

potential host-susceptibility factor in tuberculosis in Chongqing, China.

METHODS: A total of 123 patients (including 91 children and 32 adults) with tuberculosis and 249 normal controls (including 167 children and 82 adults) were selected randomly. The polymorphisms at positions -607A/C and -137G/C in promoter of the *IL-18* gene were analyzed by using polymerase chain reaction with sequence-specific primers.

RESULTS: The allele and genotype frequencies of IL-18/-607 gene polymorphisms were similar in patients with tuberculosis and in controls. However, frequencies of the -137GG, GC, and CC genotypes were 67.9%, 28.5%, and 3.6%, respectively, in controls and 78.9%, 19.5%, and 1.6%, respectively, in those with tuberculosis. Frequency of the -137GG genotype in tuberculosis was significantly higher than that in controls ($\chi^2 = 4.881$; $P = .027 < .05$). The frequency of allele G at position -137 in patients with severe tuberculosis was significantly higher than that in patients with pulmonary tuberculosis ($\chi^2 = 4.336$; $P = .037 < .05$).

CONCLUSIONS: Polymorphism of the IL-18 gene promoter at position -137 is a potential host-susceptibility factor in tuberculosis in Chongqing. The people with allele C at position -137 in the promoter of the *IL-18* gene may be protected against mycobacterium tuberculosis infection. The polymorphisms at position -137 of the *IL-18* gene may be associated with a severe degree of tuberculosis.

ASSOCIATION OF POLYMORPHISMS OF THE INTERLEUKIN 18 RECEPTOR: A GENE WITH SUSCEPTIBILITY TO TUBERCULOSIS IN CHONGQING, CHINA

Submitted by Li-Ping Jiang

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INTRODUCTION: The interleukin 18 (IL-18) receptor complex is a heterodimer consisting of IL-18R α and IL-18R β . Both chains are required for IL-18 signaling transduction in T cells and natural killer cells.

OBJECTIVE: We aimed to determine whether polymorphisms of the IL-18R α gene promoter were associated with susceptibility to tuberculosis in Chongqing, China.

METHODS: In 123 patients (91 children and 32 adults) with tuberculosis and 249 normal controls (167 children and 82 adults) in Chongqing, we analyzed the polymorphisms at positions -69T/C and -638T/C in the promoter

of IL-18R α by using polymerase chain reaction with sequence-specific primers.

RESULTS: Allele and genotype frequencies at position -638 of the IL-18R α gene polymorphisms were similar in patients with tuberculosis and normal controls ($P > .05$). However, the frequency of -69/CC was significantly lower in patients with tuberculosis than in controls ($\chi^2 = 8.484$; $P = .004 < .05$). The frequency of -69/TT was significantly higher in patients with tuberculosis than in controls ($\chi^2 = 4.027$; $P = .045 < .05$). The frequency of allele C at position -69 in tuberculosis was significantly lower than that in controls ($\chi^2 = 9.816$; $P = .002 < .05$). The frequency of allele C at position -69 in patients with severe tuberculosis was significantly lower than that in patients with pulmonary tuberculosis ($\chi^2 = 4.664$; $P = .031 < .05$).

CONCLUSIONS: Polymorphisms of the IL-18R α gene at position -69 were associated with susceptibility to tuberculosis in Chongqing. The people with allele C at position -69 may be protected against mycobacterium tuberculosis infection. Moreover, the position -69 of IL-18R α may be associated with a severe degree of tuberculosis.

PLACENTAL ADENOVIRAL GENOME: POLYMERASE CHAIN REACTION DETECTION AND PLACENTAL HISTOLOGY IN PRETERM AND TERM INFANTS

Submitted by Eufrosini Tsekoura

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INTRODUCTION: Intrauterine infection is an important cause of spontaneous preterm birth. However, evidence-based etiology for the causative role of viral infection is still lacking. Intervillous trophoblasts express adenovirus receptor. Infection of trophoblast cells in vitro by adenovirus early in pregnancy has shown increased apoptosis. Adenovirus early in pregnancy may cause placental dysfunction. Mature syncytiotrophoblasts do not express adenovirus receptor.

OBJECTIVE: The aim of this study was to test the hypothesis that detection of adenovirus in placental tissue is associated with preterm birth and correlates with placental histopathological findings that are suggestive of infection.

METHODS: Placentas were prospectively collected from consecutive deliveries. Detection of the adenovirus genome was tested by polymerase chain reaction assay. Placental histology and immunohistochemistry studies with monoclonal antibody CD45 were evaluated for

signs of placental inflammation in the samples that tested positive for adenovirus.

