CLOUD JAPAN: HIGH POPULATION-BASED HOSPITALIZED CDI INCIDENCE IN OTA-KU, TOKYO, JAPAN

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Background

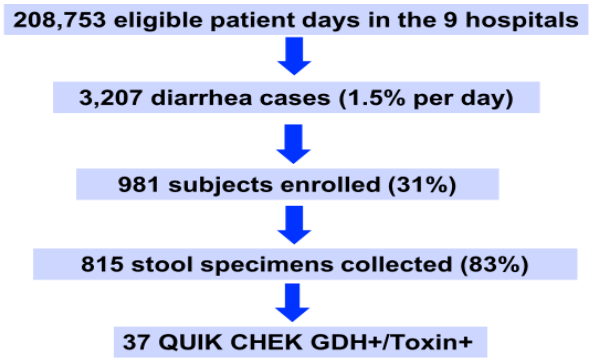
Clostridioides difficile is an important cause of morbidity and mortality. *C. difficile* infection (CDI) risk factors include antibiotic use, hospitalization and age. Japan has an aging population with a high hospitalization rate and antibiotic use. Although a multi-prefecture study with 30 CDI tests/10,000 patient-days, found a hospital-based incidence of 7.4 CDI cases/10,000 patient-days in 2015, estimates of the population-based hospitalized CDI incidence in Japan are lacking.

Methods

CLOUD Japan conducted surveillance for new onset diarrhea (≥3 stools with Bristol scale 5-7 in 24 hours) in 9 hospitals in the Ota-ku (population 734,880) Tokyo beginning in December 2018. Participating hospitals had 2,133 beds, representing 45% of the adult hospital beds in Ota-ku. Ota-ku residents ≥50 years with new onset diarrhea were invited to participate. After informed consent, a stool specimen was collected. Preliminary results are based on QUIK CHEK Complete testing at LSI Medience in Tokyo; more sensitive PCR/CCNA results are pending and will likely result in a higher incidence.

Results

Through December 6, 2019, there were 3,207 new onset diarrhea cases among 208,753 eligible patient-days (1.5 cases per 100 patient-days). Among patients with new onset diarrhea, 981 were enrolled (31%) and 815 had a stool specimen tested (83%); 39 CDI tests/10,000 patient-days. There were 37 QUIK CHEK complete CDI cases (4% of stools). When adjusted for under-enrollment, the hospital-based incidence was 7.2 CDI cases/10,000 patient-days. When adjusted for the Ota-ku hospitalization share of the participating hospitals, the population-based incidence was 86 hospitalized CDI cases/100,000 persons ≥50 years per year and 124 hospitalized CDI cases/100,000 persons ≥65 years per year.



CDI testing density
= 39 CDI tests / 10,000 patient-days

Adjusted hospital-based CDI incidence
= 7.2 CDI cases / 10.000 patient-days in patients ≥50 years

Population-based hospitalized CDI incidence
= 86 hospitalized CDI cases / 100,000 persons ≥50y per year
=124 hospitalized CDI cases / 100,000 persons ≥65y per year

Conclusions

Preliminary CLOUD Japan results found a high population-based incidence of hospitalized CDI; for comparison, the most recent reported incidence in the United States was 163/100,000 persons ≥50 years in 2017. CLOUD Japan and the multi-prefecture CDI study had a similar CDI test density and hospital-based incidence, supporting CLOUD Japan generalizability. Preliminary CLOUD Japan data imply there are >50,000 hospitalized CDI cases in persons ≥50 years of age (including >44,000 in persons ≥65 years of age) in Japan each year. Interventions are needed to reduce this important CDI disease burden.

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