INSIGHTS IN IMMUNOLOGY

Chick Embryo: A Preclinical Model for understanding ischemia reperfusion model

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Abstract

Ischemia-reperfusion (I/R)-related disorders, such as stroke, myocardial infarction, and peripheral vascular disease, are among the most frequent causes of disease and death. Tissue injury or death may result from the initial ischemic insult, primarily determined by the magnitude and duration of the interruption in blood supply and then by the subsequent reperfusion-induced damage. Various in vitro and in vivo models are currently available to study I/R mechanism in the brain and other tissues. However, thus far, no in ovo I/R model has been reported for understanding the I/R mechanisms and for faster drug screening. Here, we developed an in ovo Hook model of I/R by occluding and releasing the right vitelline artery of a chick embryo at 72 h of development. To validate the model and elucidate various underlying survival and death mechanisms, we employed imaging (Doppler blood flow imaging), biochemical, and blotting techniques and evaluated the cell death mechanism: autophagy and inflammation caused by I/R. In conclusion, the present model is useful in parallel with established in vitro and in vivo I/R models to understand the mechanisms of I/R development and its treatment.

Biography

Amit Kumar Shrivastava currently works as a assistant professor department of pharmacology, Universal College of Medical Sciences Amit does research in Pharmacy, Neurology and Clinical Pharmacology. Their current project is neuroinflammation.

Publications

1. *In-vitro* Antiviral Activity of Natural Products against Coronavirus Strains: A Systemic Review, August 2020,DOI: 10.21203/rs.3.rs-63691/v1
2. Distribution of Blood Groups in Medical Students: A Comparative Study, July 2020, Journal of Universal College of Medical Sciences 8(1):42-46, DOI: 10.3126/jucms.v8i1.29837
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