

الفصل السادس

الاستنتاجات Conclusions

1-6 الاستنتاجات Conclusions

من خلال البحث الحالي وجد أن الكافور له تأثير سلبي على شكل الرحم و الأجنة عند عمر (21 يوم) وكذلك على نسيج الرحم ومن أهم هذه التأثيرات التي لوحظت خلال فترة البحث ما يلي:

- 1- مادة الكافور المستخدمة في البحث أدت إلى نقص في وزن الأمهات الحوامل في الأسبوع الأول والثاني.
- 2- أظهرت الدراسات القياسية في الأجنة عند عمر 21 يوم حدوث نقص معنوي في أطوال وأوزان الأجنة في المجموعات التجريبية بالمقارنة مع المجموعة القياسية.
- 3- ظهور انكماش وتقلص في مناطق من الرحم كان بها أجنة غير مكتملة النمو وميتة وفي مناطق من الرحم حصل ادمصاص للجنين، كما كان هناك أجنة حدث لها تشوهات خلقية كاملة مثل انعدام الأطراف وقصر في الذيل ونقص في التنسج مع تغير في اللون .
- 4- زاد عدد الأجنة الميتة والتي بها تشوه في المجموعة المعاملة بالجرعة العالية (20ملجم/كجم).
- 5- أظهرت الدراسات النسيجية لقطاعات الرحم في الأسبوع الأول من الحمل حدوث نقص

في طول الخلايا الطلائية كما وجدت فجوات رائقة في سيتوبلازم الخلايا فوق النواة وتحتها، وفي الأسبوع الثاني من الحمل لوحظ زيادة اتساع الأوعية الدموية وعددها مع وجود رشح لكريات الدم البيضاء الملتهمة، أما في الأسبوع الثالث من الحمل زاد عدد كريات الدم البيضاء ذات النواة الكلوية كما زاد عدد وحجم الخلايا الإفرازية Secretory Cells ولوحظ تحلل للخلايا الطلائية فكانت غير واضحة المعالم.

وبذلك فإن هذه الدراسة قد أعطت فكرة عن مدى التأثير السلبي للكافور على الشكل الخارجي للرحم والأجنة في عمر (21يوم) من الحمل وكذلك على نسيج الرحم .

2-6 التوصيات Recommendations:

من خلال النتائج التي تم الحصول عليها من هذا البحث توصي الدراسة بالتالي:-

1- توخي الحذر عند استخدام طب الأعشاب حيث أن كثير من النباتات والأعشاب الطبية تحتوي على سموم خطيرة يمكن أن تسبب ضرراً كبيراً في حال استعمالها عشوائياً أو بكميات كبيرة.

2- يفضل عدم استعمال أي دواء إلا تحت إشراف مختص.

3- يجب على الحامل أن تتجنب استخدام الأعشاب الطبية أثناء فترة الحمل لما لها من تأثيرات ضارة على تكوين الأجنة.

4- التوصية بإجراء دراسات لمعرفة التشوهات التي يمكن أن تحدث في الأجنة عند عمر 7 و 14 يوم.

5- التوصية بإجراء فحص نسيجي للمخ في الأجنة لمعرفة مدى حدوث التلف في الغدة الأم

hypothalamus.

عمل دراسات جديدة لمعرفة التأثيرات الضارة للكافور عن طريق الاستنشاق.

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Effect of camphor on the embryos and uterus histology of the rats during pregnancy

Ebtesam Abdullah Ali Al-Hababi

Summary

Cinnamomum camphor has long been prescribed in traditional medicine for the treatment of inflammation-related diseases such as rheumatism, sprains, bronchitis and muscle pains. Camphor is extensively used in pharmaceutical preparation and skin care products. Also, it is used to local skin and soft tissues discomfort. Camphor has mild inflammatory action which increases skin circulation and has a mild action similar to a local anesthetic. Camphor is found in a variety of non-prescription products, either alone or in combination with other ingredients. It can also be purchased, particularly in shops providing alternative medications, as tablets of pure camphor.

