



Poster Presentation

Investigating the Response to Anesthesia in a Zebrafish Model of CHARGE Syndrome

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Presenter Information

Jessica is a third year medical student at Dalhousie University and is working on a project investigating adverse events following anesthesia administration in individuals with CHARGE syndrome using a zebrafish animal model. Her research is supervised by Dr Kim Blake and Dr Jason Berman and is conducted in the Berman lab which has a zebrafish model of CHARGE syndrome. Jessica completed a Master's in Science before entering medical school, during which she conducted research in cardiovascular pharmacology. She is interested in both the clinical and research aspects of CHARGE syndrome, and has very much enjoyed modelling what has been seen clinically in the lab in hopes of furthering the understanding of the mechanisms of CHARGE.

Presentation Abstract

Background: Individuals with CHARGE syndrome experience adverse events during and following anesthesia. We examined the response to anesthesia in a zebrafish model of CHARGE (loss of *chd7* expression) to investigate causative factors. We used zebrafish retaining *chd7* expression as control.

Results: There was a difference in baseline heart rates between the CHARGE model of zebrafish (loss of expression) and the controls. Exposure of the CHARGE and control zebrafish to anesthesia revealed behavioural differences. We measured time to anesthesia and the CHARGE zebrafish took longer to become anesthetized and had a higher respiratory rate during the anesthetic recovery period compared with the control fish. Videos will demonstrate differences between CHARGE and control zebrafish.

Conclusion: We were able to demonstrate differences in response to anesthesia between CHARGE compared with control zebrafish. CHARGE zebrafish took longer to become anesthetized, which is consistent with what is seen clinically. During recovery, the CHARGE zebrafish had higher respiratory rates. Future work will investigate survival outcomes of CHARGE versus control zebrafish.