

Importance of preventing congestion in heart failure

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Preventing vascular congestion is an important mediator in heart failure, reports a study in the June issue of the *Journal of Cardiac Failure*.

The authors previously demonstrated that venous endothelium is a key regulator of central blood volume, organ perfusion and hemostasis in [heart failure](#) (HF). The present study demonstrates that in venous endothelium, inflammatory/oxidative and hemostatic programs were significantly activated in HF dogs compared to normal dogs. In normal dogs, fluid loading significantly activated these same programs to levels that approached those seen in dogs with HF.

These findings suggest that biomechanical stress (i.e. vascular stretch) may be an important mediator of these endothelial responses, and highlight the importance of preventing congestion. Further investigation is needed to clarify whether the venous endothelial phenotype in unique individuals may ultimately allow us to track the vascular impact of subsequent environmental (i.e. biomechanical and biochemical) stressors, as well as the potential response to therapeutic interventions.

"This important study is consistent with a growing literature, indicating that congestion itself may mediate many of the physiological abnormalities in heart failure, such as vascular dysfunction, inflammation, renal dysfunction and hypercoagulability," commented Barry M. Massie, M.D., Editor-in-Chief of the *Journal of Cardiac Failure*.

More information: The study, "Activation of Endothelial Cells in Conduit Veins of Dogs with Heart Failure and Veins of Normal Dogs Following Vascular Stretch by Acute Volume Loading," authored by Paolo C. Colombo, Sharad Rastogi, Duygu Onat, Valerio Zacà, Ramesh C. Gupta, Ulrich P. Jorde, and Hani C. Sabbah (DOI: 10.1016/j.cardfail.2008.12.006) was supported by a research grant from the National Heart, Lung and Blood Institute. It appears in the Journal of [Cardiac Failure](#), Volume 15, Issue 5 (June 2009) published by Elsevier. <http://www.onlinejcf.com/>

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