RESULTS: Between January 2005 and December 2006, 193 placenta samples (71 from preterm deliveries and 122 from term deliveries) were collected in Alexandra's Maternity Hospital in Athens, Greece. The adenoviral genome was isolated in 54 (28%) of 193 placentas. The frequency of adenovirus detection in preterm placentas compared with those from term placentas was significantly increased (29 of 71 [41%] vs 25 of 122 [20%]; $P = .002$; odds ratio [OR]: 2.6 [95% confidence interval (CI): 1.4–5.1]). Stratification by gestational age (GA) revealed a stronger association between preterm delivery and adenovirus detection as GA decreased below 33 weeks (GA \leq 29 weeks, OR: 2.8 [95% CI: 1.1–7.0]; and GA 30–33 weeks, OR: 2.7 [95% CI: 1.1–6.5]). In the subgroup of deliveries at 34 to 36 weeks' GA, the association was no longer significant (OR: 2.6 [95% CI: 0.9–7.0]). Adenoviral genome detection followed the seasonal variation of adenovirus respiratory infections (beginning of March to end of June). Chorioamnionitis was present more frequently in the adenovirus-positive preterm placentas compared with term placentas ($P = .006$). The presence of villitis ($P = .03$) and chorioamnionitis ($P = .02$) was significantly increased in the adenovirus-positive preterm placentas compared with preterm adenovirus-negative placentas.

CONCLUSIONS: Our results indicate that there is an association between placental adenoviral genome detection and spontaneous early premature birth. Adenovirus may cause preterm birth through placental inflammation (chorioamnionitis and villitis).

OUTBREAK OF HUMAN METAPNEUMOVIRUS INFECTION IN CHILDREN IN CHONGQING, CHINA

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INTRODUCTION: Human metapneumovirus (hMPV) is a newly discovered respiratory pathogen. Understanding of the epidemiology of hMPV infection is limited in China.

OBJECTIVE: The objective of this study was to describe an outbreak of hMPV infection in Chongqing, China, and study the high coinfection rates of hMPV and respiratory syncytial virus (RSV).

METHODS: A total of 93 nasopharyngeal aspirates (NPAs) were collected from hospitalized children with acute respiratory diseases during December 2006 to January 2007. Total RNA was extracted from NPAs by using QIAmp viral RNA minikit and amplified for hMPV F gene and RSV G gene by real-time reverse-transcrip-

tion polymerase chain reaction (RT-PCR) and traditional PCR, respectively. Most of the hMPV-positive samples were confirmed by traditional RT-PCR and subsequent nucleotide sequence analysis.

RESULTS: Of 93 NPAs, 38 (40.9%) were positive for hMPV and 52 (55.9%) were positive for RSV. Twenty-three (24.7%) revealed coinfection with both viruses. Ages of patients with hMPV infection ranged from 1 month to 31 months; 78.9% were younger than 2 years, and 47.4% were younger than 6 months. Cough was the most common symptom, 78.9% (30 of 38) had wheezing, and 42.1% had fever.

CONCLUSIONS: HMPV seems to be an important respiratory pathogen in young children in Chongqing, China. Coinfection of hMPV and RSV may frequently occur during the winter season. Whether coinfection leads to more severe disease remains unknown.

Neonatology

INFANT-VENTILATOR INTERACTION CAN AFFECT CEREBRAL BLOOD FLOW IN PRETERM INFANTS: COMPARISON BETWEEN 2 MODES

Submitted by Ehab Saoud Abd El-Moneim

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INTRODUCTION: Disturbance of cerebral blood flow (CBF) has been associated with neonatal brain injury. Because CBF is greatly influenced by mechanical ventilation, it is important to consider the effect of ventilation mode on CBF. We have shown that pressure-support ventilation combined with volume-guarantee mode (PSV-VG) would lower ventilation pressures and improve infant-ventilator synchrony when compared with synchronized intermittent mandatory ventilation (SIMV).

OBJECTIVE: Our aim was to compare the effect of PSV-VG and SIMV on CBF.

METHODS: To study an on/off effect, 33 preterm infants (mean gestational age: 26.6 ± 2.2 weeks) were switched from SIMV to PSV-VG and back again to SIMV. By using Doppler techniques, anterior cerebral artery pulsatility index (PI_{aca}), superior vena cava flow (SVCF), and aortic minute distance (MD_{ao}) were measured in each phase. Infants were grouped according to patency of ductus arteriosus.

RESULTS: When the duct was closed, the PI_{aca} decreased significantly ($P = .002$), which indicates higher

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