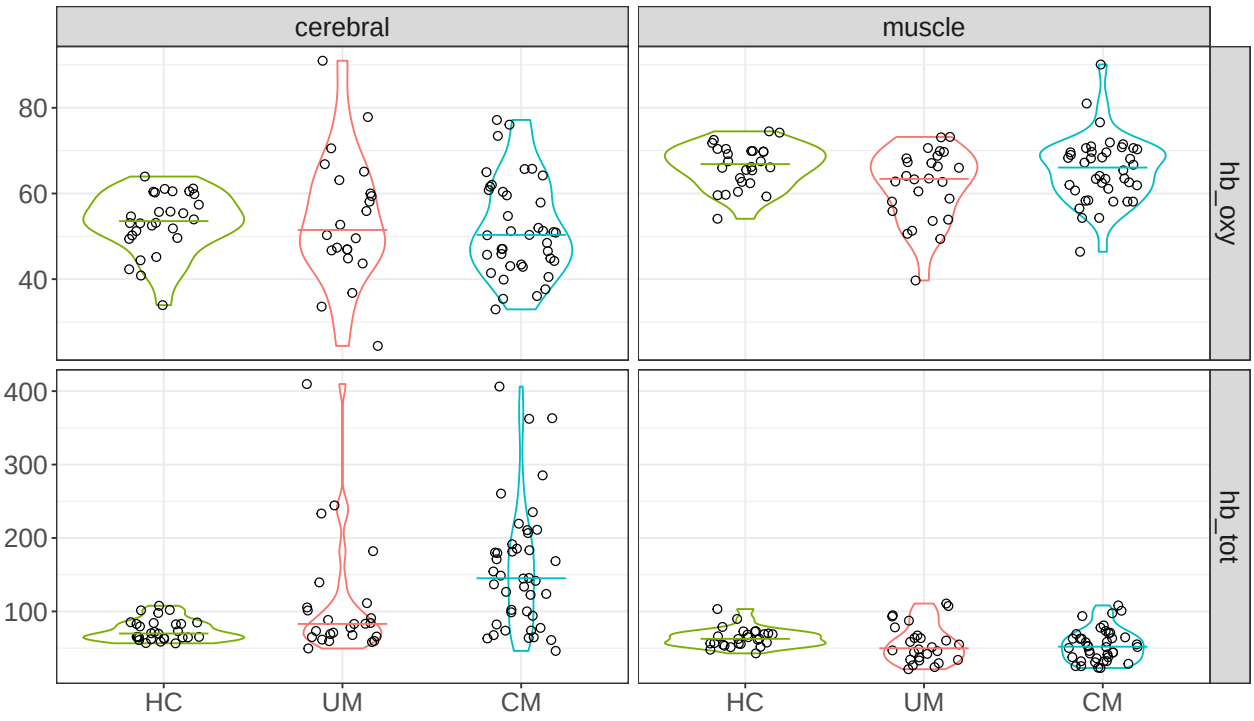


Fig 2. Hb_oxy alpha and Hb_tot alpha in the brain and muscle

