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Vasculogenic erectile dysfunction: newer therapeutic strategies.

Siroky MB, Azadzoi KM.
Boston Veterans Administration Medical Center, 150 South Huntington Ave., Room A4-43, Boston, Massachusetts 02130, USA. msiroky@bu.edu

Abstract

PURPOSE: Despite recent advances in therapy, reversal of vasculogenic erectile dysfunction (ED) is rarely possible. A review of vasculogenic ED may further our understanding of the underlying pathophysiology and help develop more effective curative therapy.

MATERIALS AND METHODS: We reviewed the mechanisms of vasculogenic erectile dysfunction and discuss the therapies currently available or being developed for possible future use.

RESULTS: Penile erection is a complex neurovascular phenomenon that may be affected by hypercholesterolemia, atherosclerotic vascular occlusive disease, veno-occlusive dysfunction and cavernosal fibrosis. Animal models of diffuse pelvic atherosclerosis can be maintained by feeding oral cholesterol and injuring the arterial endothelium. Impaired inflow may be addressed by penile revascularization but this strategy is applicable only in select cases. Neovascularization using vascular growth factors has recently been demonstrated to be feasible in animal models. Permanent reversal of impaired cavernosal relaxation requires control of hypercholesterolemia and lifestyle changes, such as smoking cessation. Cavernosal fibrosis may be reversible via some of the same approaches used in treating Peyronie's disease but to date little clinical success has been reported. Venous ligation appears to have a limited role in treating veno-occlusive dysfunction only in highly selected men with minimal cavernosal smooth muscle dysfunction. Hypoxemia, sleep apnea and respiratory failure may also affect erectile dysfunction. However, little attention has been paid to oxygen as therapy for ED.

CONCLUSIONS: Current therapy, while effective in circumventing vasculogenic ED, is relatively ineffective in permanently reversing the condition. Further research aimed at long-term treatment strategies in vasculogenic ED is needed.

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