



Four serial phlebotomy procedures over six months with or without intravenous iron supplementation did not alter vascular endothelial function in the brachial artery when compared with sham phlebotomy” Jelani et al (2018).

Abstract:

INTRODUCTION: Blood donation has been proposed as a potential therapy to reduce risk of cardiovascular disease, but the effects of phlebotomy on vascular function in human subjects have not been well characterized.

AIMS: We conducted a prospective randomized double-blind study to determine the effects of serial phlebotomy on vascular endothelial function in the brachial artery. Eighty-four iron-replete, non-anemic subjects were randomly assigned to one of three study treatment groups: (a) four serial phlebotomy procedures each followed by intravenous infusion of placebo normal saline; (b) four serial phlebotomy procedures each followed by intravenous infusion to replete lost iron; and (c) four serial sham phlebotomy procedures each followed by intravenous infusion of placebo normal saline. Assigned phlebotomy procedures were conducted at 56-day intervals. We measured brachial artery reactivity (BAR, %) in response to transient oxidative stress induced by oral methionine with high-resolution duplex ultrasound imaging before and one week after the fourth study phlebotomy.

RESULTS: Before phlebotomy, oral methionine decreased BAR by -2.04% (95% CI -2.58%,

-1.50%), $P < 0.001$) with no significant difference between groups ($P = 0.42$). After phlebotomy, the BAR response to oral methionine did not significantly change between groups ($P = 0.53$). Brachial artery nitroglycerin-mediated dilation did not change in response to phlebotomy. CONCLUSIONS: Four serial phlebotomy procedures over six months with or without intravenous iron supplementation did not alter vascular endothelial function in the brachial artery when compared with sham phlebotomy.

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Reference:

Jelani, Q.U., Harchandani, B., Cable, R.G., Guo, Y., Zhong, H., Hilbert, T., Newman, J.D. and Katz, S.D. (2018) Effects of serial phlebotomy on vascular endothelial function: Results of a prospective double-blind randomized study. *Cardiovascular Therapeutics*. October 20th. .

doi: 10.1111/1755-5922.12470.