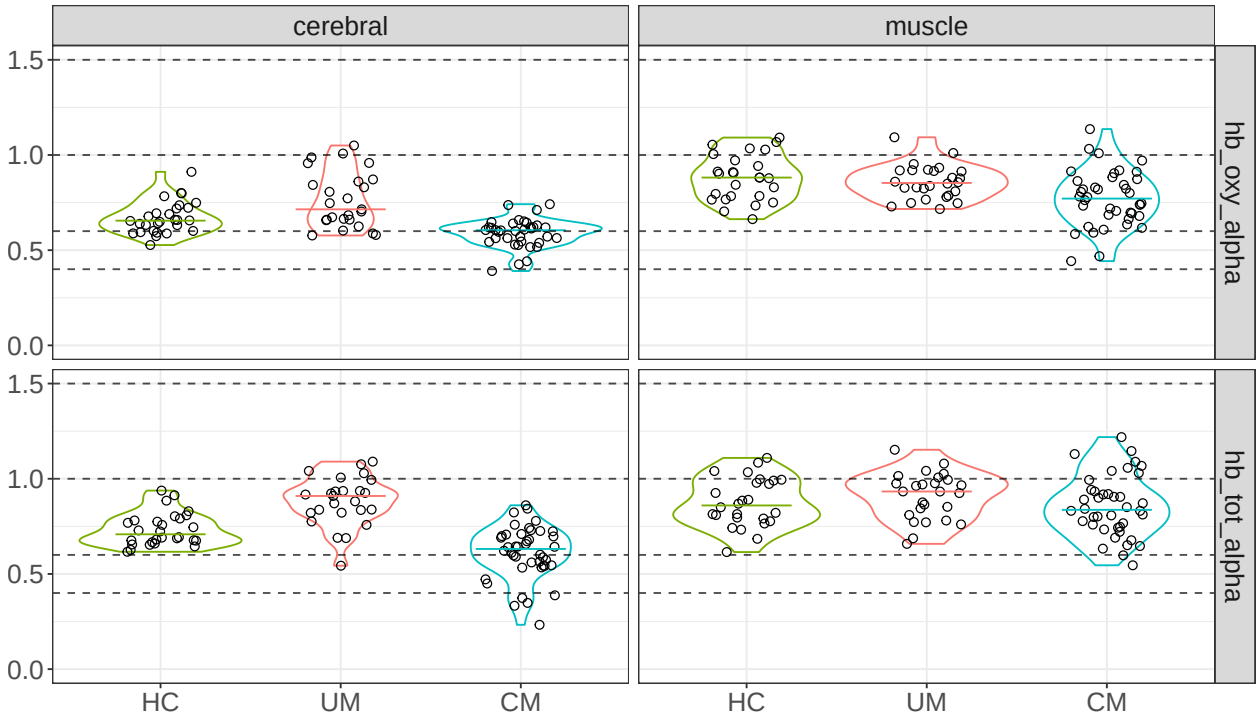
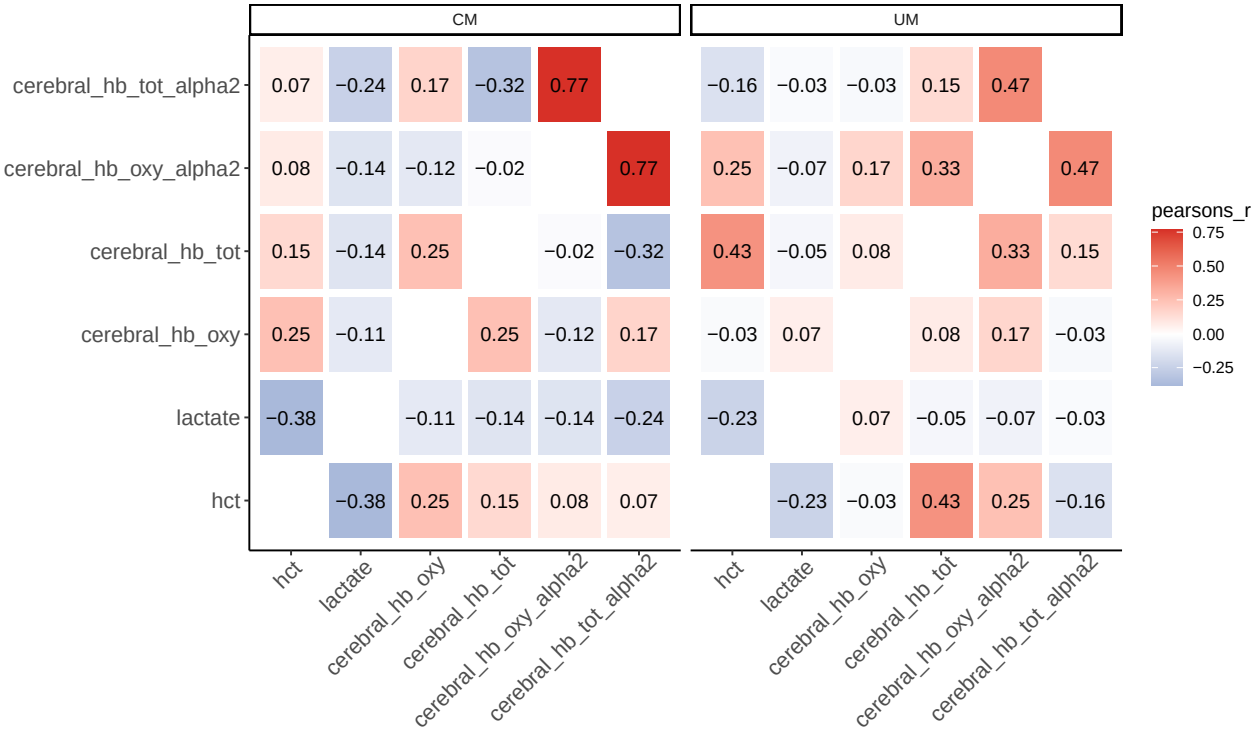


