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٨- الملخص العربى

استهدفت هذه الدراسة الحالية تقييم فاعلية بعض المقتنصات وهما الاديتا والسيكلام في علاج التأثير السام الناتج عن استخدام جرعات مميتة من ايون الكوبالت وذلك من خلال اكسدة بعض الدهون واستخدام بعض انزيمات مضادات الاكسدة في البلازما ، والكبد والكلي في الجرذان .

استخدم في هذه الدراسة ثمان وعشرون من ذكور الجرذان يتراوح اعمارها مابين 5-7اسابيع متوسط اوزانها مابين 107-143جرام .تم اخضاع تلك الجرذان لمدة اسبوع للتأقلم مع توزيعها عشوائيا علي اربع مجاميع (خمسة لكل مجموعة)وذلك حسب بوتوكول التجربة كالاتي :

المجموعة الاولي :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 24ساعة .

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

المجموعة الرابعة :المعاملة بالكوبالت إلي جانب السيكلام، حيث تم معاملة الجرذان من خلال الغشاء البريتوني بتركيز من الكوبالت بلغ 35 مليجرام/كجم ويليه مباشرة معاملتها ايضاًمن 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 والكلي ، وذلك لإجراء التحليلات اللإنزيمية ،ولقد اظهرت 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 2من الجرذان و لوحظ انخفاض في نشاط باقي المجموعة بصورة غير طبيعية بالمقارنه 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 أدي إلي حدوث خلل وتأثيرات سلبية لوظائف الكبد متمثلة في انخفاض مستويات انزيمات الكبد اسبارتيت امينوترانسفيريز(AST) والالنين امينو ترانسفيريز (ALT) والفوسفاتيز القاعدي (ALP) ومحتوي البروتين. بينما ارتفع نشاط انزيم اللاكتايت ديهيدروجينيز(LDH) في الكبد بمقارنته بالمجموعة الضابطة، واوضحت النتائج أن استخدام مركب الإديتا(55مليجرام/كجم) والسيكلام (30مليجرام/كجم)لمدة 24ساعة 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 الكلي في الفئران:

A- إن معاملة الجرذان بالكوبالت (35مليجرام/كجم) وحده قد ادي إلي حدوث انخفاض في نشاط انزيم الفوسفاتيز القاعدي (ALP) ومحتوى البروتين بينما ارتفع نشاط انزيم اللاكتك ديهيدروجينيز (LDH) فى الكلي 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 كلي الجرذان بالمقارنة مع المجموعة المعاملة بالكوبالت منفرداً.

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

إن معاملة الجرذان 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 الجرذان بالمقارنة مع المجموعةالمعاملة 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 إخراجه 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 ليتكون مركب ثابت كيميائيا يمكن إخراجه عن طريق البول دون ان يرتبط بالانزيمات الموجودة داخل الجسم .

إذا توصي الدراسة بالآتي :-

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

فاعلية بعض المقتنصات علي الأكسدة الهادمة والأنزيمات المضادة للأكسدة في الجرذان عند تعرضها لجرعات مميتة من ايونات المعادن الثقيلة

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علي درجة

الماجستير

في

الدراسات البيئية

الشعبة البيولوجية

مقدمة من الطالبة

هند جمال عبد الناصر عطية حماد

قسم الدراسات البيئية

معهد الدراسات العليا والبحوث

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