

The 36th Global and Local Infectious Diseases Research Seminar



January 16th , 2025
16:30-17:30

Scan here to register

<https://forms.gle/SvB1wtbTHtucXpo3A>



Presenter : Sheikh Mohammad Fazle AKBAR
Chief Adviser, Clinical Research Organization, Bangladesh

Venue: OITA Univ. RCGLID Meeting Room & Zoom

Dengue Virus Infection in Bangladesh: Dissection of Its Natural Course and Pathological Potential

Dengue, caused by the dengue virus (DENV), has been a significant health concern in tropical and subtropical regions for several decades. According to the World Health Organization (WHO), there has been a substantial increase in dengue cases and deaths in both endemic and non-endemic countries in recent years, posing a growing global health challenge. Bangladesh, a South Asian country with 170 million people living in a densely populated area, has maintained a dengue-endemic status for 25 years, with heterogeneous prevalence. However, as in many other countries, dengue has become a serious, life-threatening issue in Bangladesh in recent years. This seminar will explore the natural course of DENV infection and its pathological potential in Bangladesh using epidemiological and clinical data.

Since the mid-COVID-19 pandemic (2021), an increased number of hospitalized dengue patients and dengue-related deaths have been reported in Bangladesh. Bangladesh recorded consecutively higher dengue fatality rates in 2021, 2022, and 2023 than other major dengue-endemic countries. Our cohort study (during 2021–2023) revealed that approximately 50% of dengue patients tested positive for DENV IgG, while more than 80% tested positive for SARS-CoV-2 IgG. This indicates that many dengue patients in Bangladesh had prior DENV and SARS-CoV-2 infections during this time. Patients with both DENV IgG and SARS-CoV-2 IgG exhibited more severe disease than those with only DENV IgG or SARS-CoV-2 IgG. Notably, a positive correlation ($r = 0.90$) was observed between higher SARS-CoV-2 IgG titers and severe dengue.

Additionally, a shift in DENV serotypes was detected during the study period. DENV-3 was predominant in 2021 and 2022, while DENV-2 emerged as the dominant serotype in 2023 when Bangladesh recorded the world's highest number of dengue-related deaths. Collectively, altered immunity due to prior DENV and SARS-CoV-2 infections, coupled with shifting DENV serotypes, may have contributed to the severe dengue burden observed in recent years in Bangladesh.

Manager Dr. Sakirul Khan
(Lecturer, Research Center for Global and Local Infectious Diseases)

Seminar Contact

Research Center for Global and Local Infectious Diseases (5444)

TEL 097 (586) 5444 E-mail glocal@oita-u.ac.jp