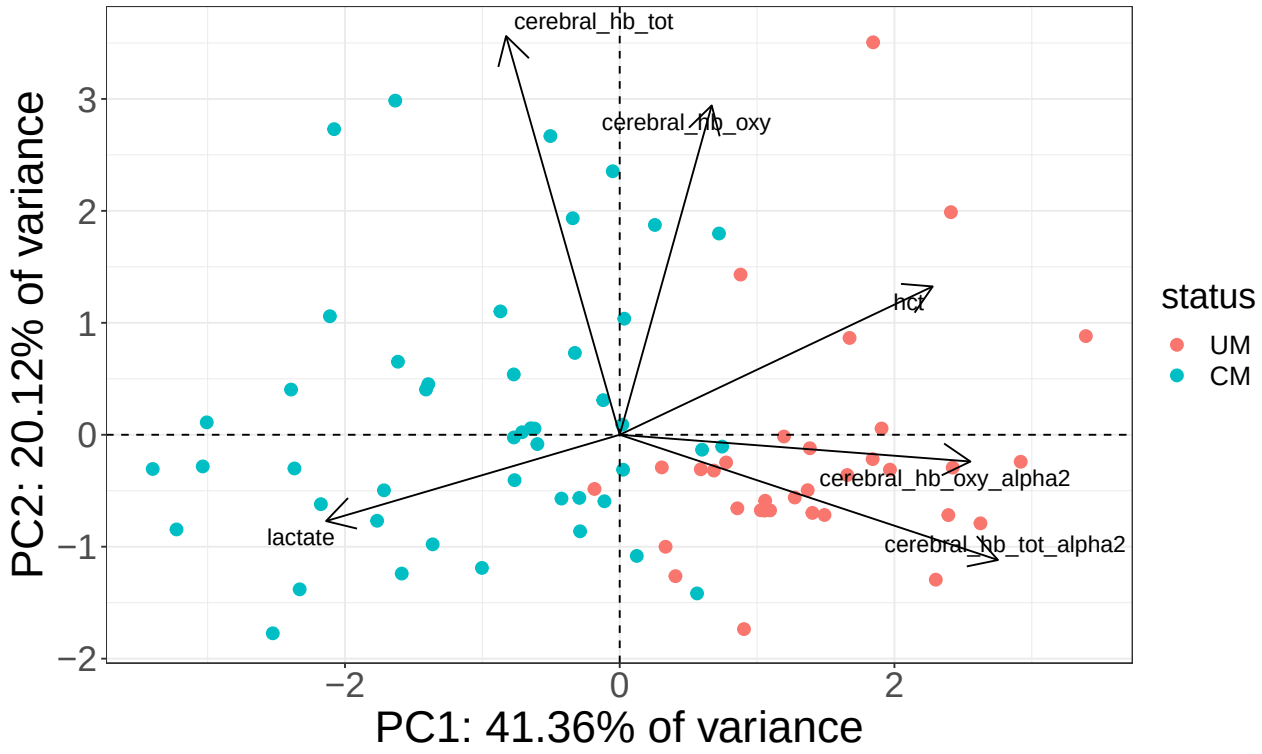
Fig 3. Increased cerebral_hb_tot and decreased cerebral_hb_tot_alpha are distinct clinical features of cerebral malaria

A. Correlations of variables within subject groups



In the CM group (n = 46), absolute correlation values greater 0.32 are statistically significant at a threshold of $p < 0.05$. In the UM group (n = 36), absolute correlation values greater than the absolute value of 0.43 are statistically significant.

