3. VIRAL INFECTIONS MANAGED BY MEANS OF VACCINATION AT THE STAGE OF DESTRUCTION AND ELIMINATION

3.1 doi: 10.15789/2220-7619-2018-4-3.1

PROCESS FOR IMPLEMENTING POLIOVIRUS ENVIRONMENTAL SURVEILLANCE IN COTE D'IVOIRE FROM DECEMBER 2016 TO DECEMBER 2017

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Poliomyelitis surveillance underpins the entire Global Polio Eradication Initiative. Two major surveillance strategies are essential and complementary. Surveillance of acute flaccid paralysis in areas with continued transmission and environmental monitoring in countries declared polio-free and in endemic countries. Environmental monitoring is a tool to provide evidence of the absence of vaccine-related viruses after cessation of the use of oral polio vaccine and to demonstrate the circulation of polio viruses and non-polio enteroviruses in the vaccine environment. It aims to detect the silent circulation of wild polioviruses, vaccines and circulating viruses derived from oral polio vaccine. An initial meeting with the actors involved allowed the identification of probable sites. The capacity building of the Polio laboratory was initiated by the development of a specific room followed by a staffing of laboratory equipment and reagents. The surveillance team was formed. Sites were selected with 2 sites in Yopougon Health District and 1 site in Adjamé Plateau-Attecoubé District. Collector training and validation of the technical procedures for sample analysis and dissemination of results were made. The collection was done between 6am and 7.30am twice a month per site with immediate delivery to the laboratory. From December 2016 to December 2017, 78 wastewater samples were received treated in the laboratory. 71 samples were positive with 32 vaccine strains, 17 non-polio enteroviruses and 22 vaccine strains and enteroviruses. These results confirm the proper implementation of environmental monitoring with the support of WHO.

3.2 doi: 10.15789/2220-7619-2018-4-3.2

ANALYSIS OF MEASLES CASES IN CHILDREN DURING THE OUTBREAK IN MONGOLIA, 2015

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The incidence of measles declined dramatically worldwide due to the introduction of the measles vaccine and similarly, measles incidence in Mongolia went down, resulted in elimination in 2014 comparing to an average incidence 93.4 (39.9–218.3) per 10 000 population in pre-immunization period, 1960–1972. We investigated severe measles cases admitted into intensive care unit of the national center for communicable diseases in period of March-July, 2015, made analysis of demographics, clinical and epidemiological characteristics of the patients. In addition, periodic nationwide measles supplemental immunization activities were implemented in 1994, 1996, 2000, 2007, 2012. Coverage of two doses of measles-containing vaccine (MCV1 and MCV2) was constantly reported ≥ 95% since 2001 and measles cases were not registered since 2011 in Mongolia.

Median age of 305 patients stayed in ICU with measles was 6.2 months. Of those, 243 (79.7%) cases were aged below 9 months (before the age of eligibility for MCV1), 62 (20.3%) were aged 9 months — 9.2 years. Therefore, 283 (92.8%) were unvaccinated against measles, 8 (2.62%) had received 1 dose, 5 (1.63%) had received 2 doses and 9 (2.95%) had unknown vaccination status. 174 (57%) were male. 84 (27.5%) were exposed at home, 146 (48%) in healthcare facility and 75 (24.5%) were not aware of exposure. 41 (13.44%) patients were aged over 10 months and among them 25 (61%) were unvaccinated and 8 (19.5%) had unknown immunization status. In addition, 16 of those had an underlying background disease, however, there was not found relationship between presence of background disease and missing vaccination ($p = 0.7326$).

Although Mongolia has kept a high level of immunity against measles in the whole population of the country, there still remain unvaccinated population of children in the community who can cause measles outbreak through the contact with infected ones and can increase risk of severe measles complication requiring Intensive care.

3.3 doi: 10.15789/2220-7619-2018-4-3.3

DETECTION OF PRIMATE ERYTHROPARVOVIRUS 1 DNA IN BLOOD SERUM OF PATIENTS WITH ERYTHEMA

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Primate Erythroparvovirus 1 (Parvovirus B19, B19V) is a pathogen of human. The virus is causative agent of wide range of illness: infectiosum erythema, arthrolgy, aplastic crisis, myocarditis, fetal hydropsis and others. There are two usual methods for diagnostic of parvovirus B19 infection, PCR and ELISA. In Russian Federation PCR is popular because it's more available then ELISA.

The aim of the study was the analysis of Primate erythroparvovirus 1 DNA prevalence in blood serum of patients with erythema. Blood sera (n = 124) were collected in 2015–2017 from patients with erythema and fever (t ≥ 38.5°C). All samples were negative for IgM to measles and IgM to rubella and were positive for IgM-PVB19. DNA was extracted by "RIBO-prep" (InterLabService Ltd., Russia). The diagnostic PCR test "AmpliSens® Parvovirus B19-FRT" (InterLabService Ltd., Russia) was used. Parvovirus B19 DNA was detected in 86 of 124 samples (69.4%). DNA positive sera were collected from 3 to 45 days from the moment when erythema has been manifested. Among these 86 sera 66 were collected in the first week from erythema appearance. Viral loads were: 10^6 copies of DNA PVB19/ml — in 14% cases; 10^5 — in 30% blood serums; 10^4 — 28% samples; 10^3 copies of DNA PVB19/ml — in 14% cases, thereover, viral loads of 47.7% samples was higher than 10^5 copies of DNA PVB19/ml. One sample was detected with 10^9 copies DNA PVB19/ml.

Our results indicate that the combination of ELISA and PCR methods is optimal for diagnosis and choice of the treatment of parvovirus B19 infection.