

Circulating endothelial progenitor cells and erectile dysfunction: possibility of nutritional intervention?

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To provide an overview of molecular and cellular processes involved in erectile dysfunction (ED) with emphasis on circulating endothelial progenitor cells (EPC) and discuss possible nutraceutical means of intervention. A review of literature on Pubmed related to EPC and ED was conducted. Patients with ED appear to possess a reduced number of circulating EPC, which is associated with poor endothelial function possibly as a result of underlying low-grade inflammation. Several studies support the possibility of improving erectile function by inhibition of inflammation as well as administration of various stem cell types. One particularly interesting approach is nutraceutical supplementation to increase circulating EPC, as demonstrated in the product Stem-Kine. Interventions aimed at increasing circulating EPC may have potential in treatment of vascular ED.

KEY WORDS: Endothelial progenitor cell - Erectile dysfunction - Stem-kine.

Erectile dysfunction (ED) is characterized by the lack of ability to achieve and maintain penile erection for intercourse. It is estimated that 10-30 million Americans suffer from this condition and that 50-85% of cases are associated with conditions that affect the endothelium such as hypertension, diabetes, cardiovascular disease, and dyslipidemia.¹ Currently ED is treated by oral inhibitors of phosphodiesterase-5 (sildenafil [Viagra, Revatio], tadalafil [Cialis] and vardenafil [Levitra]), which are considered the standard of care for first-line treatment. Unfortunately, 30-40% of

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patients are unresponsive to therapy or do not tolerate adverse effects associated with treatment.

In addition, PDE5 inhibitors are known to possess a variety of systemic effects in numerous organ systems; therefore, the long-term effects of PDE5 inhibition are still uncertain. In fact, in 1998, the US Food and Drug Administration published a report on 130 confirmed deaths among men who received prescriptions for sildenafil citrate, in which causes of death included arrhythmias, sudden cardiac death and hypotension-associated events.²