B. Principal component analysis

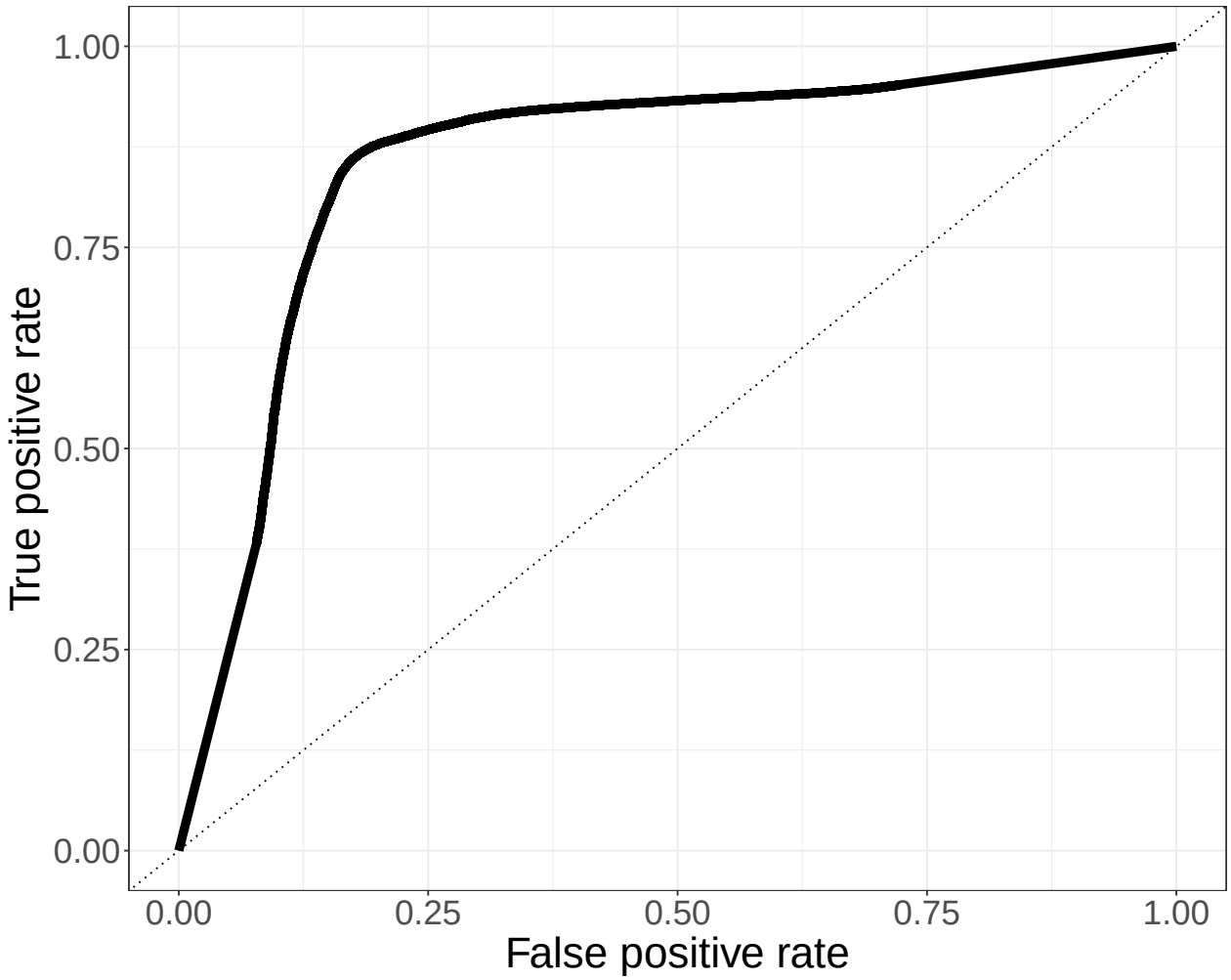


C. Coefficients

Term	Odds ratio	95% CI	t-statistic	p-value
hct	35.10	3.93, 1380.32	2.51	1.21e-02
cerebral_hb_tot	0.11	0.01, 0.56	-2.43	1.49e-02
one_tenth_cerebral_hb_tot_alpha	21.18	2.82, 474.27	2.44	1.48e-02

**note: for the OR, denominator is probability of patient having CM; numerator is p patient having UM

D. ROC curve of final model



Metric	Mean	Standard error
Accuracy	85.02	0.10
ROC AUC	89.96	0.12
Sensitivity	87.69	0.13
Specificity	80.68	0.21

Fig 4. An increase in cerebral_hb_tot is significantly associated with an increase in brain swelling score

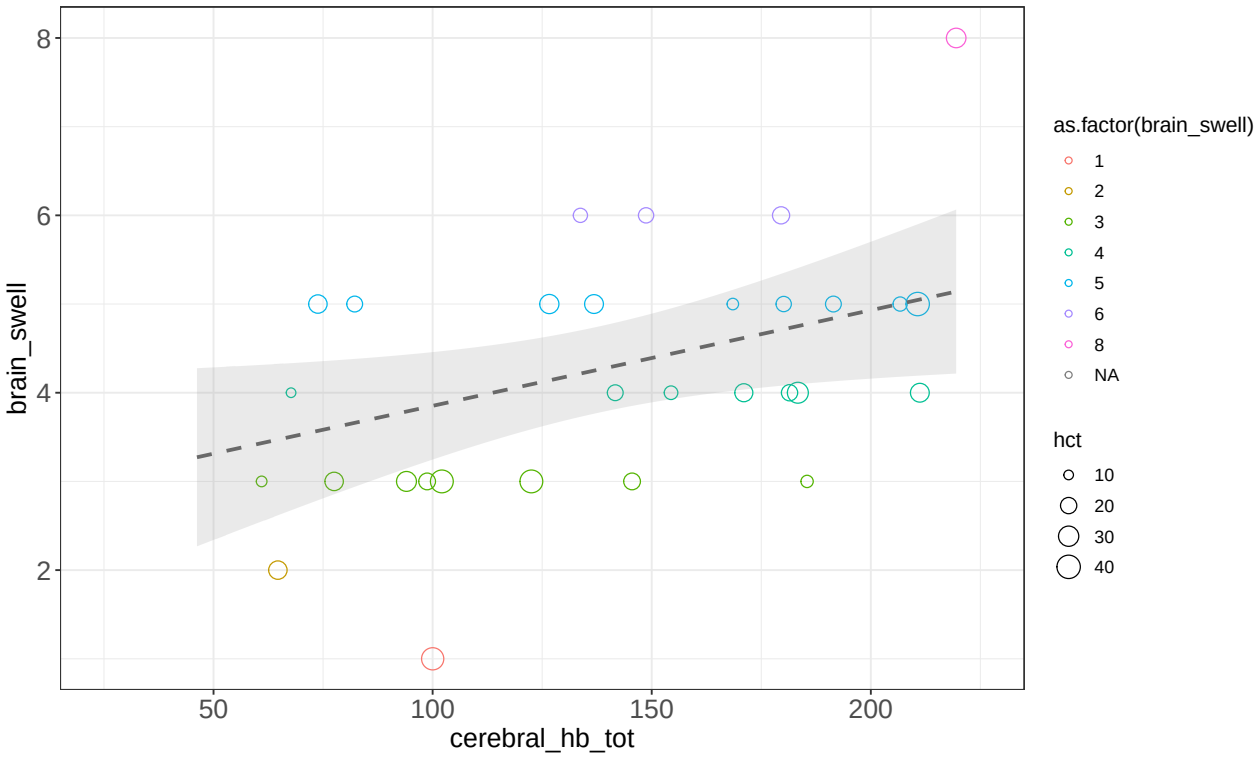


Figure 4. model: brain_swell ~ cerebral_hb_tot + hematocrit; adjusted R^2: 0.25; model p-value: 0.007; cerebral_hb_tot p-value: 0.003

