

Abstract

Eur Urol. 2007 Dec;52(6):1768-74.

Antioxidant treatment associated with sildenafil reduces monocyte activation and markers of endothelial damage in patients with diabetic erectile dysfunction: a double-blind, placebo-controlled study.

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OBJECTIVE: To investigate the synergic effect of propionyl L-carnitine (PLC) plus sildenafil in reducing monocyte oxidative activity and endothelial dysfunction markers in diabetic patients with erectile dysfunction (ED).

METHODS: Thirty-two type 2 diabetic patients with ED (according to the International Index of Erectile Function-5 [IIEF-5]) were randomized to receive PLC (2 g/d) alone (n=8) or combined with sildenafil (50 mg/d twice weekly) (n=8), sildenafil alone (50 mg/d twice weekly) (n=8), or placebo (n=8) in a double-blind, fixed-dose study. Monocyte oxidative activity (stimulation index [SI]), intercellular adhesion molecule-1 [ICAM-1], P-selectin, advanced glycation end product (AGE) levels, Doppler sonography (recording peak systolic velocity [PSV]; end diastolic velocity [EDV]; systolic wave time [SWT]; resistive index [RI]), and IIEF score were evaluated before and after 12 wk of treatment; IIEF-5 was evaluated again 4 wk posttreatment.

RESULTS: SI was reduced by treatment with PLC alone or combined with sildenafil ($p < 0.05$). In patients treated with PLC plus sildenafil, a decrease in ICAM-1, P-selectin, and EDV values was observed compared with patients treated with sildenafil alone ($p < 0.05$, $p < 0.01$, $p < 0.001$, respectively). IIEF-5 improved in all patients treated with PLC plus sildenafil or sildenafil alone ($p < 0.03$, $p < 0.05$, respectively). Four weeks posttreatment, patients treated with PLC plus sildenafil maintained the improvement of the IIEF-5 compared with patients on sildenafil alone ($p = 0.05$). In patients on PLC treatment (with or without sildenafil), SI was correlated with IIEF-5 ($p < 0.001$), glycemia with STW ($p < 0.03$), and AGEs with IIEF-5 ($p < 0.01$).

CONCLUSION: PLC plus sildenafil was more effective in reducing SI and endothelial dysfunction markers in patients with type 2 diabetes and ED.

PMID: 17478034