Abstract

Background African Americans have been shown to have elevated morbidity and mortality rates related to cardiovascular disease. TRPV1 channels vasodilatory role, makes capsaicin a potential therapeutic target for peripheral vascular function. **Purpose** The aim of this study was to examine the effects of capsaicin on vascular function and mechanoreflex and to explore potential racial differences in the cardiovascular response to passive leg movement (PLM). **Methods** In a single blind placebo controlled counterbalanced design, 9 young healthy black males and 10 white males underwent continuous PLM at 60 cycles/minute for two minutes after taking placebo or capsaicin. At baseline and during PLM, Near infrared spectroscopy (NIRS) of the thigh was recorded for oxygen saturation (StO2), total hemoglobin concentration (THb), oxyhemoglobin concentration (HbO), and deoxyhemoglobin concentration (Hb), as estimates of vascular function. Central hemodynamic responses to PLM were measured using the Finometer (Finapres Medical Systems). **Results** Based on the data collected, there were statistically significant difference found between black and white males for cardiac output. A statistically significant difference was also found between white and black male heart rate for capsaicin and placebo. There was a statistically significant difference found between both the change in peak as well as estimated area under the curve. A trend was observed in black males average change in peak oxygen saturation after acute ingestions of capsaicin in response to PLM, as black males had an increased response. **Conclusion** This research provides novel insights into differences in central and peripheral vascular function between black and white males as well as the potential therapeutic effects of capsaicin.