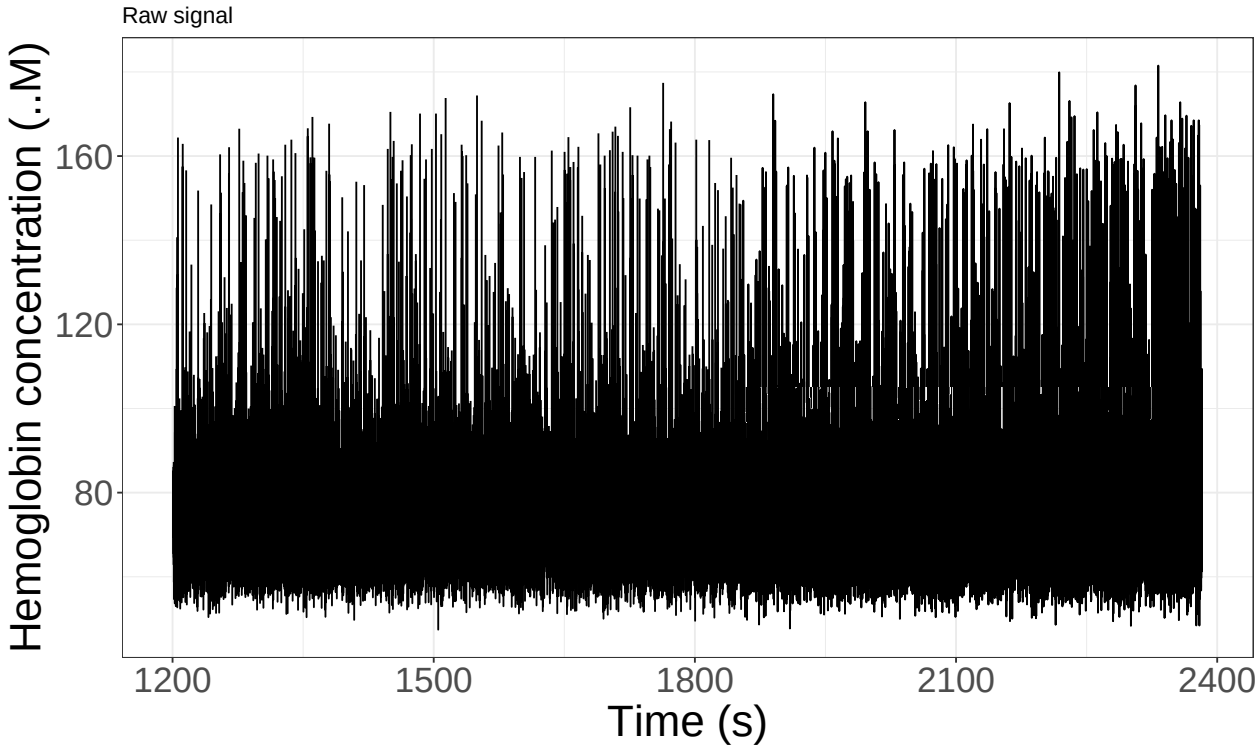
Fig 5. Explanatory model of how to interpret hemoglobin concentration

See manuscript draft (figure created in PowerPoint)

