

ディフィシル菌の分子疫学

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2001 Fiscal Year Final Research Report Summary

Molecular epidemiology of Clostridium difficile

Research Project

Project/Area Number

12670252

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

Bacteriology (including Mycology)

Research Institution

Kanazawa University

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Project Period (FY)

2000 – 2001

Keywords

Clostridium difficile / Antibiotic-associated diarrhea / Molecular epidemiology / PCR ribotyping / PFGE analysis / Community transmission / Family transmission / Epidemic strain

Research Abstract

1. Molecular epidemiology of Clostridium difficile on carriage and transmission in community settings and family members

(1) Out of 1,413 individuals, who were composed of nine groups, overall, 108 (7.6%) individuals were positive for C. difficile by faecal culture but carriage rates among the study groups ranged from 4.2% to 15.3%.

(2) Typing by PCR ribotyping and pulsed-field gel electrophoresis (PFGE) demonstrated clusters, of carriers colonised by a single type in each of three groups.

(3) Two or more family members were C. difficile-positive in five of 22 families examined. C. difficile with an identical type was isolated from persons within only one family.

These findings indicate that cross-transmission of C. difficile can occur in community settings, and that cross-transmission of C. difficile does not occur frequently among family members at home.

2. Molecular analysis of C. difficile from nosocomial outbreaks in Japan

(1) At three hospitals examined, a single PCR ribotype strain (type smz) was predominant and accounted for 22 (65%) of 34, 18 (64%) of 28, and 11 (44%) of 25 isolates, respectively. All of the 51 isolates that represented PCR ribotype smz were nontypeable by PFGE because of DNA degradation.

(2) All 51 type smz isolates belonged to a new serogroup (designated serogroup JP), reacting with the newly prepared antiserum.

(3) The PCR ribotype smz strain was not found among the isolates from healthy adults. These findings indicate that the strain with PCR ribotype smz, PFGE-nontypeable and serogroup JP is likely to be epidemic in Japan.

Research Products (6 results)

All Other

All Publications (6 results)

[Publications] 加藤はる: "PCRリボタイピングおよびパルスフィールド電気泳動タイピングによるClostridium difficile集団発生の解析"日本嫌気性菌感染症研究. 30. 73-77 (2000) ▼

[Publications] H.Kato: "Analysis of Clostridium difficile isolates from nosocomial outbreaks at three hospitals in diverse areas of Japan"Journal of Clinical Microbiology. 39. 1391-1395 (2001) ▼

[Publications] 加藤はる: "3病院で院内感染を引き起こしたClostridium difficileのタイピングによる解析"日本細菌学雑誌. 56. 325 (2001) ▼

[Publications] H.Kato: "Colonization and transmission of Clostridium difficile in healthy individuals examined by PCR ribotyping and pulsed-field gel electrophoresis"Journal of Medical Microbiology. 50. 720-727 (2001) ▼

[Publications] H. Kato: "Analysis of Clostridium difficile isolates from nosocomial outbreaks at three, hospitals in diverse areas of Japan"Journal of Clinical Microbiology. 39. 1391-1395 (2001) ▼

[Publications] H. Kato: "Colonization and transmission of Clostridium difficile in healthy individuals examined by PCR ribotyping and pulsed-field gel electrophoresis"Journal of Medical Microbiology. 50. 720-727 (2001) ▼

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