In this study, the camphor tablets were obtained from the traditional medicine market. In Saudi Arabia, camphor in the form of tablets was added to wash dead bodies, and thus putting washers in great risk, especially female washers. Though, literature concerning its reproductive toxicity is not documented. Thus, the main objective of this study is to evaluate the effects of camphor on uterus histology in female rats and embryos.

40 adult females (body weight, 180-200g) and 40 adult male (body weight, 200-230g) of Sprague-Dawley rats were obtained from the Animal House at King Fahad Medical Research Centre. Untreated females and males mated overnight cohabitation (one male to one female). Females examined for the presence of a vaginal plug and vaginal smear in the following morning. The next day, a dropped of copulatory plug was found, designated as day zero of gestation.

The present study was conducted to investigate the effect of camphor on the rat uterus histology and embryos during pregnancy. The pregnant females were divided into four groups; each group consisted of 10 pregnant females. The three experimental group received intra peritoneal injections of camphor solution dissolved in distal water. The doses given were (5, 10 and 20 mg camphor/kg body weigh/5days/ week respectively). Control group (10 rats) were injected by NaCl (0.9%) with the same volume.

At the end of 1 and 2 week of gestation, three animals from each group were anesthetized, while at the end 3 week of gestation, four animals from each group were anesthetized. Anesthesia was made by using ether, their embryo and uteri were removed for sampling examined and primary fixed. The uterus samples; fixed in 10% neutral buffered formalin then processed for histological examination; 7 micron thickness paraffin sections were cut and stained with hematoxylin-eosin, and photographed using digital camera connected to computer. Sections were examined to evaluate the effect of camphor on the uterus histology.

Morphological examinations for treated and control groups did not show any changes on the external shape or death on the pregnant females showed congenital malformations on uterus structure and some 21 old embryos, which suggest a toxicity effect of camphor on the exposed animals.

Also camphor caused a significant increase in the body weight in G2 & G3 pregnant females during the tow week gestation and a significant decrease in the embryos body weight compared to control group.

Hormonal analysis for estrogen and progesterone did not show a significant differences with all used doses, which suggest that camphor may not have a negative influence on the hormones concentrations and function.

This study showed camphor effect on the 21 old embryos only, because of the difficulty to obtain embryos in the 7 and 14 days of gestation. The results of this research showed a significant decrease in the embryos size with all used doses, malformations and degenerative changes, absorption fetus, hypoplasia, club foot and increase dead embryos with higher dose.

The histological examination of treated group uterus (one and tow week gestation) for different doses showed a distinct lack in the number of uterine glands; dilation of blood vessels in the internal layer with a thrombosis and bleeding; abnormal nuclei and mitosis in the vacuolated cytoplasm of the lining columnar cells.

The cross-sections examination of the treated groups of rat uterus of three weeks gestation showed different tissue damage included disappearance of uterine glands with the decrease in endometrium thickness and an increase in the thickness of myometrium compared to the week I and II gestation.

Also, reducing in the epithelial cells size which appeared as cubic cells with inactive irregular nuclei increased number of dilated congested blood vessels and cellular infiltration were observed.

The obtained results of this research indicates that there is a direct correlation between the amount of the dose used and the negative impact of camphor on the histo-architecture of the uterus of pregnant rats and the toxic effects on embryos, suggesting negative influences on the reproductive health of the animals, which might causes abortion in animals with a higher doses of camphor.

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**Faculty of Science
King Abdul Aziz University
Jeddah- Saudi Arabia
Rabia Awal 1431H / March 2010G**

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**Supervised By
Dr. Sabah Abdul Aziz Linjawi
Assistant Prof. of Molecular Biology
zoology department**

Faculty of Science
King Abdul Aziz University
Jeddah- Saudi Arabia
Rabia Awal 1431H / March 2010G