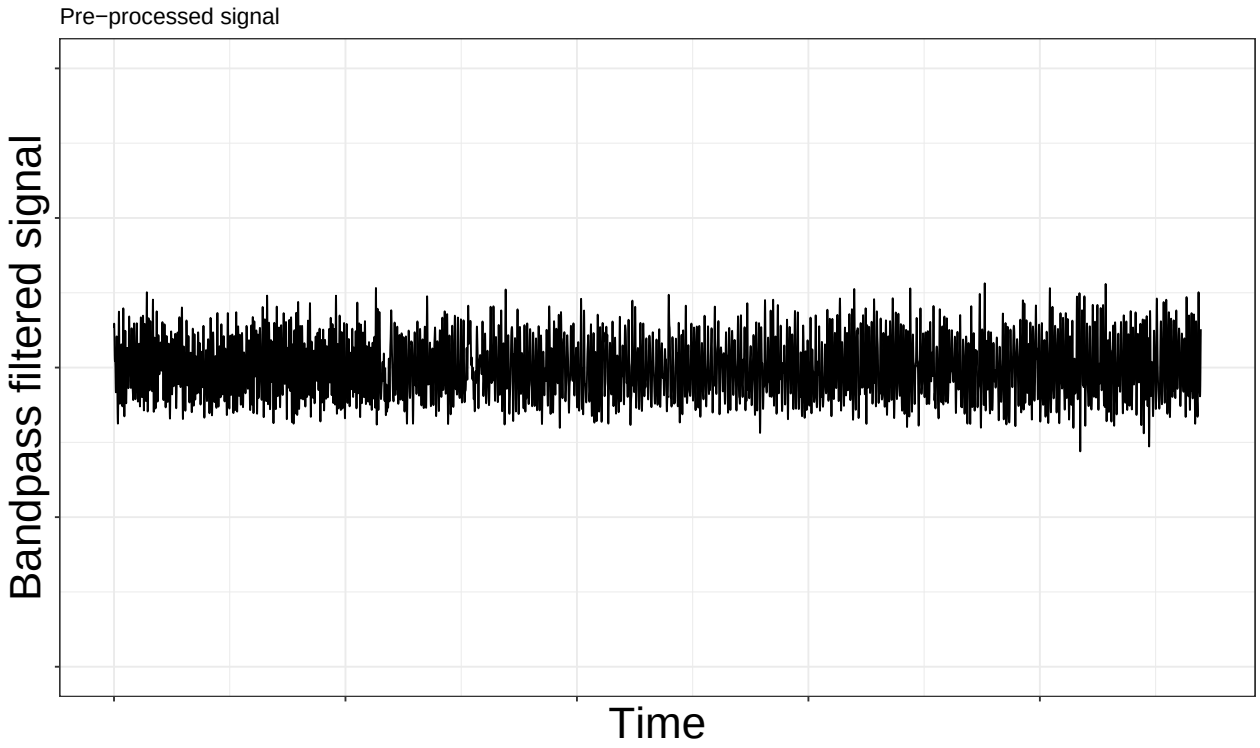
Supplement

SFig 1. DFA analysis illustration

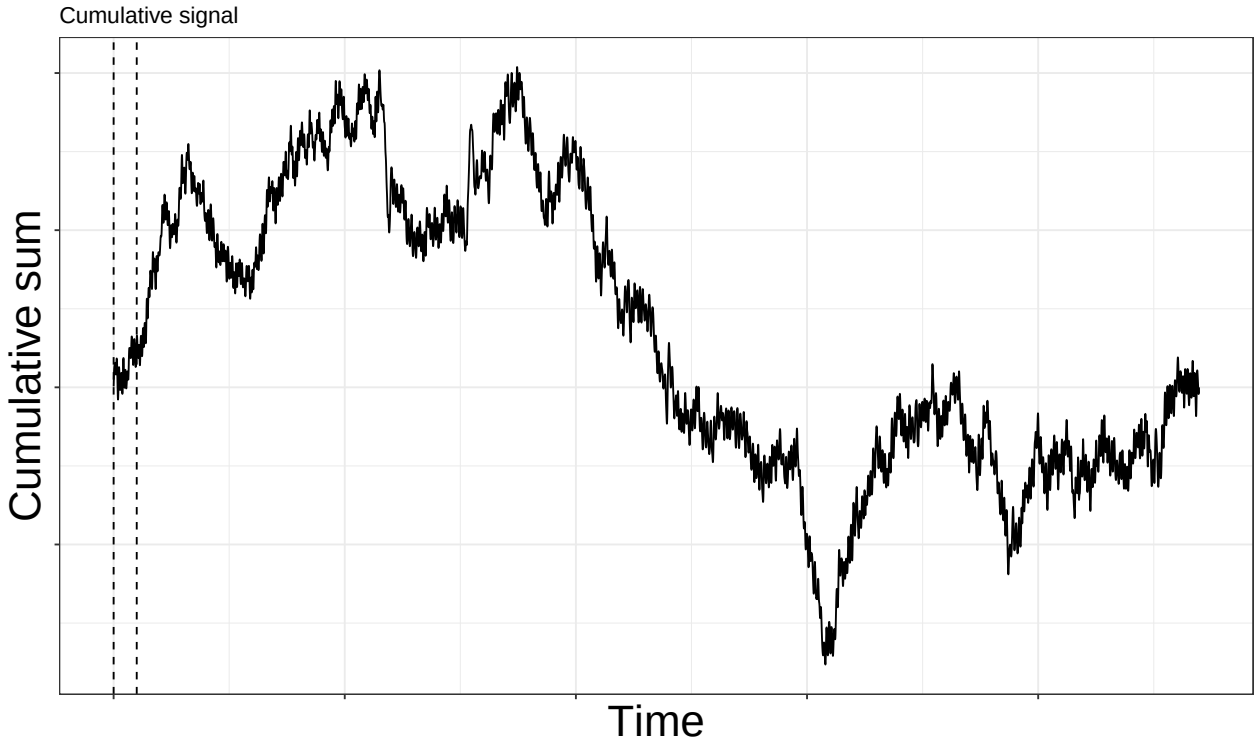
A. Raw signal



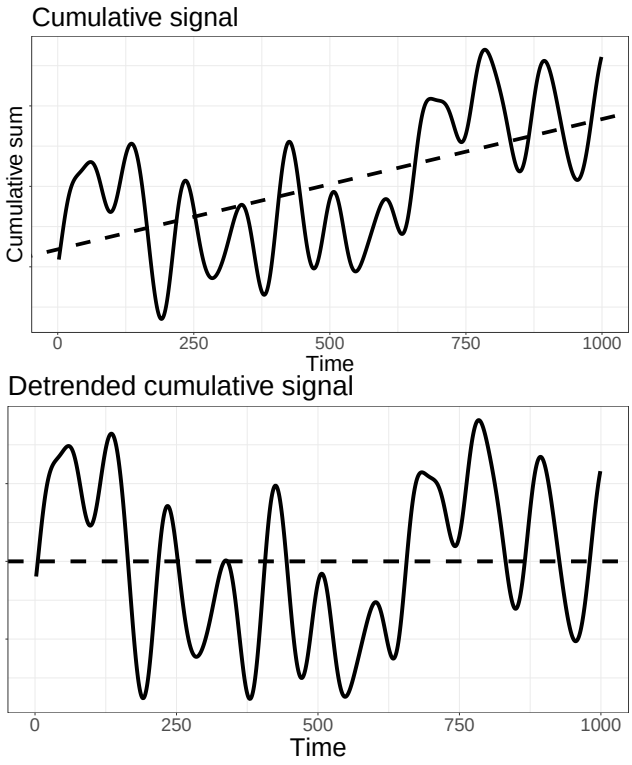
B. Processed signal



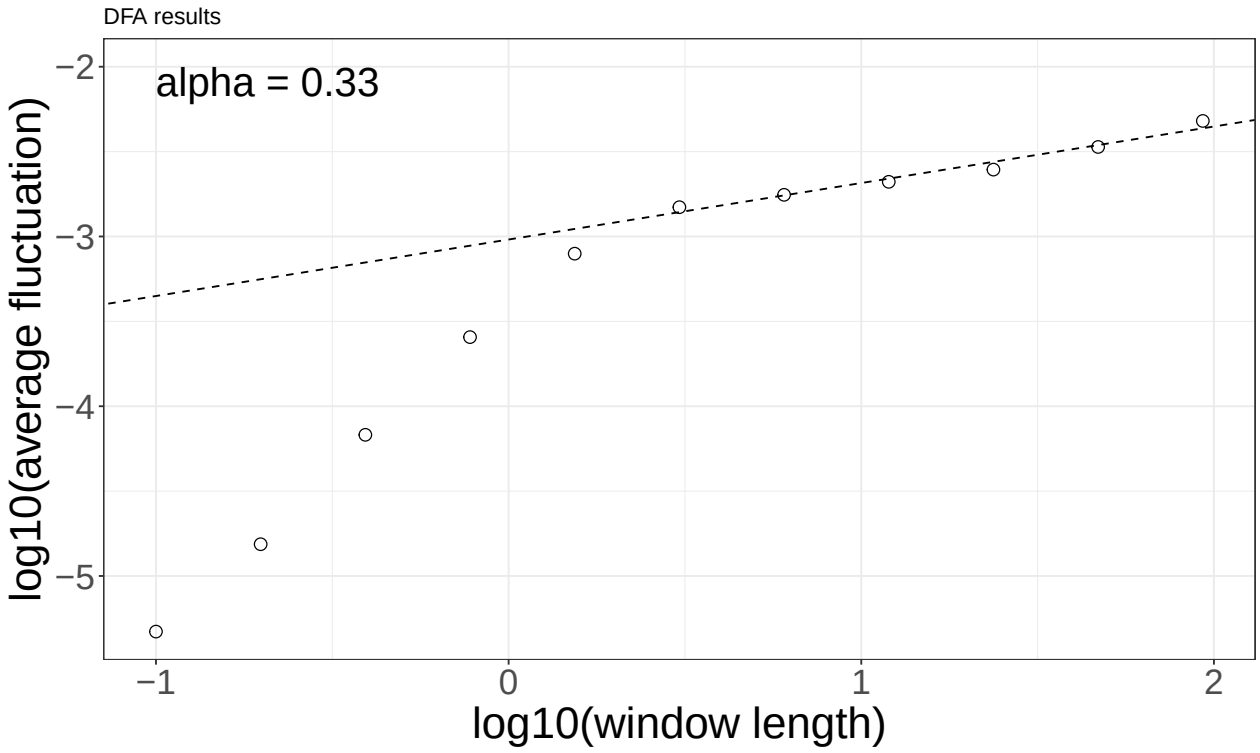
