

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال الله تعالى

أَلَمْ تَرَ أَنَّ اللَّهَ سَخَّرَ لَكُمْ مَا فِي الْأَرْضِ وَالْفُلْكَ تَجْرِي
فِي الْبَحْرِ بِأَمْرِهِ وَيُمْسِكُ السَّمَاءَ أَنْ تَقَعَ عَلَى الْأَرْضِ إِلَّا
بِإِذْنِهِ إِنَّ اللَّهَ بِالنَّاسِ لَرءُوفٌ رَحِيمٌ

صدق الله العظيم

سورة الحج الآية 65

Dedication

To pure soul of my father

To my mother who taught us to stand no
matter how circumstances change

To my brother and my sister

To my friends

To those helped me in my way

Mohamed Abd Elmonem Abd Elatif Mohamed

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Abstract

Descriptive cross-sectional study was conducted in the Voluntary Counseling and Testing Center (VCT) center in Bashaer hospital in Khartoum, the aim of the present study to assess plasma Zinc and copper Levels among Sudanese HIV Patients and correlate it with age, sex and duration of infection

Blood samples obtained from 40 HIV sero-positive individuals and 18 healthy controls from the same community were analysed for zinc, and copper and using atomic absorption spectroscopy device. Then data were analyzed by statistical (SPSS version 16) computer software.

The results of the present study showed that, there was significant increase in the mean plasma copper levels in HIV patients ($22.9 \pm 1.7 \mu\text{mol/L}$) when compared with control group ($16.3 \pm 3.3 \mu\text{mol/L}$) with ($P\text{-value} < 0.05$). Also there was significant decrease in the mean plasma zinc levels in patients ($7.1 \pm 0.95 \mu\text{mol/L}$) compared with control group ($11.5 \pm 3.07 \mu\text{mol/L}$) with ($P\text{-value} < 0.05$). In addition the present study showed weak positive correlation between copper level and duration of disease ($r = 0.197$, $p\text{-value} = 0.223$) and age of patients ($r = 0.385$, $p\text{-value} = 0.05$). Insignificant difference when compared the of plasma copper level between male ($22.8 \pm .73 \mu\text{mol/L}$) and

female (23.2 ± 3.16 $\mu\text{mol/l}$) in HIV patients (p.value = 0.451). The results of the present study showed that, there is strong negative correlation between plasma zinc levels and duration of disease ($r = -0.552$, p.value = 0.00) And age of patients ($r = -0.690$, p.value = 0.01). and insignificant difference when Compare plasma zinc level between male (7.1 ± 0.92 $\mu\text{mol/l}$) and female (7.3 ± 1.03 $\mu\text{mol/l}$) in HIV patients (p.value = 0.554).

In Conclusion these study demonstrated decreased mean plasma zinc in HIV seropositive cases when compared with the controls, conversely copper were increased when compared with the controls

مستخلص البحث

هذه الدراسة وصفية مقطعية اجريت في مركز الفحص الطوعي لايدز في مستشفى بشاير في الخرطوم , و الهدف من الدراسة هو تقييم مستويات الزنك والنحاس في البلازما لدى مرضى نقص المناعة المكتسبة و ارتباطها مع العمر, الجنس و فترة الاصابة بالمرض .

تم اخذ العينات لدراسة من 40 مصابا بمرض الايدز و كذلك 18 من الأصحاء كمجموعة ضابطة و قد تم قياس الزنك والنحاس بواسطة جهاز الامتصاص الذري و قد تم تحليل البيانات عن طريق برنامج التحليل الاحصائي النسخة 16.

و قد وجد في النتائج زيادة ملحوظة في مستوى النحاس (1.7 ± 22.9) و كذلك وجد ($\mu\text{mol/L}$) مقارنة بمجموعة الأصحاء (3.3 ± 16.3) نقصان في ملحوظ في معدل الزنك

مقارنة بمجموعة الاصحاء (3.07 ± 11.5) ($7.1 \pm 0.95 \mu\text{mol/L}$) $\mu\text{mol/L}$.

بالإضافة أظهرت الدراسة ضعف علاقة إيجابية بين مستوى النحاس ومدة ($r = 0.385$, $p.\text{value} = 0.223$) وعمر المرضى ($r = 0.197$) المرض الفرق ضئيلا عند المقارنة بين مستوى البلازما ($p.\text{value} = 0.05$). والإناث (3.16 ± 23.2) ($\mu\text{mol/l}$) النحاس بين الذكور ($73. \pm 22.8$) ($p.\text{value} = 0.451$) في المرضى بفيروس نقص المناعة البشري ($\mu\text{mol/l}$).

وأظهرت نتائج الدراسة أن هناك علاقة سلبية قوية بين مستويات الزنك وعمر المرضى ($r = -0.552$, $p.\text{value} = 0.00$). والبلازما ومدة المرض ($r = -0.690$, $p.\text{value} = 0.01$). والفرق ضئيلا عند المقارنة بين (± 7.3) ($\mu\text{mol/l}$) مستوى الزنك في البلازما الذكور (0.92 ± 7.1) والإناث

$p.value$ في المرضى بفيروس نقص المناعة البشرية ($1.03 \mu mol/l$)
($p.value = 0.554$) .

في خاتمة هذه الدراسة أظهرت انخفاض الزنك في البلازما في حالات
الاصابة بفيروس نقص المناعة البشرية بالمقارنة مع الضوابط، وزادت
على العكس في النحاس بالمقارنة مع الضوابط.

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ABBREVIATION

HIV	Human Immune-Deficiency virus
AIDS	Acquired Immune -Deficiency Syndrome
VCT	Voluntary Counseling and Testing Center
RDA	Recommended daily allowance