

Malacological Epidemiology of *Opisthorchis* spp. and Sewage Viral Epidemiology of SARS-CoV-2: Interrelationship in Big City

Opisthorchis spp. Malakolojik Epidemiyoloji ve SARS-CoV-2'nin Kanalizasyon Viral Epidemiyolojisi: Büyük Şehirde Karşılıklı İlişki

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Dear Editor,

Environmental epidemiology surveillance is an important tool in environmental medicine and public health. Many infectious diseases are associated with contamination in environmental samples and the data from environmental surveillance are useful for public health planning for management of the problem (1). In clinical parasitology, contamination of parasite egg and metacercariae are possible and it might be related to disease outbreak.

In tropical countries, contamination in big city is also possible and the problem is usually neglected.

Here, the authors discuss on the situation from Indochina where opisthorchiasis is very common (2). For surveillance, environmental monitoring of metacercariae in intermediate host is regularly done. Malacological epidemiology of *Opisthorchis* spp. is an important public health parameter. Since 2020, the new emerging severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) infection also attack Indochina and this area is the second area after China that disease has existed since early January 2020 (3). Until present, the disease is still not successfully controlled. Disease surveillance is regularly done. Of several surveillance systems, sewage viral epidemiology of SARS-CoV-2 is also important public health surveillance in this area (4).

In the same area that both parasitic disease and Coronavirus disease-2019 (COVID-19) are common,

little data on environmental epidemiology are available. Here, the authors reappraise on available data from an area in Indochina that COVID-19 and opisthorchiasis are common problems.

The authors reanalyzed the most recent public available data in 2021 on malacological epidemiology of *Opisthorchis* spp. and sewage viral epidemiology of SARS-CoV-2 in a city area (GPS location 13.76779525743989, 100.6687726131797) in Indochina (4,5). Based on primary data from the environmental metagenomics studies (4,5), primary data on location related prevalence of both *Opisthorchis* spp. Contamination in snails and SARS-CoV-2 contamination in waste water are collected and used for construct of overlapping GIS map as shown in Figure 1.

Regarding relationship, although there is no statistical association, there is a trend of co-occurrence of contamination of both *Opisthorchis* spp. in snails and SARS-CoV-2 in sewage samples in the same area. Since poor sanitation is the rooted cause of contamination of either parasite or virus into environmental samples, hence, the environmental contamination detection should give the result in the same way. Detection of contamination by an infective agent might be an indirect clue for requirement for sanitation improvement for prevention for any other pathogens as well.

Keywords: *Opisthorchis*, SARS-CoV-2, epidemiology, environment



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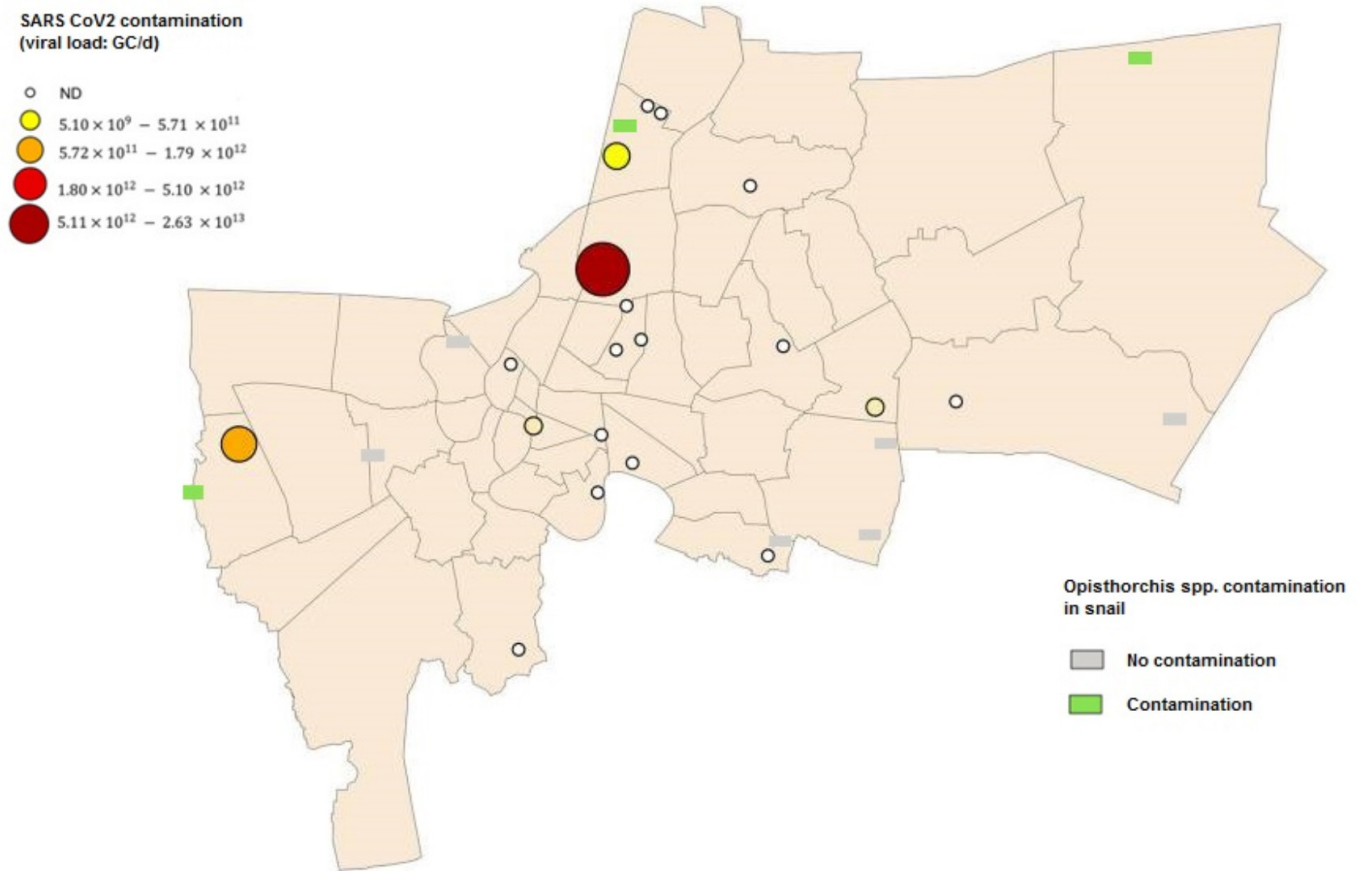


Figure 1. GIS map showing malacological epidemiology of *Opisthorchis* spp. and sewage viral epidemiology of SARS-CoV-2
SARS-CoV-2: Severe acute respiratory syndrome-coronavirus-2

Anahtar Kelimeler: *Opisthorchis*, SARS-CoV-2, epidemiyoloji, çevre

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