C. Cumulative sum



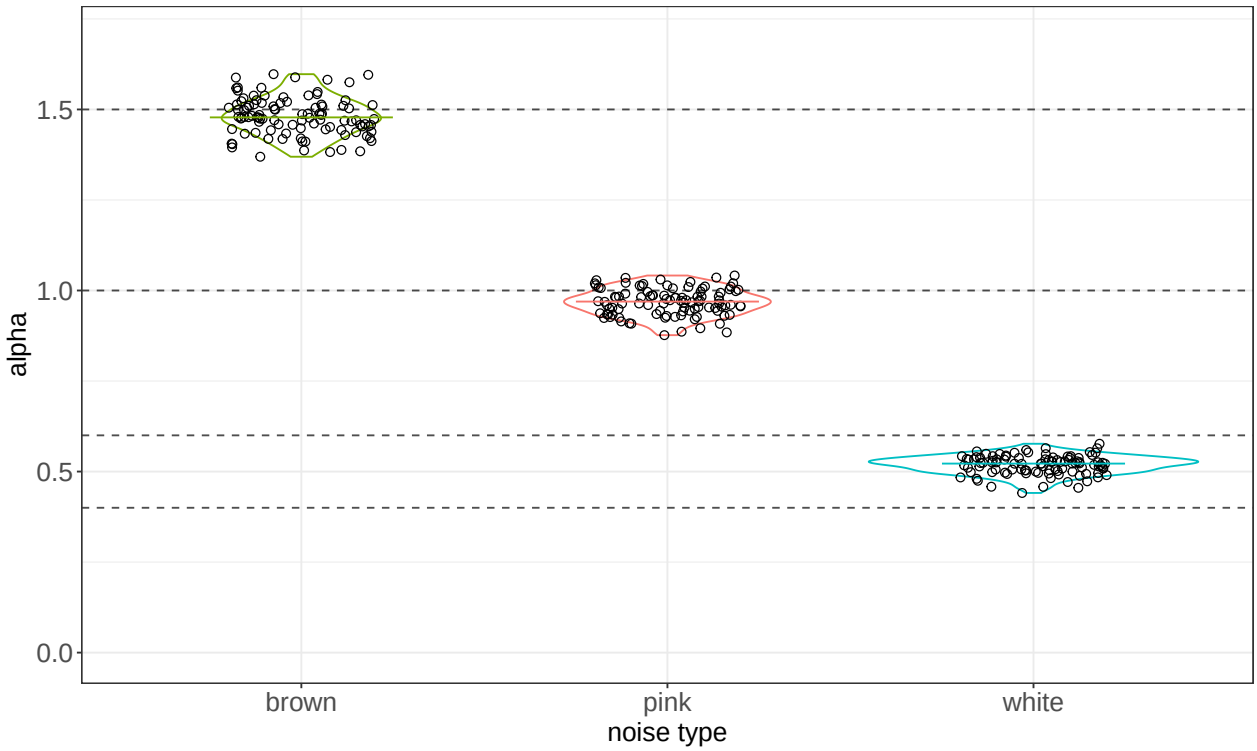
D. Window detrend



E. Results plot



F. Simulation results



SFig 2. Logistic regression curves

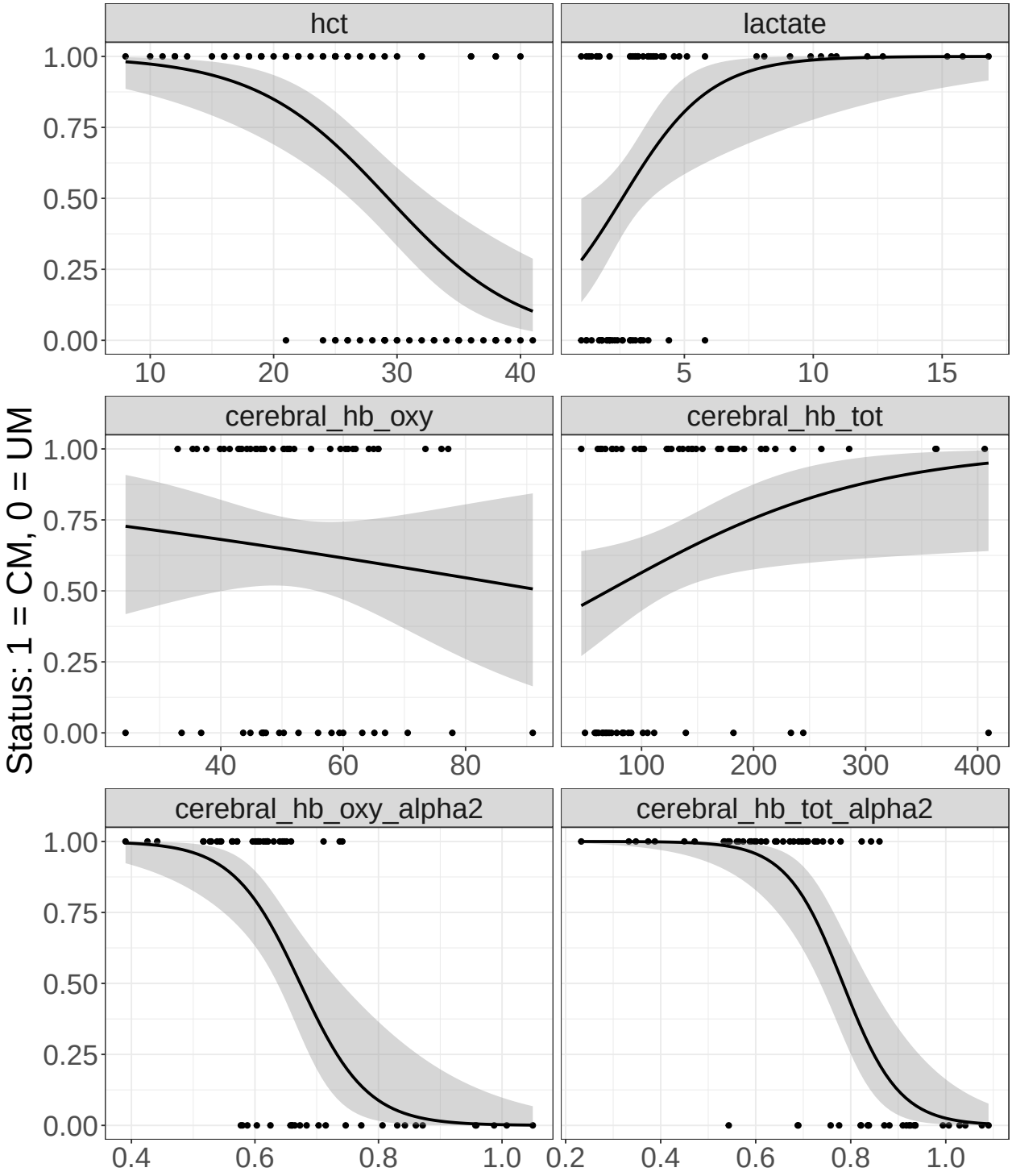


Figure S2. Plotted are the individual logistic regression curves of individual variables tested for their discriminatory power between UM and CM. On the y-axis, 1 represents CM while 0 represents UM. A steeper curve indicates higher discriminatory power.

Table of manuscript p-values