بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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Role of Platelet Rich Plasma in Accelerating the Healing Rate of Diabetic Foot Ulcer

Thesis
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Master Degree in General Surgery

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List of Abbreviations

Abb.	Full term
ABI	*Ankle brachial index*
ADP	*Adenosine diphosphate*
AKA	*Above knee amputation*
ASA PS	*American society of anesthesia Physical status*
ATP	*Adenosine triphosphate*
bFGF	*Basic fibroblastic growth factor*
BKA	*Below knee amputation*
Ca+2	*Calcium ions*
CMS	*Centers for Medicare and Medicaid Services*
DM	*Diabetes millets*
EGF	*Epidemic growth factor*
ER	*Endovascular revascularization*
FDA	*Food and Drugs Administration*
GFs	*Growth factors*
HGF	*Hepatocyte growth factor*

HIF-1 ..... *Hypoxia induced factor one*

HPAPs ..... *Human platelet antimicrobial peptides*

HTN ..... *Hypertension*

IFN-δ ..... *Interferon-δ*

IGF ..... *Insulin like growth factor*

IL ..... *Interleukin*

IOC ..... *International Olympic committee*

L-PRP ..... *Leukocyte and platelet rich plasma*

List of Abbreviations **cont...**

MMP ..... *Matrix metalloproteinase*

NSAIDs ..... *Non-steroidal anti-inflammatory drugs*

NWPT ..... *Negative wound pressure therapy*

OR ..... *Open revascularization*

PAD ..... *Peripheral arterial disease*

PDGF ..... *Platelet derived growth factor*

PEDIS ..... *Perfusion, Extent, Depth, Infection, Sensation*

PLG ..... *Platelet leukocyte gel*

PLRG ..... *Leukocyte and platelet rich gel*

PPP.....*Platelet poor plasma*

PRP.....*Platelet rich plasma*

PTA.....*Percutaneous transluminal angioplasty*

SPSS .....*Statistical Package for the Social Sciences*

TGF- β.....*Transforming growth factor-β*

TIMPs.....*Tissue inhibitors of matrix metalloproteinases*

TMA.....*Trans metatarsal amputation*

TNF-α.....*Tumor necrosis factor alpha*

VEGF.....*Vascular endothelial growth factor*

WIfI.....*Wound, Ischemia, foot, Infection*

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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

MONA MAGHRABY

INTRODUCTION

Diabetes mellitus is one of the most important and common metabolic disorders affecting about 2–5% of the population in Europe and about 20% of the population in various other parts of the world The incidence of diabetes mellitus is increasing worldwide; by 2030, it will grow up to 366 million. This estimation occurred because of longer life expectancy and changing habits of diet **(Vendramin et al 2010).**

Diabetic foot ulceration (DFU) is an unavoidable event during the clinical course of many patients, up to 25% of who will suffer from a foot ulcer during their lifetime, approximately 20% of these ulcers ultimately requires amputation and 85% of all diabetic lower limb amputations are preceded by an ulcer. **(Singh et al 2013).**

It is worth noting that these patients are 15 to 30 times more likely to undergo an amputation than those without diabetes **(beropoulis et al 2016).**

To maximize potential for wound healing, multidisciplinary approach is needed, involving off-loading, regular wound debridement, ultimate control of gangrene or sepsis, antibiotic therapy, negative-pressure wound therapy, and sometimes skin grafting, while glycemic control is of paramount importance.

However, the use of growth factors (GFs) as an adjunct to enhance tissue remodeling and promote ulcer healing has been extensively studied in the literature, the rationale for their use lies on their contribution on the biological events that take place during the healing process **(Levin et al 2002)**.

Various research studies have suggested a therapeutic potential of externally applied GFs in patients with impaired wound healing generally by achieving better healing rates, reducing ulcer volume and area, and decreasing time to complete healing. **(Kontopodis et al 2015).**

Platelets rich plasma (PRP) is currently used in different medical fields. The interest in the application of PRP in dermatology has recently increased. It is being used in several different applications as in tissue regeneration, wound healing, scar and alopecia. PRP is a biological product defined as a portion of the plasma fraction of autologous blood with platelets concentration above the baseline. It is obtained from the blood of the patients collected before centrifugation. The knowledge of the biology, mechanism of action and classification of the PRP should help clinicians better understand this new therapy and to easily sort and interpret the data available in the literature regarding PRP. **(Alves et al 2018).**

AIM OF THE WORK

The aim of the work is to evaluate the effectiveness and the rate of the healing of autologous PRP in treatment of diabetic foot ulcer in comparison with standard moist dressing.