INTRODUCTION

Respiratory syncytial virus (RSV) is a single stranded RNA enveloped virus 100 – 350 nm in diameter, which is morphologically similar to the Paramyxoviruses in the family Paramyxoviridae. Like Paramyxoviruses, it causes formation of syncytial cells in the tissue culture ***(Berthiaume et al., 1974).***

The family Paramyxoviridae contains four genera; three of them had been grouped together in the subfamily Paramyxovirinae which includes : (a) genus Paramyxovirus (b) genus Rubulavirus and (c) genus Morbilivirus. The fourth genus, Pneumovirus, forms the second subfamily, Pneumovirinae, RSV is the best known member ***(Peter et al., 1996).***

RSV is a major cause of bronchiolitis and pneumonia in infants and children. Furthermore, it is a potential trigger of episodes of asthma and predispose susceptible individuals to recurrent wheezing in later life ***(Dodge et al., 1996, Allport et al., 1997 & Thomas et al., 1998).***

Acute respiratory tract infection is the major cause of morbidity and mortality in young children ***(Maitreyi et al., 2000).***

Ten protein antigens (1C, 1B, N, P, M, 1A, G, F, 22K and L) specific for RSV were identified ***(Huang et al., 1985)***. Two types of F protein immunogen (immautre and mature) are reproduced during natural RSV infection. The immature F immunogen is found in viral lysate and the mature F immunogen is found on infected cells or virion ***(Sakurai et al., 1999).***

RSV infection is associated with vigorous inflammation and death of the airway epithelial cells. RSV directly resulted in cellular apoptosis. Apoptosis could be detected by light microscope where the apoptotic cells showed a number of morphologic features including condensation and fragmentation of the nuclei, decreased cell size and cytoplasmic vaculation ***(Savill et al., 1989 & O'donnell et al., 1999).***

The aim of this work is :

- Detection of RSV fusion (F) antigen by different laboratory methods [direct immunofluorescence (DIF) from nasopharyngeal aspirate sample and DIF after cell culture] .
- Detection of the role of apoptosis in the pathogenesis of respiratory tract infection caused by RSV in children.