Università degli Studi di Pavia

Dipartimento di Ingegneria Civile e Architettura

in collaboration with

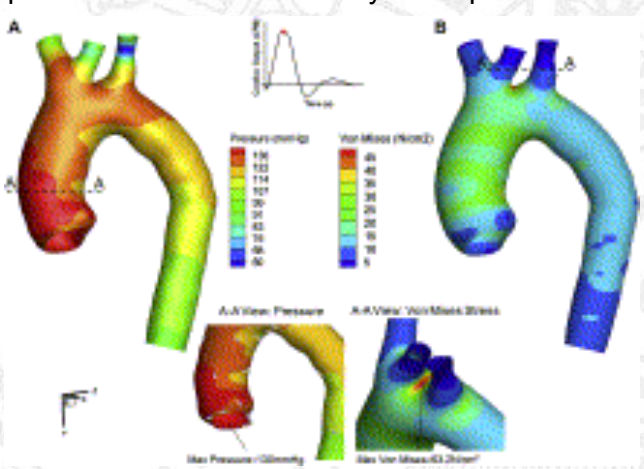
Centro di Simulazione Numerica Avanzata – CeSNA
Istituto Universitario di Studi Superiori

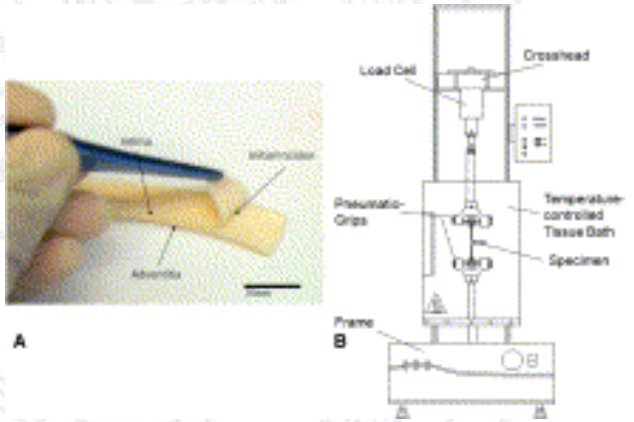
SEMINAR

Biomechanical Evaluation of Ascending Thoracic Aortic Aneurysms

Ascending thoracic aortic aneurysm (ATAA) is life-threatening cardiovascular emergency with high in-hospital and follow-up mortality. Indications for surgical treatment include large aortic diameter to avoid fatal rupture or dissection. However, ATAAs with smaller diameters than indicated by the surgical paradigm may rupture or dissect unpredictably, with an incidence of 0-23% cases for aortic size <5.0 cm. This emphasizes the inadequacy of using aortic size as the sole factor for estimating the risk of ATAAs, and the need for new failure predictors based on biomechanics and computational models.

In this lecture, we will present our studies on the biomechanical evaluation of ATAA achieved in collaboration with the University of Pittsburgh. Specifically, the biomechanical properties of ATAA as well as the histological characterization of the aneurysmal aortic tissue will be discussed. Fluid-structure interaction analysis of ATAAs with different aortic valve morphology will be presented to assess hemodynamic predictors of ATAA failure.





Dr. Salvatore Pasta
Research Associate @RiMED Foundation
Palermo, Italy

Friday, October 11, Aula MS1, 10.00
Dipartimento di Ingegneria Civile e Architettura
Via Ferrata,1 – Pavia