

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى :

{ قَتَبَسَمَ صَاحِحَاً مِّنْ قَوْلِهَا وَقَالَ رَبِّ أَوْزِرْ عَنِّي أَنْ أَشْكُرَ نِعْمَتَكَ الَّتِي أَنْعَمْتَ عَلَيَّ
وَعَلَى وَالِدَيَّ وَأَنْ أَعْمَلَ صَالِحاً تَرْضَاهُ وَأَدْخِلْنِي بِرَحْمَتِكَ فِي عِبَادِكَ الصَّالِحِينَ }

صدق الله العظيم

سورة النمل الآية 19

DEDICATION

To.....

My father.....who worked hardly for us

To.....

My mother.....who taught me how I could

Be human

To.....

My beloved brothers , My friends and the people whom I respect For
their continuous support.

ACKNOWLEDGEMENTS

All praise and thanks to ALLAH the Almighty, who blessed me with the courage for the preparation and completion of this study.

With a great deal of respect I want to thank my supervisor Dr. **Tariq Ahmed Hassan Karar**, who spared neither time nor effort in enlightening and helping me. I want to extend my deep thank to ustaz zeinab, ustaz abd elrahman Mohamed for unlimited helping in all steps until completion of this study.

I am very grateful to the staff of Almolazmeen hospital that supported me on this study.

It is a pleasure to express my respect, sincere thanks and gratitude to all test subject group for their agreement to participate in this study.

Abstract

A cross sectional study conducted during the period from April to August 2012 to evaluate of plasma calcium, magnesium, phosphorus and alkaline phosphatase levels in patients with bone fractures.

Eighty Sudanese patients with bone fracture were selected as a test group from Almolazmeen private hospital in Khartoum state, Sudan. The test group was compared with a control group which included forty apparently healthy volunteers'.

Blood specimens were collected from both groups and plasma levels of Calcium, Magnesium, Phosphorus, and Alkaline phosphates were determined. Age and gender of the test group were matched with the control group.

Calcium, magnesium, phosphorus, and alkaline phosphatase were measured using enzymatic methods by using Biosystem commercial kits, statistical Package for social science (SPSS version11.5) computer software was used for data analysis.

Results of this study indicates that, Plasma level of calcium, magnesium, phosphorus, alkaline phosphates show no significant change occurred between the test group and the control group (there were no different between the two groups). Plasma level of calcium, magnesium, phosphorus, alkaline phosphatase didn't change after bone fracture.

Results of this study indicates that, Plasma level of calcium slightly increase with the increase in the duration of fracture.

Results of this study indicates that, Plasma levels of magnesium, phosphorus, alkaline phosphatase had no correlation with the duration of fracture.

Results of this study indicated that, Plasma levels of magnesium, phosphorus, alkaline phosphates had no correlation with the calcium level.

Results of this study indicated that, the age group of 20-30years the most affected by bone fracture.

In conclusion the present results of this study indicated that, male affected by bone fracture more than female.

مستخلص الدراسة

هذه الدراسة المقطعية أجريت خلال الفترة من ابريل حتى أغسطس 2012 لتحديد وتقييم مستويات الكالسيوم،المغنسيوم ،الفوسفور، والفوسفاتيز القلوية في السودانيين البالغين الذين يعانون من كسور العظام ثمانين سوداني يعانون من كسور العظام اختيروا كمجموعه اختبار من مستشفى الملازمين الخاص في ولاية الخرطوم السودان.المجموعة الاختيارية قورنت مع مجموعه المراقبة والتي شملت أربعين متطوعا أصحاء.

وقد تم جمع عينات الدم من كل الفئات ومستويات الكالسيوم والمغنيسيوم والفوسفور، الفوسفاتيز القلوية في بلازما الدم حددت وتمت مطابقة العمر والجنس في مجموعة اختبار مع مجموعه المراقبة.

تم قياس الكالسيوم والمغنيسيوم والفوسفور، والفوسفاتيز القلوية باستخدام أساليب الأنزيمية باستخدام مجموعات تجارية Biosystem وحزمة الطيف الإحصائية للعلوم الاجتماعية (SPSS version 11.5) تم استخدام برامج الحاسوب لتحليل البيانات.

وأشارت نتائج هذه الدراسة أن مستوى الكالسيوم والمغنيسيوم والفوسفور والفوسفات القلوية في بلازما الدم لا توجد علاقة ذات دلالة احصائية بين مجموعة الاختبار و مجموعه المراقبة (لم يكن هناك اختلاف بين المجموعتين) مستوى الكالسيوم والمغنيسيوم والفوسفور والفوسفات القلوية فى بلازما الدم لم يتغير.

وأشارت نتائج هذه الدراسة أن البلازما مستوى الكالسيوم قد زاد زيادة طفيفة مع زيادة مدة الكسر و أيضا أشارت هذه الدراسة أن مستويات المغنيسيوم والفوسفور والفوسفات القلوية في بلازما الدم ليست لديها علاقة مع مدة الكسر.

وأشارت نتائج هذه الدراسة أن مستويات المغنيسيوم والفوسفور والفوسفات القلوية في بلازما الدم ليس لديها ارتباط مع مستوى الكالسيوم.

وأشارت نتائج هذه الدراسة أن الفئة العمرية من 20 إلى 30 سنة هم الأكثر تضرراً من كسور العظام.

وفي الخلاصة أشارت النتائج الحالية لهذه الدراسة إلى أن الذكور أكثر إصابة بكسور العظام من الإناث.

Abbreviations

FGF-23	Fibroblast Growth Factor – 23
OTA	Orthopaedic Trauma Association
ECF	Extra Cellular Fluid
TRPV6	Transient Receptor Potential Vanilloid 6
PMCA1	Plasma Membrane Ca ²⁺ ATPase 1
PTH	Parathyroid Hormone
EDTA	Ethylene Dimine Tetra Acetic acid
CAT	Convulsions, Arrhythmias and tetany
ECG	Electro-Cardio-Graphy
ATP	Adenosine Tri Phosphate
RDA	Recommended Dietary Allowances
AI	Adequate Intakes
BAP	Bone-specific Alkaline Phosphates
ALP	Alkaline Phosphates
AMP	2-Amino-2Methyl-1-Propanol

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