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7.1

Hantaviruses: from Discovery to Vaccines

H. W. Lee M.D., Ph.D.1, D. Y. Chung Ph.D.1, J. Y. Song M.D., Ph.D.1,2

The National Academy of Sciences, Republic of Korea¹

Korea University College of Medicine2

Hemorrhagic fever with renal syndrome (HFRS) in Eurasia and hantavirus pulmonary syndrome (HPS) in Americas are re-emerging and emerging viral diseases and causative agents are hantaviruses. There are about 10,000 – 15,000 HFRS patients and hundreds HPS patients with 1-60% fatality in the world each year. History of HFRS is long and very interesting and discovery of the etiologic agent was made from field mice caught near Hantaa river in Korea, 1976. We will present how we made the first hantavirus isolation, Hantaan virus and vaccine development. A severe form of HFRS caused by Hantaan and Seoul virus and HPS are new diseases. We also present new clinical form with 60% fatality, HPS, caused by novel hantaviruses from Asia and Balkan countries. A new clinical form with 60% fatality, HPS, caused by novel hantaviruses occur in Asia and Balkan countries. A new clinical form with 60% fatality, HPS, caused by novel hantaviruses occur in Americas. A moderate form of HFRS caused by Seoul virus occurs in Asia and a mild form of HFRS caused by Puumala virus occurs in Europe. Recently, we demonstrated hantavirus patients in SE Asia and some islands in WPR. The reservoirs of hantaviruses are rodents and other small mammals including bats. The mode of transmission of HFRS and HPS is aerosol. There many different serotype hantaviruses are circulating around the world. Some strains of Seoul virus produce clinical disease but some are not. An inactivated Hantaan virus vaccine (Hantavax) against HFRS is available in Korea and recently we developed a Hantaan-Puumala combination vaccine for prevention of HFRS in the European part of Asia. The effectiveness of HFRS vaccines has been demonstrated in Korea, Yugoslavia and China. The three dose-vaccination resulted in a greater N antibody seroconversion rate than the 2 dose vaccination. Seroconversion was 100% after 3 doses and N antibody titers persisted longer than 2 doses. At 1 year from basic vaccination, the mean N antibody titer was 77.5. In the 21 century, it its highly possible to identify new hantavirus illness in some parts of the world where the disease is not known to exist because of ubiquity of hantaviruses as and the availability of diagnostic tools.

Keywords: Hantavirus, Hemorrhagic Fever with Renal Syndrome, Hantavirus Pulmonary Syndrome

7.2

Pattern of Children’s Diseases in Malaysia for Ten Years (2000-2009):

Case Study in Selected Hospitals

Che Wan Jasimah bin Wan Mohamed Radzi and Lai Shiew Ping

Department of Science and Technology Studies, Faculty of Science, University of Malaya,

Kuala Lumpur, Malaysia

(Email: jasimah@um.edu.my)

Children are an important generation for the country. A healthy child will lead to a nation of excellence. The main focus of this paper is to investigate the patterns of disease in children as well as to investigate the top five diseases in children aged below 18 year-old for ten years time. The study was conducted at two hospitals. There are Hospital Melaka, Melaka and University of Malaya Medical Centre (UMMC), Kuala Lumpur. Database of morbidity and mortality report of inpatient from two hospitals has been used as a method to collect the data. Results showed that from year 2000 to 2009, in Hospital Melaka, there were 112,863 cases involving 372 types of diseases while in UMMC, there were 164,233 cases involving 391 types of diseases. The top five children diseases in Hospital Melaka were neonatal jaundice, pneumonia, diarrhea, acute appendicitis and transitory endocrine & metabolic disorder for newborns. Furthermore in UMMC, the top five children diseases were newborn problems that caused by maternal factor and labor process, leukemia, diarrhea, thalassaemia, and neonatal jaundice. Besides that, there are only 2 diseases are some in the list of top 5 diseases at both hospitals, they are neonatal jaundice and diarrhea. Finally, studies also found that the top five children diseases in the two selected hospitals were not the main cause of child mortality. The main cause of children death was different from the top five diseases. Where in both hospitals the two causes of death are disorders related to short gestation and low birth weight and not elsewhere classify and other congenital malformations. This finding is very important to show that our modern treatment can help to reduce the diseases that can cause of death.

Keywords: Health, Neonatal Jaundice, Mortality, Pneumonia, Disorder