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Statistical Summary Document

Manuscript Title: Intracranial pressure modulates aqueous humor dynamics of the eye

Authors: Kayla R. Ficarrotta and Christopher L. Passaglia

Animal model used, if applicable: Retired-breeder Brown-Norway rat

Underlying hypothesis: The objective of this research was to test the hypothesis that IOP and ICP are physiologically connected and elucidate the mechanism underlying their putative relationship.

Definitions of 'n':

Questions 1-3: n = number of animals from which IOP was held at different levels to measure C at resting ICP and at ICP elevated by 15mmHg
Question 4: n = subset number of animals from which IOP, ICP, and MAP were simultaneously recorded
Question 5: n = subset number of animals from which outflow facility data were obtained at resting ICP, elevated ICP, and again at resting ICP
Question 6: n = subset number of animals from which outflow facility data were obtained at resting ICP and elevated ICP after animal euthanasia
Question 7: n = subset number of animals from which outflow facility data were obtained at resting ICP and elevated ICP after corneal application of TTX
Question 8: n = number of animals from which outflow facility data were obtained at resting ICP after corneal application of TTX

Statistical summary table:

Experimental question number*	Finding/ conclusion	Experiment location/ variable	Mean value	SD	n	P**	Units	Data comparisons	Statistical test	Any other variable	Figure/ table	Comments
1. Effect of high IOP on ICP?	ICP unaltered	ΔICP	1.1	1.7	18	0.07	mmHg	resting v. max IOP	Students' t test, paired		2	passed normality test
2. Effect of high ICP on IOP?	IOP increased	ΔIOP	3.0	1.9	18	**<0.001**	mmHg	resting ICP v. 15mmHg ICP elevation	Students' t test, paired		2	passed normality test
3. Effect of high ICP on C?	C decreased	C (rest) C (highICP)	22 13	4 3	18	**<0.001**	nl/min/ mmHg	resting ICP v. 15mmg ICP elevation	Students' t test, paired		3A	passed normality test

4. Effect of high IOP and high ICP on MAP?	MAP unaltered for both	ΔMAP	-0.3	0.7	7	0.27	mmHg	resting v. max IOP	Students' t test, paired		2	passed normality test
		ΔMAP	0.5	0.8		0.16	mmHg	resting ICP v. 15mmg ICP elevation				
5. Is ICP effect reversible?	C returned to baseline	C (pre)	24	4	4	**<0.01**	nl/min/ mmHg	pre v. peri	1-way ANOVA, Tukey multiple paired comparison		3B	passed normality test
		C (peri)	14	1		**<0.01**		peri v. post				
		C (post)	25	4		0.90		pre v. post				
6. Does ICP effect persist after death?	C returned to baseline	C (rest)	22	3	10	**<0.001**	nl/min/ mmHg	rest v. high	1-way ANOVA, Tukey multiple paired comparison		4	passed normality test
		C (highICP)	13	3		**<0.001**		high v. dead				
		C (highICP +dead)	19	4		0.07		rest v. dead				
7. Effect of ICP blocked by TTX?	C and IOP returned to baseline	C (rest)	23	2	4	**0.01**	nl/min/ mmHg	rest v. high	1-way ANOVA, Tukey multiple paired comparison		5	passed normality test
		C (highICP)	13	3		**0.03**		high v. TTX				
		C (highICP +TTX)	21	6		0.63		rest v. TTX				
		ΔIOP (highICP)	2.5	2.0		**0.03**	mmHg	ΔIOP pre- v. post-TTX	Students' t test, paired		5	passed normality test
		ΔIOP (highICP +TTX)	-0.1	1.2								
8. Effect of TTX on C and IOP?	C and IOP unaltered	C (rest)	25	2	3	0.46	nl/min/ mmHg	C before v. after TTX	Students' t test, paired		5	passed normality test
		C (rest +TTX)	24	3								
		ΔIOP	-0.6	1.1		0.47	mmHg	IOP pre- v. post-TTX				