شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

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التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأفلام قد أعدت دون أية تغيرات

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تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

بعض الوثائق الاصلية تالفة

بالرسالة صفحات لم ترد بالاصل

Short-term Growth and Bone Turnover in Children with Persistent Asthma During Inhaled Steroid Therapy

Thesis
Submitted in partial fulfillment of MD degree
(Pediatrics)

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بسم الله الرحمن الرحيم

بناء على موافقة الأستاذ الدكتور / نائب رئيس الجامعة بتاريخ ٢٠٠٣/١/٢١ اجتمعت اللجنة المشكلة من الأساتذة

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بقاعة الدور الثانى بالمركز الطبى الوقاني لمناقشة علنية لرسالة الدكتوراه فى طب الأطفال المقدمة من الطبيبة / كريستين وليم شاكر

وذلك فى تمام الساعة الحادية عشر صباحاً يوم الاثنين الموافق ٢٠٠٣/٤/٧ م

عنوان الرسالة:

تأثير العلاج بمركبات الكورتيزون عن طريق الإستنشاق على النمو و ديناميكية بناء و إحلال العظام في الأطفال المصابين بالربو الشعبي المزمن على المدى القصير.

الملخص :

إن الربو الشعبي يعتبر الآن من الأمراض المزمنة المصاحبة لإلتهاب في مجرى التنفس الذي يقل باستخدام مركبات الكورتيزون. إن الهدف من هذه الدراسة هو معرفة تأثير مستنشقات الكورتيزون على النمو و على بناء و إحلال العظام عند الأطفال المصابين بالربو الشعبي. و قد شملت هذه الدراسة ٣٤ طفلاً مصابا بالربو الشعبي (مجموعة I) كما تشمل الدراسة ١٤ طفلا سليما (مجموعة II) كمجموعة ضابطة و كانت تشمل ٨ ذكور و ٦ إناث من نفس الفئة العمرية. و قد تم قياس الطول و الوزن و مؤشر كتلة الجسم (BMI) كما تم قياس نسبة مادتي PICP و ICTP قبل و بعد العلاج و التي تعكس بناء و إحلال العظام على التوالي. و قد وجد أنه لا يوجد تأثير ذو دلالة إحصائية للعلاج بمستنشق الفلكسوتيد على النمو بينما حدث إنخفاض في مادتي PICP و ICTP و الذي يعكس إبطاءا في عملية بناء و إحلال العظام على التوالي.

و ترى اللجنة قبول البحث

To my beloved Youssef
You are the light of my life

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To the asthmatic children, for whose benefit the present work was conducted, I wish it would help you a step forward.

CONTENTS

KEYWORDS

Bronchial asthma – inhaled corticosteroids – pulmonary functions – growth – bone turnover

ABSTRACT

Bronchial asthma is a chronic inflammatory disease of the airways, which reflects the importance of corticosteroids as being the first line choice for anti-inflammatory therapy for long-term prophylactic treatment in persistent asthma; however, their risks must be carefully considered, especially regarding bone metabolism and growth suppression in children.

The aim of the present study was to compare the formation and degradation markers of bone turnover in children with asthma who are using inhaled fluticasone propionate (FP), as well as to study the effect of inhaled FP on short term statural growth, and the degree of improvement in pulmonary functions.

The present study included 34 asthmatic children (group I), 18 males and 16 females, of the age group 6-12 years, who were further subdivided into two groups: a) Group Ia: receiving fluticasone propionate (FP), via metered dose inhalers (MDI), at doses equal to or below 200 mcg/day (19 patients), and b) Group Ib: receiving FP at doses above 200 mcg/day (15 patients). The study also included 14 healthy, non-atopic, non-asthmatic children (group II) as controls. They were 8 males and 6 females of the same age group.

The results of the present work demonstrated a statistically significant decrease in asthma symptom score in both subgroups, as well as improvement of all asthma symptoms. A statistically significant increase in mean weight was observed in both subgroups, that was within the normal percentiles. Total patients achieved a mean increase in weight of 116.03+/-71.11% to that predicted. Similarly, a statistically significant increase in mean height was observed in both subgroups, that was within the normal percentiles. Total patients achieved a mean increase in height of 99.35+/-24.48% to that predicted. However, no statistically significant increase in mean BMI was demonstrated in either group. As regards pulmonary functions, a statistically significant increase in mean PEFR, FEV_1, FEV_1/FVC, and FEF_{25-75} was detected after treatment. No statistically significant difference between pre- and post-treatment mean values of serum calcium, phosphorous, and alkaline phosphatase was demonstrated. However, a statistically significant decrease in post-treatment mean values of both PICP and ICTP as compared to pretreatment values was observed implying a decrease in rate of bone turnover. Moreover, a statistically significant positive correlation was demonstrated between post-treatment levels of PICP and ICTP, and this "coupling" in decreased rate of formation as well as degradation implies no net bone loss.

List of Abbreviations

AA:	Arachidonic acid
AEC:	Absolute eosinophilic count
Alk P:	Serum total alkaline phosphatase
AP-1:	Activator protein-1
APC:	Antigen presenting cell
ASM:	Airway smooth muscle
BAL(F):	Bronchoalveolar lavage (fluid)
BDP:	Beclomethasone dipropionate
BHR:	Bronchial hyperresponsiveness
BUD:	Budesonide
C (3a, 5a, etc.):	Complement (3a, 5a, etc.)
Ca^{++}:	Ionized calcium
CBC:	Complete blood count
CD (4+, 8+, etc.):	Cluster differentiation antigen (4+, 8+, etc.)
CGRP:	Calcitonine gene-related peptide
COX-2:	Inducible cyclooxygenase
cPLA2:	Inducible phospholipase A2
CTAP-III:	Connective tissue activating peptide-III
CTMC:	Connective tissue mast cell
DNA:	Deoxyribonucleic acid
DPDs:	Deoxypyridinolines
DPI:	Dry powder inhaler
DSCG:	Disodium cromoglycate
EAR:	Early asthmatic response
EBV:	Epstein-Barr virus
ECM:	Extracellular matrix
ECP:	Eosinophil cationic protein
EDN:	Eosinophil derived neurotoxin
EPO:	Eosinophil Peroxidase
ERK:	Extracellular signal-regulated kinase
ERV:	Expiratory reserve volume
EPX:	Eosinophil protein X
Fab:	Fragment antigen binding
Fc:	Fragment crystalizable
FcγRII:	Intermediate affinity Fc IgG receptors
FcγRIII:	Low affinity Fc IgG receptors
FcεRI:	High affinity Fc receptors for IgE
FcεRII:	Low affinity Fc receptors for IgE
FDC:	Follicular dendritic cells
FEF_{25-75}:	Forced expiratory flow through the midportion of the FVC
FEV_1:	Forced expiratory volume in the first second
FMLP:	N-formyl-methionyl-leucyl phenylalanine
FP:	Fluticasone propionate
FRC:	Functional residual capacity
FVC:	Forced vital capacity
GH:	Growth hormone
GINA:	Global Initiative for Asthma
GM-CSF:	Granulocyte macrophage-colony stimulating factor