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## ٨- الملخص العربي

استهدفت هذه الدراسة الحالية تقييم فاعلية بعض المقتنصات وهما الإديتا والسيكلام في علاج التأثير السام الناتج عن استخدام جرعات مميّنة من أيون الكوبالت وذلك من خلال أكسدة بعض الدهون واستخدام بعض انزيمات مضادات الأكسدة في البلازما ، والكبد والكلية في الجرذان .

استخدم في هذه الدراسة ثمان وعشرون من ذكور الجرذان يتراوح أعمارها ما بين 5-7 أسابيع متوسط أوزانها ما بين 107-143 جرام . تم إخضاع تلك الجرذان لمدة أسبوع للتأقلم مع توزيعها عشوائياً علي أربع مجاميع (خمس لكل مجموعة) وذلك حسب بوتوكول التجربة كالاتي :

المجموعة الأولى : المجموعة : الضابطة .

المجموعة الثانية : المعاملة بالكوبالت حيث تم معاملة هذه المجموعة من الجرذان من خلال الغشاء البريتوني بتركيز من الكوبالت بلغ 35 مليجرام /كجم من وزن الجسم لمدة 24 ساعة .

المجموعة الثالثة : المعاملة بالكوبالت إلي جانب الإديتا ، حيث تم معاملة الجرذان من خلال الغشاء البريتوني بتركيز من الكوبالت بلغ 35 مليجرام /كجم ويليه مباشرة معاملة أيضاً من خلال الغشاء البريتوني بتركيز من الإديتا بلغ 55 مليجرام /كجم من وزن الجسم ، لمدة 24 ساعة .

المجموعة الرابعة : المعاملة بالكوبالت إلي جانب السيكلام، حيث تم معاملة الجرذان من خلال الغشاء البريتوني بتركيز من الكوبالت بلغ 35 مليجرام/كجم ويليه مباشرة معاملة أيضاً من خلال الغشاء البريتوني بتركيز من السيكلام بلغ 30 مليجرام/كجم من وزن الجسم لمدة 24 ساعة .

في نهاية التجربة تم ذبح الجرذان وأخذ عينات الدم واعضاء الكبد والكلية ، وذلك لإجراء التحليلات الإنزيمية ، ولقد أظهرت النتائج عليها كما يلي:

### ١- تأثير الكوبالت ومركب الإديتا والسيكلام علي سلوك الفئران:

حدثت تغيرات في سلوك الجرذان المعاملة بالكوبالت (35 مليجرام/كجم من وزن الجسم)، حيث عقب عملية الحقن مباشرة بالكوبالت حدث موت لحظي لعدد 2 من الجرذان و لوحظ انخفاض في نشاط باقي المجموعة بصورة غير طبيعية بالمقارنة بباقي المجاميع .

### ٢- تأثير الكوبالت ومركب الإديتا والسيكلام علي كبد الفئران:

A- احدث الكوبالت انخفاض ملحوظ في مضادات الأكسدة الإنزيمية وغير الإنزيمية.

B- إن معاملة الجرذان بالكوبالت (35 مليجرام/كجم من وزن الجسم) قد أدت إلي حدوث خلل وتأثيرات سلبية لوظائف الكبد متمثلة في انخفاض مستويات انزيمات الكبد اسبارتيت امينوترانسفيريز (AST) والالانين امينو ترانسفيريز (ALT) والفسفاتيز القاعدي (ALP) ومحتوي البروتين. بينما ارتفع نشاط انزيم اللاكتات ديهيدروجينيز (LDH) في الكبد بمقارنته بالمجموعة الضابطة، ووضحت النتائج أن استخدام مركب الإديتا (55مليجرام/كجم) والسيكلام (30مليجرام/كجم) لمدة 24 ساعة مع الكوبالت قد ادي الي حدوث تصحيح للمؤشرات البيوكيميائية في كبد الجرذان بالمقارنة مع المجموعة المعاملة بالكوبالت منفرداً.

### ٣- تأثير الكوبالت ومركب الإديتا والسيكلام علي الكلية في الفئران:

A- إن معاملة الجرذان بالكوبالت (35مليجرام/كجم) وحده قد ادي إلي حدوث انخفاض في نشاط انزيم الفوسفاتيز القاعدي (ALP) ومحتوي البروتين بينما ارتفع نشاط انزيم اللاكتك ديهيدروجينيز (LDH) في الكلية وذلك بمقارنتها بالمجموعة الضابطة، كذلك وبالنسبة للمجموعة المعاملة بمركب الإديتا (55مليجرام/كجم) والسيكلام (30مليجرام/كجم) لمدة 24 ساعة مع الكوبالت (35 مليجرام/كجم من وزن الجسم) فقد أدت ذلك إلي حدوث تصحيح للمؤشرات البيوكيميائية في كلي الجرذان بالمقارنة مع المجموعة المعاملة بالكوبالت منفرداً.

٤ - تأثير الكوبالت ومركب الإديتا والسيكلام علي البلازما في الفرن:

إن معاملة الجردان بالكوبالت (35مليجرام/كجم) قد ادي إلي حدوث زيادة في مستويات اليوريا والكرياتينين في البلازما وذلك بمقارنتها بالمجموعة الضابطة، كذلك وبالنسبة للمجموعة المعاملة بمركب الإديتا (55مليجرام/كجم) والسيكلام (30مليجرام/كجم) لمدة 24ساعة مع الكوبالت (35 مليجرام/كجم من وزن الجسم) فقد أدي ذلك إلي حدوث تصحيح للمؤشرات البيوكيميائية في بلازما الجردان بالمقارنة مع المجموعة المعاملة بالكوبالت منفرداً.

تلخص هذه الدراسة الي ان التعرض للكوبالت ادي الي تغير في المعايير الكيموحيوية المختلفة وانخفاض في مضادات الاكسدة الانزيمية والغير إنزيمية .حيث استطاع مركب الإديتا والسيكلام الي خفض التأثير السمي الذي احدثه مركب الكوبالت في مختلف المعايير الكيميائية الحيوية بالإضافة الي زيادة نشاط الإنزيمات المضادة للأكسدة حيث أن الإديتا يرتبط بالكوبالت عن طريق تكوين ستة روابط، اربع روابط من ذرات الاكسجين الموجودة في مجموعات الكربوكسيل واثنين من ذرات النيتروجين الموجودة في مجموعات الامينو وبذلك يتكون مركب ثابت كيميائيا يمكن إخرجه من الجسم عن طريق البول دون ان يرتبط بالانزيمات الموجودة في الجسم . وكذلك هناك اربعة روابط من ذرات النيتروجين الموجودة في مركب السيكلام ترتبط بالكوبالت لينتكون مركب ثابت كيميائيا يمكن إخرجه عن طريق البول دون ان يرتبط بالانزيمات الموجودة داخل الجسم .

إذا توصي الدراسة بالآتي :-

- تجنب التعرض للكوبالت سواء في عمليات الطلاء والاسلاك الكهربائية وتلوين الزجاج والسيراميك وصناعة السبائك والأسمدة الفوسفاتية.
- استخدام الإديتا والسيكلام كعلاج في تقليل التأثير السام الناتج عن استخدام الكوبالت



# فاعلية بعض المقتنصات علي الأوكسدة الهادمة والأنزيمات المضادة للأوكسدة في الجرذان عند تعرضها لجرعات مميتة من ايونات المعادن الثقيلة

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مقدمة من الطالبة

هند جمال عبد الناصر عطية حماد  
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