Simulation results by the supercomputer "Fugaku" announced regarding the effects of masks and ventilation for prevention of droplet transmission

A new report has been received titled "Estimate of droplet transmission of virus in an indoor environment and preventive measures," one of the researches to investigate preventive measures for COVID-19 infection using the supercomputer "Fugaku." The research reported how effectively different types of masks made of different materials could prevent droplet transmission. The research also reported the simulation results of ventilation in four different indoor environments.

With regard to the effect of using masks, it was shown that the release of droplets was prevented by 70% to 80% by masks made of both non-woven fabrics and handmade masks (polyester/cloth). The result also demonstrated that masks had the effect of not only preventing the release of droplets but also blocking the inhalation of virus to a certain extent.

Regarding indoor ventilation, it was shown that air conditioners are effective for circulating the air based on the simulation results of four patterns of airflow in hospitals, offices, classrooms, and multipurpose halls, and that opening doors and windows located in opposite corners allows air to flow easily, even in classrooms where all windows cannot be fully opened.

As small droplets may come in through the gap between the mask and the face, "it is effective to wear a mask while ventilating the room at the same time," said Makoto Tsubokura, a professor at Kobe University and team leader at the RIKEN Center for Computational Science.

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