

### Molecular Epidemiologic Analysis of Group A Rotaviruses in Children with Diarrhea in Wuhan City, China, 2007

X. Zhou<sup>1,\*</sup>, N. Kobayashi<sup>2</sup>, Y.H. Wang<sup>1</sup>, Z.R. Zhu<sup>1</sup>, D.J. Zhou<sup>1</sup>, S.H. Sun<sup>3</sup>

<sup>1</sup> Wuhan Centers for Disease Prevention and Control, Wuhan, China

<sup>2</sup> Department of Hygiene, Sapporo Medical University School of Medicine, Sapporo, Japan

<sup>3</sup> Wuhan Children's Hospital, Wuhan, China

**Background:** Rotaviruses are the major etiological cause of acute viral gastroenteritis in infants and young children worldwide, primarily in developing countries, producing a significant disease burden.

**Methods:** To describe epidemiologic features and genetic characteristics of group A rotaviruses causing diarrhea in children and to estimate the relatedness or origin of the rotaviruses, a survey was conducted in Wuhan, China, 2007. A total of 889 stool specimens from diarrheal patients under 14 years old from Wuhan Children's Hospital were analyzed. Many symptoms such as vomit, cough, fever, dehydration were marked. The positive rotavirus specimens was determined by PAGE and rapid immunochromatographic assay.

**Results:** A total of 236 positive specimens performed further genetic analysis. Genotyping of rotavirus was determined by RT-PCR. By sequencing and phylogenetically assigning, two G9 strains were found out. In total, rotavirus detection rate of all stool specimens is 26.55% (236/889). By PAGE and rapid immunochromatographic assay, the detection coincidence rate was 86.42%. Unfortunately, the detection rate was independent of the symptoms. There were extremely significant differences of the detection rates in different age groups ( $\chi^2 = 33.53$ ,  $P < 0.01$ ). The detection rates in the winter season (42-64%), from October to December, were significantly higher than the other seasons ( $P < 0.05$ ). Throughout the study period, P[8] was the most frequent P serotype (88.9%), and G3 was the most frequent G serotype (75.3%), and was mostly associated with VP4 genotype P[8] (68.4%). And the G-type/P-type combination G3P[8] was the most common, followed by G1P[8], G2P[4] and G3P[6]. G1+G3P[8], G3+G9P[8], G2+G3P[4] and other mixed G/P types were detected also. VP7 gene sequences of G9 rotaviruses were detected out by sequencing for two strains, showed extremely high sequence identities (99–100%) to each other and to a few G9 rotavirus strains reported in Asia.

**Conclusion:** In our present study, the rotavirus-positive rate in children specimens was 26.55% in total. The monthly prevalence of rotavirus infection showed significant winter seasonality. It was evident that the G3P[8] rotaviruses were the most prevalent throughout the study period. These findings suggest that transmission of the G3 rotaviruses might have occurred endemically in Wuhan. The two G9 strains were phylogenetically assigned to lineage 3.

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### Establishment of BALB/c Mice Model for the Acute and Chronic Forms of Human Melioidosis Caused by *Burkholderia pseudomallei*

R. Perumal Samy\*, P. Gopalakrishnakone, H. Bow, V.T.K. Cow

National University of Singapore, Singapore, Singapore

*Burkholderia pseudomallei* are the causative agent of melioidosis, a disease being increasingly recognized as an important cause of morbidity and mortality (70%) in many regions of the world. The disease is found predominantly in Southeast Asia and Northern Australia. It is highly endemic in Thailand, especially the North-Eastern part, Malaysia and Singapore. Although the first case of melioidosis in Singapore was reported in 1920 and fatal septicaemic cases of healthy young adults were reported in 1989. Acute infection is the most severe, with rapid onset of non-distinct symptoms of medical examination. We evaluated the suitability of BALB/c mice as animal models for the acute and chronic forms of human melioidosis. Five groups of eight weeks old BALB/c mice were inoculated with 150  $\mu$ l of  $1.2 \times 10^2$ – $3.5 \times 10^8$  by intravenous; control received 150  $\mu$ l of PBS. The mortality of animals was observed 12, 24, 36, 48, 96 hours. Results revealed that the lethal does 50 values of 5 cells and  $2.7 \times 10^5$  for BALB/c mice. All the mice died within 96 h after the subsequent injection with *B. pseudomallei*. The post mortem revealed the presence of significant relatively larger more confluent, abscessation of the spleen and less frequently of the liver. Following intravenous challenge with *B. pseudomallei*, large abscesses with focal area of necrosis, surrounded by a rim of meshed fibrous tissues are evident by histopathologically. This study shows the BALB/c mouse strain to be highly susceptible to infection with *B. pseudomallei*. The mice suffered a rapidly-progressive bacteraemia which resulted in host death by 96 h.

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#### *Toxoplasma gondii* Infection Induces Lipid Metabolism Alterations in the Murine Host

I. Milovanovic<sup>1,\*</sup>, A.M. Trbovich<sup>1</sup>, M. Vujanovic<sup>2</sup>, I. Klun<sup>2</sup>, B. Bobic<sup>2</sup>, A. Nikolic<sup>2</sup>, V. Ivovic<sup>2</sup>, O. Djurkovic-Djakovic<sup>2</sup>

<sup>1</sup> Institute of Pathophysiology, School of Medicine, University of Belgrade, Belgrade, Serbia

<sup>2</sup> Department of Parasitology, Institute for Medical Research, University of Belgrade, Belgrade, Serbia

**Background:** Host lipids have recently been implicated in the pathogenesis of *Toxoplasma gondii* infection. It has been shown that cholesterol uptake from the host plasma membrane is essential for parasite replication *in vitro*. To determine if *T. gondii* infection influences the host lipid status *in vivo*, we assessed serum lipid levels at different time points during experimental *T. gondii* infection.

**Methods:** Groups of 6-week old female Swiss-Webster mice were infected ( $n = 54$ ) by gavage with 8 cysts of the *T. gondii* BGD-1 strain (human origin type-2 strain) or left uninfected ( $n = 18$ ) to serve as control. All mice were bled at day