Effect of regular use of Phosphodiesterase Inhibitors on penile vasculature in Ercetile Dysfunction

Thesis

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By

Mohamed El-Sayed El-Azab
(M.B, B.Ch)

Under Supervision of

Professor Dr. Abd El hamid Abd El kader Yousef
Professor of Urology
Faculty of Medicine, Ain Shams University

Dr. Khaled Mokhtar Kamal
Assistant Professor of Urology
Faculty of Medicine, Ain Shams University

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Ain Shams University
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الطبيب/ محمدالسيدالعزب

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كلية الطب– جامعة عين شمس

تحت إشراف

الأستاذالدكتور/ عبد الحميد عبد القادر يوسف

أستاذ جراحة المسالك البولية – كلية الطب عين شمس

الدكتور/ خالد مختار كمال

أستاذ مساعد جراحة المسالك البولية – كلية الطب عين شمس

كلية الطب

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LIST OF ABBREVIATIONS

CVOD	Corporal venocclusive dysfunction.
cAMP	Cyclic Adenosine Mono-phosphate
CDDU	Combined duplex Doppler ultrasound.
cGMP	Cyclic Guanosine Mono-phosphate
Cmax	Maximal plasma concentration.
ED	Erectile dysfunction.
EDV	End diastolic velocity.
IC	Intracorporeal
IIEF	International index of erectile function.
MMAS	Masssachusetts Male Aging Study.
NHSLS	National Health and Social Life Survey.
NAION	Nonarteritic anterior optic neuropathy
NO	Nitric Oxide.
PDEI	Phosphodiesterase inhibitors
PGE1	Prostaglandin E1.
PSV	Peak systolic velocity.
RI	Resistive index.
SAQ	Self adminstrated quationnares
SMCs	Smooth muscle cells.
UDT	Undesended testis

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Introduction

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Erectile dysfunction [ED] is defined as the persistent inability to achieve and maintain an erection of sufficient quality to permit satisfactory sexual intercourse ***[Strong et al,2008].***

Modern probability sampling techniques were used by two surveys obtaining prevalence data of erectile dysfunctionin the united states: the Massachusetts Male Aging Study(MMAS) and the National Health and Social Life Survey(NHSLS):

(1)The MMAS consisted of 1709 non institutionalized men between the ages of 40 and 70 years living in the greater Boston area first surveyed between 1987 and 1989 and resurveyed 1995 and1997:the probability of complete ED increased from 5.1% to15%,moderate ED increased from 17% to 34%,and mild ED remained costant at about 17%***[Feldman et al, 1994;Johannes et,2000].***

(2)The NHSLS was a national probability survey of men (N=1410) between the ages of and 59 years living in households in the United States in 1992:7% for ages 18 to29 years,9% for ages 30 to39 , 11% for ages 40 to 49,and 18% for ages 50 to 59***[Lauman et al,1999].***

Ageing related erectile dysfunction [ED] is because of corporal venocclusive dysfunction [CVOD]; as the result of a loss of the corporal smooth muscle cells[SMCs] together with excessive collagen deposition within the corpora ***[Nolazco et al,2008].***

On the other hand, loss of cavernous nerve function is primarily responsible for the development of erectile dysfunction[ED] after pelvic surgery and acts as the primary target for potential neuroprotective or regenerative strategies and emerging neuromodulatory molecules for the treatment of neurogenic erectile dysfunction caused by cavernous nerve injury***[Bella et al,2008].***

Aim of the work

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In this work we will evaluate penile vasculature before and after the regular use of [PDEI] in the management of erectile dysfunction of vasculogenic or neurogenic etiology by objective measure of penile Doppler U/S.

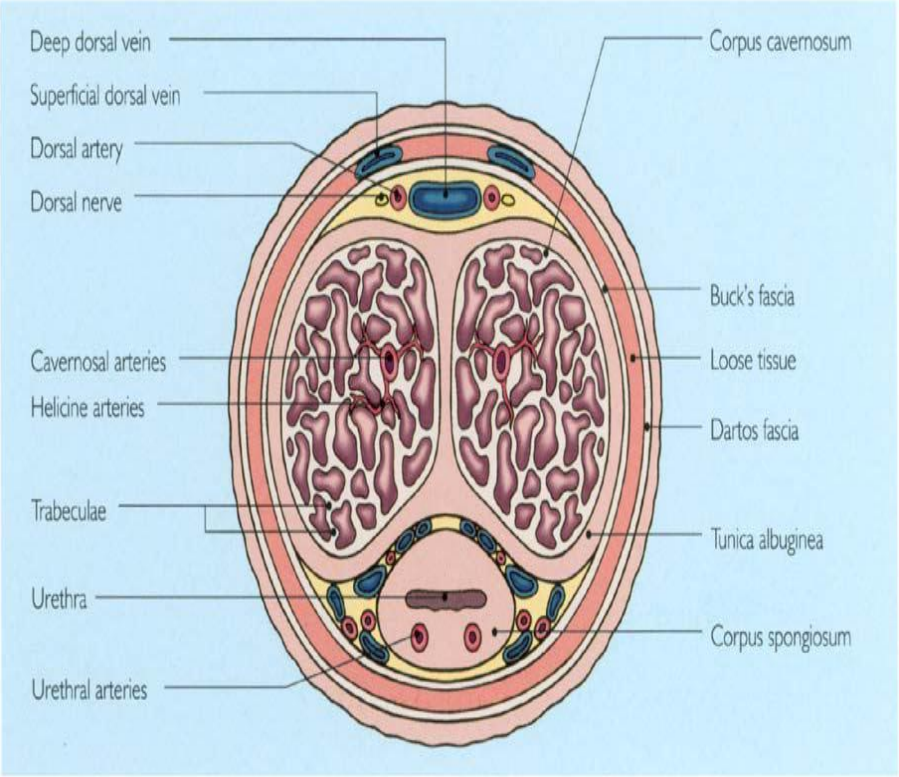
Review of literature

Neurovascular anatomy of the penis

Arterial blood supply to originates from internal pudendal arteries which are branches of ipsilateral inferior epigastric artery.The common penile artery rise from the internal pudendal artery and then branches to form bulbourethral ,dorsal and cavernous arteries.The bulbourethral branch supplies the bulb,corpus spongiosum,and the glans to some extent.The corpora cavernosa receive blood supply from paired cavernous arteries during tumescence.The dorsal artery is responsible for engorgment of glans penis***[Breza J et al;1989].***

Veins of penis drain into three systems; superficial dorsal veins, intermediate and deep system. Superficial dorsal veins are small venous channels in the subcutaneous layer of the skin and subcutaneous tissue of the penis and empty into the saphenous vein.Intermediate system include deep dorsal vein and circumflex veins and formed from sinusoids of corpora; which initially drain in small venules under tunica albugenia.Then these venules form subtuni-

cal venous plexuses that penetrate the tunica albugenia as the emissary veins.The emissary veins course obliquely through the tunica albugenia to join the deep dorsal vein.Deep system is composed of the cavernous and crural veins.The proximal third of penis is drainded by the cavernous veins,which arise from the penile hilum.In addition,crural veins arise on the dorsomedial surface of each corpus cavernosum and drain in the internal pudendal vein***[Brezaj et al ;1989]*** .



Figure(1):Vascular anatomy of the penis***(Roger et al, 2004)***