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# VITAMIN A STATUS IN INFANTS WITH BRONCHIOLITIS

Thesis

Submitted for Partial fulfilment of Master Degree in Pediatrics

By

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﴿ وعلمك ما لم تكس تعلم

هِ أَمِيكُ عَلَيكُ عَلَيكُ عَظِيماً ﴾

ر الماري العظريم

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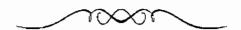
Adel Ahmed



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## List of Abbreviations

ADH Anti Duretic Hormone
BAL Broncho Alveolar Lavage

CDNC Complement - Dependent Neutrophil -

mediated cytotoxicity

CRABP Cellular Retinoic Acid Binding Protein

CRP C~ Reactive Protein

DOC Deoxy cholate

ELISA Enzyme Linked Immuno Sorbent Assay

FI Formalin - Inactivated

GE Gastro Enteritis

IFA Immun Fluorescence Assay

IFN Interferon

Ig Immunoglobulin

IVIG Intravenous Immuno Globulin

RBP Retinol Binding Protein

RDA Recommended Daily Allowance

RNA Ribonucleic Acid

RSV Respiratory Syncytial Virus

RT. PCR Reverse Transcriptase Polymerase

Chain Reaction

SDS Sodium Dodecyl Sulphate

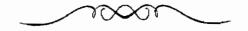
TK Thymidine Kinase

VIT Vitamin

WHO World Health Organization

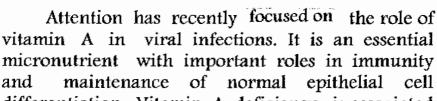
WARI Wheezing Associated Respiratory

Injections



INTRODUCTION
AND
AIM OF THE WORK

# Introduction and Aim of the work



differentiation. Vitamin A deficiency is associated with increased frequency of clinically significant repiratory and diarrheal illnesses and may be a determinant in overall childhood mortality rates

(Neuzil et al., 1994).

Markowitz et al., (1989) observed that vitamin A deficiency was associated with increased mortality in Zairian childern younger than 24 months of age hospitalized with measles pneumonia and lymphopenia Formal nutritional evaluation was not done, but 25 of 283 patients were considered to have muscle wasting. The overall case mortality rate in this cohort was 26%.

Recent evidence has shown that vitamin A deficiency, arising from inadequate diets or induced by infections, is associated with increased morbidity and mortality. Sickness and death in these circumstances are often a result of respiratory

infections and occasionally of diarrheal diseases (Contsoudis et al., 1992).

Respiratory syncytial virus and measles virus are both paramyxoviruses that replicate within the respiratory tract and produce respiratory illness. Each can predispose to secondary bacterial respiratory infection. The similarities between the measles virus and R.S.V. had led many investigators to evaluate serum vitamin A and retinol-binding protein levels in children infected with respiratory syncytial virus (Neuzil et al., 1994).

### Aim of the work:

The aim of the present work was to evaluate vitamin A status in infants suffering from bronchiolitis comparing it with normal controls.

REVIEW OF LITERATURE

# CHAPTER I

### Retinol ( Vitamin A )

#### Nomenclature!

Vitamin A is a generic term used for all compounds that exhibit qualitatively the biological activity of retinol. The term retinoids has been adapted recently as a general term that includes both the natural forms of vitamin A and synthetic analogus with or without biological activity of retinol (Goodman, 1984).

Vitamin A is a polyisoprenoid compound containing a cyclohexenyl ring. It includes retinol, retinoic acid and retinal. Only retinol has full vitamin A activity, the others fulfill some but not all of vitamin A functions (Mayes, 1990).

#### Forms of vitamin A:

- ♦ A1, A2 and B- carotene.
- ♦ R~ CH2 OH for retinol.
- R- CHO for retinal.
- R- CO<sub>2</sub> H For retinoic acid (MacCormick, 1987) (Fig. 1)