Vasoactive intestinal peptide and impotence in experimental diabetes mellitus. - Maher E - *Br J Urol* - 01-FEB-1996; 77(2): 271-8 (MEDLINE® is the source for the citation and abstract of this record)

Abstract:

OBJECTIVE: To determine whether a defect in vasoactive intestinal peptide (VIP)-mediated vasodilatation underlies diabetic impotence. MATERIALS AND METHODS: Rats treated with streptozotocin for 8 weeks developed diabetes, as shown by hyperglycaemia and glycosuria, and had significant impairment of sexual function, as determined by tests of sexual behavior. The VIP content of the penis and major pelvic ganglion, the VIP release by the penis in vitro and the responsiveness of the vasculature of the penis in vivo to intracavernous VIP injection were determined. RESULTS: In diabetic rats, the VIP content of the major pelvic ganglion and penis was markedly increased, while the acetylcholine content of the penis was normal. The amount of VIP released in vitro by high potassium concentration or veratridine was similar for penile tissue slices of normal and diabetic rats. Intracavernous injection of VIP induced erection in the control rats but not in diabetic rats, whereas intracavernous injection of the adenylate-cyclase activator forskolin produced erection in both control and diabetic rats. CONCLUSION: Because VIP induces vasodilatation by activating adenylate cyclase, and forskolin produced erection in the diabetic rats, the failure of VIP to produce erection in these rats is unlikely to be due to a defect in the second-messenger mechanism or in the properties of vascular smooth muscle. Thus, a defect at the level of the VIP receptor or of the associated G-protein possibly explains the failure of intracavernous VIP to produce erection in the diabetic rats. Hence, an abnormality in VIP is a component of sexual dysfunction in the diabetic rat and the defect is at the level of the VIP receptor or associated G-protein.

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