

LETTER TO THE EDITOR

A large increase in Group A streptococcus bacteremia in the 2 month short period in 2024; report from a tertiary care hospital in Chiba, Japan

To the Editor,

Following the COVID-19 pandemic, several European countries and the United States reported a marked increase in scarlet fever and invasive Group A streptococcus (GAS) infection.^{1,2} Although this trend is likely because of reduced exposure and the immunity gap associated with a strict mask policy or social distancing during the pandemic, it is also thought to be related to the emergence and spread of the more toxigenic M1 UK variant.³ In Japan, an increasing number of cases of streptococcal toxic shock syndrome (STSS) caused by GAS have been reported since July 2023.⁴

In the first 2 months of 2024, a large increase in GAS bacteremia was detected at the Japanese Red Cross Narita Hospital, a tertiary teaching hospital with 710 beds. A total of six cases of bacteremia (2.37906 cases/1000 hospital admissions) were detected during the 2 months (Table 1). The median age was 45 years (range: 34–75 years). No patient was severely immunocompromised. The most common

focus of infection was pneumonia with empyema (n=3). The median Pitt bacteremia score and SOFA score were 2 and 3.5, respectively. Among six isolates from these cases, five were serotype T1 and positive for allele-specific PCR for the M1UK lineage.⁵ Two patients died within the first day of hospitalization, and most of the surviving patients required surgical intervention. Given this increase, we analyzed the distribution of cases of GAS bacteremia during 2016–2023. The average number of cases of GAS bacteremia per year was 3.25 cases during 2016–2019 (0.21125 cases/1000 hospital admissions) and 1.75 cases during 2020–2023 (0.11654/1000 hospital admissions), respectively.

Circulation of the M1_{UK} variant strain may have contributed to the large increase in STSS cases in Japan. Previous reports have suggested that the M1_{UK} lineage may drive the observed increase in GAS infections in Europe.³ In Japan, the M1_{UK} strains account for only 6.4% of all 780 strains collected at eight reference centers

TABLE 1 Summary of six patients with bacteremia because of *Streptococcus pyogenes*.

Case	Age	Gender	Underlying condition (s)	Source of infection	Pitt bacteremia score	SOFA score on admission	T serotype	Allele-specific PCR for M1 _{UK} lineage ⁵	Surgical intervention	Length of hospital stay	Outcome
1	58	F	Diabetes Hypertension	Pneumonia Empyema	0	2	T1	Positive	Chest tube drainage	45	Survived
2	75	M	Hypertension Atrial fibrillation	Pneumonia Empyema	14	4	T1	Positive	NA	1	Died (Hospital day1)
3	50	F	None	Necrotizing myometritis	2	0	Untypable	NA	Hysterectomy	19	Survived
4	39	M	None	Pneumonia Empyema	2	7	T1	Positive	Chest tube drainage	43	Survived
5	40	M	None	Fournier gangrene	2	3	T1	Positive	Surgical drainage	37	Survived
6	34	F	None	Focus unknown	12	18	T1	Positive	NA	1	Died (CPAOA)

Abbreviations: CPAOA, cardiopulmonary arrest on arrival; F, female; M, male; NA, not applicable.

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during 2018–2023, but nine out of 19 strains were found to be the M1_{UK} strains in reported STSS cases since August 2023 in the Kanto region.⁴ The incidence of GAS bacteremia in our hospital during the 2 month short period in 2024 was much higher than that before and during the COVID-19 pandemic, and most cases were caused by the M1_{UK} variant strain, which is consistent with the trend in the surveillance data shown above.

In conclusion, this report suggests that the M1_{UK} variant has been spread in certain areas in Japan and is likely to contribute to the large increase in invasive GAS infections.

Physicians should be cautious about this significant increase.

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CONFLICT OF INTEREST STATEMENT

The authors report that there are no competing interests to disclose.

ETHICS STATEMENT

This study was approved by the Ethics Committee of the Japanese Red Cross Narita Hospital under the condition that the confidentiality of all personal data be maintained (approval no: JRCNH-895-01).

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