SURFACTANT REPLACEMENT THERAPY IN NEONATES WITH RESPIRATORY DISTRESS SYNDROME (RDS)

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LIST OF ABBREVIATIONS

ALEC	Artificial lung expanding compound
ARDS	Adult respiratory distress syndrome
BPD	Bronchopulmonary dysplasia
BW	Body weight
CAMP	Cyclic adenosine monphosphate
CBFV	Cerebral blood flow velocity
CDP	Cytidine diphosphate
C_L	Lung compliance
CLSE	Calf lung surfactant extract
CMP	Cyclic monophosphate
CO_2	Carbon dioxide
COA	Co-enzyme A
CPAP	Continuous positive airways pressure
C_{rs}	Respiratory system compliance
CTP	Cytidine Triphosphate
C_W	Chest wall compliance
DHAP	Dihydroxy acetone phosphate
DPPC	Dipalmitoyl phosphatidyl choline
DSPC	Disaturated phosphatidyl choline
ECMO	Extra corporal membrane oxygenation
EGF	Epidermal growth factor
ES	Exogenous surfactant
FiO_2	Fractional inspired oxygen concentration
FPF	Fibroplast pneumocyte factor
FRC	Functional residual capacity
GA	Gestational age
HFV	High Frequency ventilation
HFJV	High frequency get ventilation
HFOV	High-frequency oscillatory ventilation
HMD	Hyaline membrane disease
I:E	Inspiratory to expiratory ratio
IPPV	Intermittent positive pressure ventilation
IVH	Interventricular haemorrhage
MAP	Mean airway pressure

mmHg	Millimetres of mercury
mRNA	Messenger ribonucleic acid
O_2	Oxygen
OSIRIS	Open Study of Infants at High Risk of /or with Respiratory Insufficiency - The Role of Surfactant
PA	Phosphatidic acid
$PACO_2$	Alveolar carbon dioxide tension
PAO_2	Alveolar oxygen tension
$PaCO_2$	Arterial carbon dioxide tension
PaO_2	Arterial oxygen tension
PAP	Phosphatidic acid phosphatase enzyme
PC	Phosphatidyl choline
PDA	Patent ductus arteriosus
PE	Posphatidyl ethanolamine
PEEP	Peak end expiratory pressure
PG	Phosphatidyl glycerol
PH	Hydrogen ion concentration
PI	Phosphatidyl inositol
PIE	Pulmonary interstitial emphysema
PIP	Peak inspiratory pressure
PS	Phosphatidyl serine
R_{AW}	Airway resistance
RDS	Respiratory distress syndrome
R_L	Lung resistance
ROP	Retinopathy of prematurity
R_{rs}	Respiratory system resistance
R_W	Chest wall resistance
SP-A	Surfactant protein A
SP-B	Surfactant protein B
SP-C	Surfactant protein C
SP-D	Surfactant protein D
TGV	Thoracic gas volume
THAM	Tri hydroxy amino methane
TTN	Transient tachypnea of the newborn
USPC	Un saturated phosphatidyl choline

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INTRODUCTION AND AIM OF THE WORK

1.1 INTRODUCTION

Respiratory disorders are frequent during the neonatal period since about 3% of newborn infants present a respiratory distress during the first hours after birth (Soll and McQueen,1992).

Respiratory distress syndrome (RDS) of preterm infants remains a significant cause of morbidity and mortality despite the improvement in neonatal care (O'Brodovish and Mellin, 1985).

RDS is characterized by failure of pulmonary gas exchange following birth with progressive respiratory atelectasis. A deficiency of surfactant is the principle cause for the atelectasis (Rubin et al., 1992).

During the 1970s, Enhorning, Roberton and their colleagues developed a sound experimental basis for the concept that RDS could be treated with exogenously administered surfactant (Enhorning et al., 1978). The idea was first successfully tested in infants by Fujiwara and co-workers in 1980 (Fujiwara et al, 1980). Subsequently, experimental and clinical investigations have increased exponentially.

Surfactant replacement is rapidly becoming an accepted part of the management of neonatal RDS and there are several multicenter clinical trials using surfactant in progress (Ashton et al., 1992).

1.2 AIM OF THE WORK

The aim of this work is to evaluate the therapeutic efficacy and safety of surfactant in rescue therapy for preterm neonates less than 32 weeks' of gestational age, complaining of RDS and requiring intermittent positive pressure ventilation (IPPV), in comparison with other group of distressed preterms requiring IPPV only.

REVIEW OF LITERATURE