



 **VASCULAR DISEASE**

RECOMBINANT HUMAN INTERLEUKIN-11 TREATMENT IMPROVES REPERFUSION AND AUGMENTS COLLATERAL VESSEL GROWTH IN MOUSE MODEL OF SEVERE HINDLIMB ISCHEMIA

ACC Poster Contributions
Georgia World Congress Center, Hall B5
Sunday, March 14, 2010, 9:30 a.m.-10:30 a.m.

Session Title: Peripheral Arterial/Carotid Disease/Aortic Disease
Abstract Category: Peripheral Arterial/Carotid Disease/Aortic Disease
Presentation Number: 1057-360

Authors: *Julius Aitsebaomo, Siddharth Srivastava, Hua Zhang, James E. Faber, Cam Patterson, University of North Carolina, Chapel Hill, NC*

Background: We have previously shown that recombinant human interleukin-11 (rhIL-11) treatment leads to in vivo mobilization of CD34+/VEGFR2+ mononuclear cells (with endothelial progenitor cell properties) in vivo. However, the clinical utility of rhIL-11 on reperfusion after arterial occlusion is currently unknown.

Methods: We pretreated Sv129 mice with 200µg/kg/day of rhIL-11 or placebo for 72 hours prior to femoral artery ligation and performed laser Doppler perfusion imaging pre-operatively and at several time points after femoral artery ligation. We analyzed mononuclear cells in the peripheral blood and tissues and performed immunohistochemical analysis of muscle tissues distal to the site of occlusion.

Results: Recombinant human interleukin-11 treatment resulted in 3-fold increase in plantar collateral vessel perfusion and 4-fold increase in collateral vessel growth (increase in luminal diameter) which correlated with a significant increase in hindlimb function measured by hindlimb appearance- and hindlimb use-score. There was a significant increase in both circulating and peri-collateral vessel CD34+/VEGFR2+ mononuclear cells and monocytes in rhIL-11-treated mice when compared with syngeneic mice treated with placebo under the same experimental condition.

Conclusions: Recombinant human interleukin-11 treatment augments collateral vessel reperfusion, blood flow recovery, collateral vessel growth and hindlimb functional recovery after femoral artery occlusion suggesting a potential role of rhIL-11 on the treatment of patients with peripheral vascular disease.