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شبكة المعلومات الجامعية

# بسم الله الرحمن الرحيم



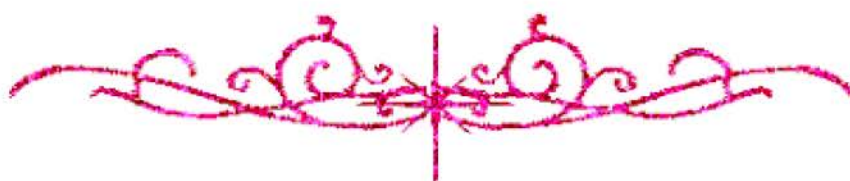
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شبكة المعلومات الجامعية



# شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



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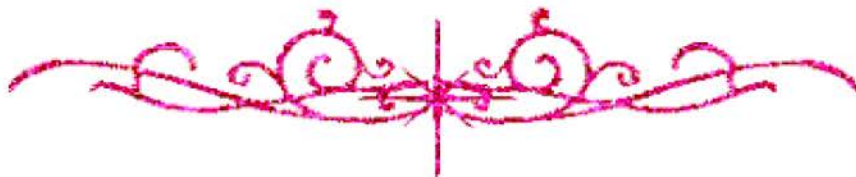
## قسم

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# بالرسالة صفحات لم ترد بالأصل



B 0729

# **Clinical and Sonographic Assessment of the Side Effects of Intracavernosal Injection of Vasoactive Substances**

A Thesis

Submitted for the partial fulfillment of Master degree in Dermatology,  
Andrology and STDs

**By**

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## **Abstract**

The aim of this work was to evaluate the side-effects of intracavernous vasoactive agents on clinical and Sonographic basis. Two groups were included, Group I included 305 patients, 40 to 60 years old, complaining of ED who were trained for self-injection therapy with one of three protocols: protocol A papaverine , protocol B PGE1 and protocol C trimix(papaverine, phentolamine, and PGE1). They were then followed-up clinically, sonographically and by laboratory investigations for 6 months to evaluate the occurrence of side-effects of ICI. Group II included 21 patients presenting to our department for the first time with one of the complications of ICI received elsewhere. They were evaluated and managed accordingly.

One hundred and sixty-eight patients of group I completed the study. Patients on protocol A had the highest incidence of complications concerning priapism, subcutaneous hematoma and penile fibrosis. Postinjection penile pain was observed more with PGE1 and trimix than papaverine. No systemic side-effects were reported. Duplex ultrasound proved beneficial in clarifying fibrosis which was clinically undetectable. Ten patients of group II complained of priapism. Four of whom received the injection during dynamic duplex study, another four received it in private clinics of specialized doctors, while the last two received it at a pharmacy. Seven patients( of group II) complained of penile fibrosis, three of cavernositis and one of intracavernous needle breakage. While Side-effects of ICI are more common with papaverine, PGE1 has the highest incidence of postinjection penile pain.. Duplex ultrasound showed considerable value in detection of penile fibrosis. Performing intracavernous injection and training patients to self-inject themselves should be supervised by an andrologist. Regular follow-up of patients on intracavernous self-injection therapy clinically and sonographically is mandatory. There is a great need for safer intracavernosal vasoactive agents with less invasive delivery systems.

**Keywords:** erectile dysfunction, intracavernosal pharmacotherapy, intracavernosal agents, side-effects of ICI.

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# Table of Contents

List of Abbreviations-----	I
List of Tables-----	II
List of Figures-----	III
Introduction and Aim of Work-----	1
Review:	
• CHAPTER 1 Intracavernosal pharmacotherapy-----	3
• CHAPTER 2 Side-effects of Intracavernosal Drugs-----	18
• CHAPTER 3 Penile Duplex-----	46
Patients and Methods-----	59
Results-----	68
Discussion-----	78
Summary and Conclusion-----	86
References-----	89
Arabic Summary-----	



## List of Abbreviations

IC	Intracavernous
ICI	Intracavernous Injection
ED	Erectile Dysfunction
CGRP	Calcitonin gene related peptide
VIP	Vasoactive intestinal peptide
cAMP	Cyclic adenosine monophosphate
cGMP	Cyclic Guanylate monophosphate
PGE1	Prostaglandin E1
NANC	Non-adrenergic Non-cholinergic
CNS	Central nervous system
NO	Nitric Oxide
CDDU	Color Doppler Duplex Ultrasound
PPDU	Pharmacopenile Doppler Ultrasound
RI	Resisitivity Index
PSV	Peak Systolic Velocity
EDV	End Diastolic Velocity
IIEF	International Index of Erectile Function
CBC	Complete Blood Count
LFTs	Liver Function Tests



## **Lists of Tables**

Table (1) Risk factor in the papaverine group-----	69
Table (2) Risk factor in the PGE1 group-----	69
Table (3) Risk factor in the Trimix group -----	70
Table (4) Incidence of priapism with different vasoactive drugs-----	70
Table (5) Incidence of priapism with different vasoactive drugs according to the dose-----	70
Table (6) Incidence of penile pain among patients in different groups fibrosis among patients in different groups -----	71
Table (7) Relation between risk factors and penile pain-----	71
Table (8) Incidence of penile fibrosis detected clinically-----	72
Table (9) Incidence of penile fibrosis detected sonographically -----	72
Table (10) Incidence of penile fibrosis according to the dose-----	73
Table (11) Site of penile fibrosis as detected by penile ultrasound---	73
Table (12) Relation between risk factors and penile fibrosis-----	74
Table(13) Relation between the frequency of injection and the development of penile fibrosis-----	74
Table (14) Time elapsing from injection till presentation-----	75