CORRELATION BETWEEN MATERNAL AND CORD SERUM LIPID PROFILES OF PRETERM INFANTS WITH RESPIRATORY DISTRESS SYNDROME

Thesis

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العلاقة بين نسبة الدهون في مصل الأمهات ومصل الحبل السرى فى الأطفال المبتسرين المصابين بمتلازمة الكرب التنفسى

رسالة

توطئة للحصول على درجة الماجستير

فى **طب الأطفال**

مقدمة من

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بكالوريوس الطب والجراحة العامة (٢٠٠٥)

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Abbrev.	Full term
NVD	: Normal vaginal delivery
PC	: Phosphotidylcholine
PDA	: Patent ductus arteriosus
PDGF	: Platelet-derived growth factor
PEEP	: Peak end expiratory pressure
PG	: Phosphatidylglycerol
PIP	: peak inspiratory pressure
PMT	: Pulmonary mechanics testing
PN	: Parentral nutrition
RDS	: Respiratory distress syndrome
ROP	: Retinopathy of prematurity
SIMV	: Synchronized intermittent mandatory ventilation
SP	: Surfactant protein
TG	: Triglyceride
TI	: Transcutaneous
VLDLs	: Very low density lipoproteins

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LIST OF ABBREVIATIONS

Abbrev.	Full term
%	: Percent
A/CV	: Assisted/control ventilation
ANS	: Antenatal steroid
APACHE	: Acute physiology and chronic health evaluation
Apo	: Apolipoprotein
BMI	: Body mass index
BPD	: Bronchoalveolar lavage
cGMP	: Cyclic guanosine monophosphate
CHD	: Coronary heart disease
CLD	: Chronic lung disease
CPAP	: Continuous positive airway pressure
CS	: Caesarian section
DPPC	: Dipalmitoylphosphatidyl choline
EFA	: Essential fatty acid
ETT	: Endotracheal tubes
FGF	: Fibroblast growth factor
gm	: gram
HDLs	: High density lipoproteins
HFOV	: High frequency oscillatory ventilation
HMD	: Hyaline membrane disease
IMV	: Intermittent mandatory ventilation
iNO	: Inhaled nitric oxide
IVH	: Intraventricular hemorrhage
LCAT	: Lecithin cholesterol acyl transferase
LCL	: Long chain lipoprotein
LDL	: Low density lipoprotein
LDLs	: Low density lipoproteins
LP	: Lipoprotein
LPL	: Lipoprotein-lipase
NEC	: Necrotizing entercolitis
NO	: Nitric oxide
NRDS	: Neonatal respiratory distress syndrome

INTRODUCTION

Neonatal respiratory distress syndrome (RDS), previously called hyaline membrane disease, is a syndrome caused in premature infants by developmental insufficiency of surfactant production and structural immaturity in the lungs ***(Rodriguez, 2002).***

RDS affects about 1% of newborn infants and is leading cause of death in preterm infants. The incidence decreases with advancing gestational age, from about 50% in babies born at 26-28 weeks, to about 25% at 30-31 weeks ***(Horbar, 2002).***

RDS begins shortly after birth, manifested by tachypnea, tachycardia, chest wall retraction (recession), expiratory grunting, flaring of the nostrils and cyanosis during breathing efforts. Radiological findings including (diffuse reticulogranular pattern with air bronchograms) can be confirmed by chest x-ray ***(Soll, 2001).***

Cholesterol was found to represent over 50% of neutral lipid of both the total surfactant and lamellar body fractions and de novo synthesis of cholesterol accounted for only 1% of the surfactant cholesterol, the remainder being derived from exogenous cholesterol supplied as serum lipoproteins ***(Gunes et al., 2007).***

The main lipids in plasma are cholesterol and triglyceride, they required to be transported in plasma encapsulated in shell of phospholipids forming lipoproteins.

Lipid metabolism has important role in fetal development during late stage of gestation including growth and fat accretion in utero, increasing amniotic fluid lecithin levels with maturation of pulmonary function and changes in levels of minor phospholipids in amniotic fluid. A deficiency or reduced transport of essential or long chain polyunsaturated fatty acids, resulted in alterations of lipid in the fetus which could inhibit normal fetal growth maturation, which may lead to delayed development of fetal lungs ***(Lane, 2002)***.

AIM OF THE WORK

The aim of this study is to explore the role of lipid profile in mothers and cord blood of babies in pathogenesis of RDS by evaluating lipid profile in babies with RDS and their mothers compared to babies with no RDS and their mothers.