

بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

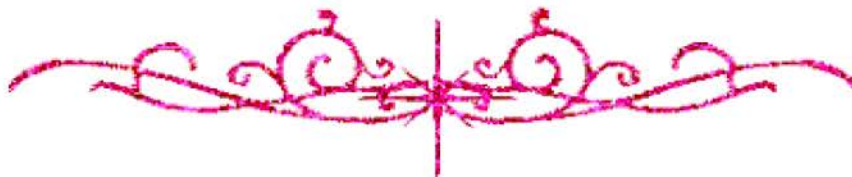
قسم

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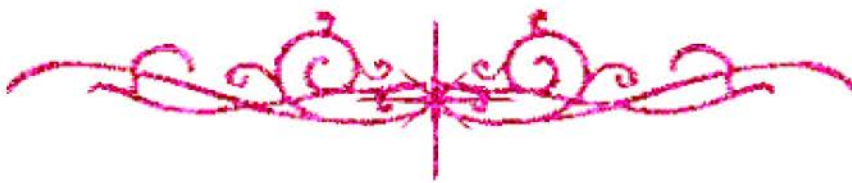
يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار





بعض الوثائق الأصلية تالفة





بالرسالة صفحات
لم ترد بالأصل



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**PHYSICS, APPLICATIONS AND INDICATION
OF MEDICAL OZONE IN RHEUMATOLOGY
AND PAINFULL DISORDERS OF
MUSCULOSKELETAL SYSTEM**

Essay Submitted for Partial Fulfillment
Of Master Degree in Pain Relief

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LIST OF ABBREVIATIONS

1,3 – DPG	1,3 – Diphosphoglycerate
2,3 – DPG	2,3 – Diphosphoglycerate
ABI	Ankle brachial index
AC – COA	Acetyl coenzyme A
AHT	Autohemotherapy
ATP	Adenosine triphosphate
CFCS	Chlorofluorocarbons
DALL	Diabetic angiopathy of the lower extremities
DNA	Deoxyribonucleic acid
EGF	Epidermal growth factor
EGF	Fibroblast growth factor
G6 – PDH	Glucose 6-phosphate dehydrogenase
GM- CSF	Granulocyte macrophage colonystimulating factor
GPX	Glutathione peroxidase
GSH	Reduced glutathione
GSSG	Oxidized glutathione
H ₂ O ₂	Hydrogen peroxide
IFN	Interferon
IL	Interleukins
IOA	International ozone association
KCAL/ MOL	Kilocalorie per mol
KGF	Keratinocyte growth factor
Lops	Lipid oxidation products
L4	Lumbar Vertebra No. Four
NAD ⁺	Nicotinamide adenine dinucleotide

LIST OF FIGERSS

	Title	Page
Fig. 1	The first medically used ozone generator	3
Fig. 2	The balance between ozone formation and disintegration in the ozonosphere	7
Fig. 3	A medical ozone generator: the ozonosan α +	16
Fig. 4	-B: A medical ozone generator: The Ozonosan Photonik (disk unit)	16
Fig. 5	Principle of a medical ozone generator using the ozonosan as an example	18
Fig. 6	Method of major autohemotherapy	23
Fig. 7	Intestinal insufflation equipment for rectal irrigation	24
Fig. 8	The Principle of low-pressure ozone gas irrigation according to Werkmeister	26
Fig. 9	Molecular structure (a), and reaction mechanism of ozone (b), as well as characteristic "ozone peroxides" as sequel products of ozonolysis (c)	30
Fig. 10	Ozonolysis with sequel and intermediary products	32
Fig. 11	The effects of peroxides in phagocytosis	36
Fig. 12	Inactivation of viruses through oxidation at the virus spikes (or acceptors)	38

