Intracranial hemorrhage is a debilitating form of stroke, often associated with mortality or irreversible neurological deficits. It is the second most common form of stroke, and there are no known cures. Nonetheless, the entire suite of molecular and physiological events in the brain during cerebral hemorrhage is still unexplored. Zebrafish (Danio rerio) have gained immense reputation as ideal organisms to elucidate the etiology and characterization of human diseases. By using a previously established model of spontaneous hemorrhage in developing zebrafish, the ensuing impacts of vessel rupture can be thoroughly examined. The biological activity in the brain after cerebral hemorrhage can be monitored using a variety of techniques, mainly an array of immunohistochemical stains. Present studies are geared towards assessment of the state of blood vessels, apoptosis in the brain, and proliferation of immune cells.

**Methodology**

Intracranial hemorrhage is induced by exposing the zebrafish embryos to 0.5 mg/L atorvastatin (ATV), a pharmacological inhibitor of the mevalonate pathway that works through inhibition of HMG CoA reductase enzyme. This consequently hinders endogenous cholesterol production, as well as the synthesis of compounds targeted to membranes, including those in blood vessels. Comparing the consequences of endogenous cholesterol inhibition in zebrafish exposed to 0.5 mg/L ATV to a control group not exposed to ATV will give a comparative library of the physiology of the brain post-cerebral hemorrhage.

**References**