Respiratory syncytial virus infection in children

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Respiratory syncytial virus is distinguished as a member of thepneumovirus, genus of the family paramyxoviridae. It is non segmentednegative strand RNA virus that appeared to be the major cause ofwidespread outbreaks of bronchiolitis and pneumonia in infants andyoung children. The virus possesses both apoptotic and antiapoptoticproperties.This study aimed to detect the rate of RSV infection in childrenless than 5 years old and also to determine the role of apoptosis in thepathogenesis of respiratory tract infection caused by RSV in children.This study included 45 patients suffering from symptoms and signsof respiratory tract infection and 10 patients free from symptoms andsigns of respiratory tract infection were selected as control group.All patients were subjected to the followings:1- Full medical history taking.2- Full clinical examination.3- Radiologic examination (Chest X-ray).4- Laboratory examination:A- Nasopharyngeal aspirate sample collection and transport.S- Direct immunofluorescence technique.C- Diagnosis ofRSV infection by cell culture technique.i- Study of the CPE ofRSV on HEP-2 cell line.ii-Virus identification by immunoflurorescence after cellculture.D- Assessment of apoptosis by using:i- Giemsa staining.ii - Agarose gel electrophoresis for DNA fragmentaton.This study showed that:1_RSV infection was higher in infants suffering from bronchiolitis withage less than 1 year (80%) than in children> 2 years (50%).2- RSV infection was slightly higher in males (80%) than females3- RSV infection was significantly higher in patients with bronchiolitisthan in patients with pneumonia and bronchopneumonia.4- Direct immunofluorescence test is very sensitive test for diagnosis ofRSV infection.S- Virus isolation by cell culture is more specific than DIF test.6- There was non statistically significant difference between DIF andDIF after cell culture for detection ofRSV antigen.7- Six (20%) of RSV infected HEP-2 cell lines showed apoptoticchanges.8- RSV infection insignificantly cause apoptosis in infected HEP-2 cells.• Isolation of RSV is more common In infants suffering fromlower respiratory tract infections specially those withbronchiolitis.• RSV infection could be detected by DIF technique which ismore rapid an sensitive than standard cell culture.• Virus isolation on HEP-2 cells is very specific although it istime consuming technique.• RSV has both apoptotic and antiapoptotic properties.• Apoptosis of infected cells is important for viral clearance.• Inhibition of cellular apoptosis is one of the virus mechanismsto evade the immune response.