Assessment of seven culture media for the growth and isolation of Capnocytophaga spp.

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SHORT COMMUNICATION

O-4. ASSESSMENT OF SEVEN CULTURE MEDIA FOR THE GROWTH AND ISOLATION OF *CAPNOCYTOPHAGA SPP*

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Introduction

The genus Capnocytophaga comprises a group of capnophilic/facultatively anaerobic Gram-negative bacilli and consists of eight species, namely C.ochracea, C.sputigena, C.gingivalis, C.granulosa, C.leadbetteri, C. haemolytica, C.canimorsus and C.cynodegmi 1,2. The ecologic niche for the first six species is the human oral cavity. They are associated with varying degrees of periodontal health and disease and are often reported to cause bacteremia and various severe general infections in compromised as well as in noncompromised patients 3,4. Both last ones species are a member of the oral cavity of dogs and cats and are associated most commonly with dog-bite infections. Data regarding the isolation frequency of Capnocytophaga spp. from clinical samples are conflicting, primarily due to the different microbial procedure employed, but also due to the difficult growth of this bacterial genus flooded in the wealth of the oral microbiome5. Isolation of these organisms is important for proper diagnosis and treatment of the systemic infections which they cause but also for its epidemiological study6. The aim of this investigation was to perform a quantitative and qualitative comparison of several media for the culture of the different Capnocytophaga species.

Materials and Methods

Ten clinical Capnocytophaga spp. isolated from oral human cavity and five ATCC reference strains were included. All clinical strains were identified by 16s RNA genes sequencing. Five selective culture media: VCAT (vancomycin, colistin, amphotericin B and colistin), bacitracin, Fuso, VK (vancomycine and kanamycine), ANC (nalidixic acid and colistin) were compared with two nonselective media: a blood agar (SBA) and a chocolate agar. The numbers of CFU/mL for each strain on the different media were calculated from the average of two replicate plates. MICs of antibiotics incorporated in various selective media (vancomycin, colistin, trimethoprim, bacitracin, gentamycin and nalidixic acid) were determined by Etest or diffusion method.

Results

Nonselective medium and Fuso medium were equivalent and able of supporting growth of all the different species of Capnocytophaga. They also yielded the maximum number of CFU/mL for all type strains even if C. canimorsus preferred Fuso medium and SBA than chocolate agar. Otherwise, ANC, VK, VCAT, and bacitracin media were able of supporting the growth of respectively 90%, 70%, 50%, and 40% of tested strains. All strains were highly resistant to trimethoprim, colistin and gentamycin while they were variably resistant or sensitive to bacitracin, vancomycin and nalidixic acid.

Discussion

Selective media used in this study like Mashimo7 and Cap medium8 were formulated to select for Capnocytophaga spp. from polymicrobial clinical specimens. But we show that susceptibility of certain strains to present anti-

biotics in media prevents the bacterial growth. Nonselective media is successful for growth of all species but often can't show Capnocytophaga strains from a dental plaque sample containing numerous other fast growth microorganisms.

Conclusions

The culture medium is a determining factor in isolating the full range of Capnocytophaga spp. from clinical isolates. It would be necessary to formulate a new medium considering these observations.

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