



شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم



شبكة المعلومات الجامعية
@ ASUNET



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

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



يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of
15-25- c and relative humidity 20-40%

بعض الوثائق الأصلية تالفة

بالرسالة صفحات لم ترد بالاصل

*The role of the non-collagenous Cartilage
Oligomeric Matrix Protein as a marker of disease
activity and joint destruction in Rheumatoid
Arthritis and Osteoarthritis patients.*

٤٤٤٠٧

Thesis

Submitted for the Partial Fulfillment of the
Requirements for the Master Degree in
Physical Medicine and Rehabilitation

By

Rana Ahmed El-Hilaly

*M.B.B.Ch., Faculty of Medicine,
Ain Shams University.*

Under Supervision of

Prof. Dr. Nadia Abdel Salam El-Kadery

*Professor of Physical Medicine and Rehabilitation
Faculty of Medicine, Ain Shams University.*

Dr. Mona Mansour Hassab El-Naaby

*Assistant Professor of Physical Medicine and Rehabilitation,
Faculty of Medicine, Ain Shams University.*

Dr. Hanan Ahmed Fahmy

*Assistant Professor of Physical Medicine and Rehabilitation,
Faculty of Medicine, Ain Shams University*

Hana Fahmy

Handwritten signatures and marks in the bottom left corner.

**Faculty of Medicine
AIN SHAMS UNIVERSITY
2002**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

﴿قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْحَكِيمُ﴾

صدق الله العظيم

سورة البقرة / الآية { ٣٢ }

Acknowledgments

First and foremost, thanks to God, the most beneficent and most merciful.

I wish to express my sincere appreciation and deepest gratitude to Prof. Dr. Nadia Abdel Salam El-Kadery, Professor of Physical Medicine and Rehabilitation, Faculty of Medicine, Skin Shams University, for her continuous supervision, constructive encouragement, illuminating guidance as well as her support throughout this work.

I am deeply grateful to Dr. Mona Mansour Elasab El-Naby, Assistant Professor of Physical Medicine and Rehabilitation, Faculty of Medicine, Skin Shams University, who devoted her time, effort and experience most generously throughout this work and for her help and valuable observations which made it possible to complete this work.

I am greatly honored to express my endless gratitude to Dr. Hanan Ahmed Fahmy, Assistant Professor of Physical Medicine and Rehabilitation, Faculty of Medicine, Skin Shams University, for the time she spent and the effort she paid in helping me during this work. It was a great honor and a chance of a lifetime to work with her.

My gratitude and thanks to Dr. Salwa Rader, Lecturer of Clinical Pathology, Faculty of Medicine, Skin Shams University, for her help and cooperation in this work.

Fast, but not least, my thanks to all my family for their cooperative spirit and help.

Rana El-Nady

CONTENTS

	Page
Introduction	1
Aim of the Work	4
Review of Literature	
Histology of Normal Diarthroidal Joints	5
Pathophysiology of Diarthroidal Joints in RA and OA	25
Markers of Cartilage and Synovium Turnover	42
Cartilage Oligomeric Matrix Protein	49
Patients and Methods	57
Results	67
Discussion	98
Summary and Conclusion	111
Recommendations	114
References	115
Appendix	147
Arabic Summary	--



LIST OF ABBREVIATIONS

ACR	American College of Rheumatology
CMC	Carpometacarpal
COMP	Cartilage Oligomeric Matrix Protein
CRP	C- reactive protein
CS	Chondroitin Sulfate
DAS	Disease Activity Score
DIP	Distal interphalangeal
D-Pyr	Deoxypridinoline
EAM	Extra-articular manifestations
ESR	Erythrocyte Sedimentation Rate
F	Female
GAG	Glycosaminoglycan
GLA proteins	Gamma carboxyglutami glutamicrich protein
HA	Hyaluronan
Hb	Haemoglobin
HS	Highly Significant
IGF-1	Insulin like growth factor-1
IL-1	Interleukin 1
K/L	Kellegren and Lawerence Grade
KS	Keratan Sulfate
M	Male
MCP	Metacarpophalangeal joint
MMP	Matrix Metalloproteinase
MMPA	Matrix metalloprotease activator
MTP	Metatarsophalangeal
NO	Nitric Oxide
NS	Not significant
OA	Osteoarthritis
PAI-1	Plasminogen Activator Inhibitor
PDGF	Platelet Derived Growth Factor
PF.F	Patellofemoral friction
PGA	Patient's global assessment
PIICP	Carboxyl- terminal type II procollagen propeptide
PIP	Proximal interphalangeal
Pyr	Pyridinoline
RA	Rheumatoid Arthritis

RBCs	Red blood cells
RF	Rheumatoid factor
ROM	Range of Motion
S	Significant
SD	Standard deviation
SF	Synovial fluid
T	Student's t test
TGF β	Transforming Growth Factor β
TIMP	Tissue inhibitors of metalloproteases
TNF	Tumour necrosis factor
TSP	Thrombospondin
VAS	Visual Analogue Scale
WBCs	White blood cells