regulation of antigen presentation. The local pulmonary immune response, particularly the Th1/Th2 immune response during acute MERS-CoV infection is not fully understood. The purpose of this study was to study the pulmonary gene expression profile of Th1 and Th2-related cytokines, chemokines, and receptors (Th1 & Th2 responses) during acute MERS-CoV infection using RT^2 Profiler PCR Arrays and expression level of primary inflammatory cytokines/chemokines. Results and Discussions: Our results showed a downregulation of Th2, inadequate (partial) Th1 immune response and high expression levels of inflammatory cytokines IL-1 α and IL-1 β and the neutrophil chemoattractant chemokine IL-8 (CXCL8) in the lower respiratory tract of MERS-CoV infected patients. Moreover, we identified a high viral load in all included patients.Genes encoding Th1 and Th2 cytokines/chemokines were largely downregulated in the lower respiratory tract of MERS-CoV infected patients, with selective upregulation of IL-18, CXCR3, SOCS5, and CCR2. It is possible that overexpression of IL-1 α, IL-1 β, IL-8 (CXCL8), IL-18, CXCR3, SOCS5, and CCR2 play a vital role in the severity, immunopathology, and case fatality of MERS-CoV infected patients. We observed a correlation between inflammatory cytokines, Th1, and Th2 downregulation and the case fatality rate.

Conclusions Th1 and Th2 response downregulation, high expression of inflammatory cytokines, and high viral load may contribute to lung inflammation, severe infection, the evolution of pneumonia and ARDS, and a higher case fatality rate. Further study of the molecular mechanisms underlying the Th1 and Th2 regulatory pathways will be vital for active vaccine development and the identification of novel therapeutic strategies.

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PP148

Molecular Epidemiology of Human Adenovirus Infections in Saudi Arabia Pediatric Patients

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Human adenoviruses (HAdV) are one of the leading cause of acute respiratory diseases (ARD), gastroenteritis (GE), community-acquired pneumonia (CAP), urinary infections, conjunc¬tivitis and probably obesity. The objective of this study was to characterize the variation of AD genotypes from children under 5 years old at a tertiary care hospital in Riyadh, Saudi Arabia. Between October 2013 and December 2014, a total of 620 stool samples with acute diarrhea were collected. These samples were tested for adenovirus by PCR-based molecular typing. In 2013, HAdV was detected in 17.5% (56/320) of affected cases, additional 147 samples were identified HAdV-positive from a total of 300 (49%) in 2014. Nucleotide sequences of all positive samples were analyzed and revealing various genotypes. Interestingly, only four genotypes were predominant during 2013 and 2014 data which are 41, 49, 52 and 1, but with different proportions. This study confirmed previous findings of Ad 41 with the highest proportion as well as AD-2, -4 and -1. Yet, adding AD-75 and AD-31 which have never been reported in Saudi Arabia. Moreover, neither sexes or seasonal effected considerably in the adenoviruses detection in Saudi Arabia. In conclusion, these data is delivering an insight into the genetics of Adenovirus in young children which will assist in understanding of genotypes involved and launching of vaccination in the country.

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PP149

Pediatric Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Infection – UAE

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Introduction In 2012, MERS-CoV was identified in Saudi Arabia and resulted in more than 2442 confirmed cases worldwide by May 2019. MERS-CoV infection in children is less common. A review of MERS-CoV in children from 2012 to April 2016 summarized the clinical manifestation of 31 reported cases. Most children were asymptomatic or had mild respiratory symptoms, and severe infection reported in patients with comorbid conditions. We aimed to study the clinical characteristics of pediatric MERS CoV infected cases in UAE supported by literature review.

Method A retrospective multicenter chart review study was conducted for MERS-CoV cases in Abu Dhabi Emirate (May 2012 – May 2019). Demographic, clinical and laboratory data were analyzed. We reviewed WHO outbreak surveillance reports published online to identify pediatric MERS-CoV cases from April 2016 to June 2019.

Results We describe favorable outcomes of MERS-CoV infection in three children identified in UAE. Two patients had household contact with MERS-CoV infected family members and another patient travelled to Saudi Arabia. MERS-CoV was confirmed by PCR from nasopharyngeal aspirates and duration of viral shedding ranged from 4 to 11 days. One patient was asymptomatic and other two had mild respiratory symptoms. Laboratory data and chest X rays were normal.

We reviewed WHO surveillance data and identified 11 pediatric MERS-CoV cases from April 2016 to June 2019. Mean age of 14.9 years (6 females, 5 males). The majority of pediatric outbreak was in year 2017 (8 cases) and most cases identified in Saudi Arabia. The main risk factor was household infection. Two patients died due to severe MERS-CoV infection. There are an estimated 42 pediatric MERS-CoV cases reported globally, with a mortality rate of 9.5 % (4 cases).

Conclusion Pediatric MERS-CoV infection is acquired mainly through household contact. It has favorable outcomes and the mortality rate in children remains lower than adults.

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PP150

Severe Leptospirosis with Pulmonary Hemorrhage; The Role of Intravenous Hydrocortisone

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Leptospirosis is an endemic zoonosis caused by spirochetes of the genus Leptospira that typically occurs in tropical regions. Pulmonary hemorrhage which is the frequent cause of mortality in leptospirosis is either underdiagnosed or only discovered at autopsy.