	Title	Page
Fig. 13	Virus reproduction model	39
Fig. 14	Induction of γ - interferon in whole blood depending on ozone concentration	45
Fig. 15	Survey (schematic) of cytokine induction through ozone in mononuclear cells	46
Fig. 16	The oxygen metabolism and the influence exerted on it by ozone and/ or ozone peroxides	51
Fig. 17	The metabolism of the red blood cell (RBC), and influence of peroxides	54
Fig. 18	The pentose -- phosphate pathway in its function as a peroxide detoxifier. With activation of enzymes involved i.e.: G -- 6 -- PDh, GSH -- red and GSH -- pox	55
Fig. 19	The enzymatic breakdown of peroxides via the glutathione system	56
Fig. 20	The oxygen linkage graph	57
Fig. 21	Oxidative -- decarboxylation of pyruvate during the course of Ac--CoA formation The oxidative influence of ozone on the lipoic/dihydrolipoic acid system.	60
Fig. 22	Induction of TGF β in whole blood under ozone application	63
Fig. 23	Improvement in knee joint function in-patients with gonarthrosis (group B, n = 173) without manifest bone deformation, treated intraarticularly with ozone injections	68

	Title	Page
Fig. 24	Schematic view of a transverse section of the lumbar region: NP: nucleus pulposus. MC: medullary canal. The arrows indicate the three possible routes of O ₂ -O ₃ administration. ID: intradiscal; CA: "chemical acupuncture" in the paravertebral muscle. PM and EP: epidural injection	73
Fig. 25	The interadiscal approach for direct injection of O ₂ -O ₃ into The nucleus pulposus	74
Fig. 26	Two diagrams showing The paravertebral injection of medical ozone .	79
Fig. 27	The scheme indicates the mechanisms for the control of algesic signals. By releasing endorphins (End.), the enkephalinergic interneuron may inhibit presynaptic connection of a neurocyte (C) of a spinal ganglion which, under compression of a herniated disc, stimulates the release of substance P (SP). Endorphins can inhibit the transmission of the algesic signal to neuron D. hence to the ascending spinal-thalamic fibres. The monoaminergic or serotonergic neuron A, as a component of antinociceptive descending fibres, can reinforce the analgesic effect of neuron B.	83

LIST OF TABLES

	Title	Page
Table 1	Applications and Indications of Medical Ozone	6
Table 2	Ozone Pilot Study in Shoulder and Knee Joint Conditions.	68

CONTENTS

INTRODUCTION	1
Chapter 1 HISTORY OF OZONE	3
Chapter 2 PHYSICS CHEMISTRY AND PROPERTIES OF OZONE	7
Chapter 3 GENERATION OF MEDICAL OZONE	15
Chapter 4 APPLICATION FORMS OF MEDICAL OZONE	22
Chapter 5 EFFECTS OF MEDICAL OZONE AND MECHANISM OF ACTION	38
Chapter 6 INDICATIONS OF MEDICAL OZONE IN RHEUMATOLOGY AND PAINFULL. DISORDERS OF MUSCULOSKELETAL SYSTEM	42
SUMMARY	90
REFERENCES	96

INTRODUCTION

INTRODUCTION

Ozone is one of the most important gases in the stratosphere, attaining its maximum concentration of up to approx. 1000 $\mu\text{g}/\text{m}^3$ at the height of 20 to 30 kilometers (12 to 18 miles)

Thanks to its pronounced absorption capacity in the U.V. range at wave lengths between 200 and 300 nm, the ozonosphere is an effective filter acting as a protective shield against high energy ultraviolet irradiation from the sun, thus helping to maintain the biological balance in the biosphere.

Laboratory studies have shown that when ozone is introduced in the blood in microgram doses it is immediately converted into hydroperoxides which are free radical scavengers that help to face accumulation of toxins in the body.

(Baggs, 1993)

It was found that intravascular injection of pure ozone/oxygen mixture results in acceleration of metabolic body activities like glycolysis in RBCs and citric acid cycle, increase in the blood PO_2 and activation of enzymes like glutathione, catalase, and superoxide dismutase and it produces bactericidal, virostatic and fungicidal effects.

(Baggs, 1990)

INTRODUCTION

Ozone in the body will break down into various oxygen subspecies that attack viruses and microbes and oxidize these abnormal cells while the healthy cells of the body are not affected.

(Urban et al., 1995)

AIM OF THIS WORK

Is to evaluate the benefits of medical ozone applications in the field of Rheumatology and painful disorders of musculoskeletal system.

This essay will include 6 chapters as follows:-

1. History of ozone.
2. Physics, chemistry & properties of ozone.
3. Application forms of ozone.
4. Mechanisms of Action of ozone.
5. Indications of ozone in Rheumatology and painful disorders of musculoskeletal system.
6. Ozone side effects, contraindication and contra-applications.