Mosquito Surge: Global Warming and Geographical Factors

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Climate change caused by global warming formed an environment that is advantageous for vectors and pathogens. Moreover, Incheon, Korea is border on ports and airports, so the possibility for vectors and pathogens to flow overseas are very high. Therefore, we conducted research to control mosquito-borne diseases by monitoring mosquitoes. From June 1st to September 15th, 2021, we collected mosquitoes in Incheon. we analyzed the mosquito frequency and species distribution in this area. And the presence of flavivirus was determined through RNA extraction and RT-PCR. We analyzed mosquito outbreaks through linear regression analysis to determine the correlation between mosquito density and meteorological factors. In addition, we compared the pattern of mosquito outbreaks by latitude based on the data in the MMV's World malaria report. During this research period, a total of 1,231 mosquitoes were collected. Among the collected mosquitoes, it was confirmed that there were no pathogens. As a result of analyzing the correlation between mosquito density and weather factors, it was found that the occurrence of mosquitoes was proportional to the temperature factor and the relative humidity. As a result of comparing malaria outbreaks by latitude, three major types of malaria outbreaks showed. This data on the trend of mosquito outbreaks in Incheon and vector-borne disease virus infection may provide baseline data on mosquito control. Although no pathogens were found in this mosquito survey, the risk of overseas inflow remains, and also changes in the frequency of mosquito outbreaks caused by climate change. Therefore, continuous mosquito monitoring in Korea is necessary.

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