



## Special Issue on **Hemodynamics of Intracranial Aneurysms for Computational and Mathematical Methods in Medicine**

# CALL FOR PAPERS

Intracranial aneurysms are pathologic outpouchings of arterial walls. It is estimated that 3% of the general population harbor aneurysms. Aneurysm rupture is catastrophic and carries high rates of mortality and morbidity. Hemodynamics provides important clues about its role throughout intracranial aneurysm natural history. In the past decade, hemodynamics research has become more and more active. In spite of many achievements, there still remains a wide gap between our knowledge about the role of hemodynamics and its clinical application in aneurysm management.

In this special issue, we invite both engineering and clinical researchers to contribute original research as well as review articles that seek to address the role of hemodynamics in aneurysm initiation, growth, rupture, and treatment planning and its clinical application in aneurysm management. We are also interested in articles that explore advances in computational models as well as other novel mathematical approaches to simulate aneurysmal hemodynamics.

Potential topics include, but are not limited to:

- ▶ Hemodynamics in intracranial aneurysm rupture risk assessment
- ▶ Hemodynamics in aneurysm initiation, either clinical or animal studies
- ▶ Posttreatment hemodynamics alterations (coiling, stenting, flow diverting, clipping, etc.) using *in vivo*, *in vitro*, or *in silico* experiments
- ▶ Development of clinical tools for rupture risk assessment and/or treatment planning
- ▶ Development of numerical tools for coil and stent/flow diverter deployment
- ▶ Hemodynamics measurement using particle image velocimetry (PIV) and/or medical imaging techniques based on ultrasound, MRI, or angiographies
- ▶ Validation of computational aneurysmal hemodynamics using *in vitro* experiment and measurements such as PIV system
- ▶ Development of novel mathematical approaches to simulate aneurysmal flow
- ▶ Review articles on hemodynamics in aneurysm initiation, growth, rupture, and/or treatment planning

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/cmmm/hiac/>.

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