Reviewer’s report

**Title:** Shear Rate Specific Blood Viscosity and Shear Stress of Carotid Artery in Patients with Lacunar Infarction

**Version:** 1 **Date:** 2 November 2012

**Reviewer:** Beatriz Yadira Y.S. Salazar Vazquez

**Reviewer’s report:**

General question.
Is there some information on the relevance of using the Casson model for analyzing blood viscosity in large blood vessels, with high shear rates, when blood viscosity is likely to be Newtonian?

Specific questions.
Page 1. “A non-Newtonian fluid has a variable, non-linear relation with blood flow [3]. Specifically, blood is thicker at low shear rates (Φ) and becomes relatively thin at higher shear rates [4].” Please revise this statement. How does a fluid have a variable relation with blood flow? Are the authors referring to viscosity? “Thick” and “thin” blood are arcane expressions that could be applicable for describing RBC concentration. The authors must be referring to high and low viscosity. Reference [3] deals with blood flow characteristics in the microcirculation, which may not be applicable to the larger vessels, where hematocrit is constant.

How and from where were blood samples obtained? Anticoagulants?

Page 10, last line. “…abnormal endothelial dysfunction.” Please delete “abnormal”, since this implies that there may be “normal endothelial dysfunction”.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'