



A REVIEW ON CAPNOCYTOPHAGA INFECTION

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ABSTRACT

People affected with capnocytophaga by being bitten or coming into close contact with these animals. Dog bites and dog contact are more frequently associated with infections. Some persons who have the bacteria in their own mouths may become ill due to other Capnocytophaga germs that are also present in human mouths. This kind of infection is more common in immunocompromised individuals than in healthy ones. Even after a bite, most interactions with dogs and cats do not result in a Capnocytophaga infection or any other disease. However, you should exercise caution whenever you come into touch with animals, particularly if you have a medical condition that increases your risk of infection. Fever, nausea, diarrhoea, abdominal pain, headaches, and muscle aches are the most typical symptoms. Pregnant women have a greater risk of having Capnocytophaga infection. The best way to prevent the infection is to avoid the dog bite or dog lick on the wound.

KEYWORDS: Capnocytophaga, immunocompromised, asplenic, Chorioamnionitis.

INTRODUCTION

Dogs and cats typically have the bacteria Capnocytophaga canimorsus in their mouths. It extracts N-acetylglucosamine, a substance required for its outer layer, from the constituents of dog and cat saliva. The bacteria don't cause any infection to dog and cat but when it enters in humans it becomes a pathogen i.e. a microbe that can infect a host and spread illness. Bite and general animal contact are the main ways that Capnocytophaga canimorsus spreads. C. Canimorsus infection symptoms typically manifest one to eight days following exposure, with day two being the most common time. It remains immune system undiscovered while feeding on its human host. The specialist immune cells known as macrophages do not pick it up. Severe cases may result in meningitis, peripheral gangrene, and septic shocks.

The majority of adult infections with Capnocytophaga happen to those over 40. Pregnant mothers and their unborn children may become seriously ill as a result of capnocytophaga bacteria. Chorioamnionitis, an inflammation of the membranes surrounding the foetus in the womb, can result from infection during the latter weeks of pregnancy. It can also result in low birth weight in the baby and sepsis, a dangerous infection of the body's tissues or bloodstream.



Various species of capnocytophaga

- 1) Capnocytophaga ochracea
- 2) Capnocytophaga gingivalis
- 3) Capnocytophaga sputigena
- 4) Capnocytophaga hemolytica
- 5) Capnocytophaga granulosa
- 6) Capnocytophaga canimorsus (responsible for majority of infections)
- 7) Capnocytophaga cynodegmi

General characteristics of Capnocytophaga

- 1) Gram negative
- 2) Facultative Anaerobic
- 3) Long, thin & Fusiform bacilli
- 4) Gliding movement

- 5) Slow growing
- 6) Capnophilic “Carbon loving”

Identification of Capnocytophaga

- 1) By conventional culture methods
- 2) DNA probes
- 3) Biotinylated DNA probe

Detection of infection

There is no specific methods for the detection of the Capnocytophaga bacteria. But we can inspect the patient by visual observation.

Risk factors

- 1) Use alcohol excessively
- 2) Do not have a spleen (asplenic)
- 3) Cancer

- 4) Diabetes
- 5) HIV infection
- 6) Are taking drugs that are toxic to cells (such as chemotherapy)

Complications

- 1) Periodontal (gum) disease
- 2) Respiratory tract infections (infections of the mouth, nose, throat, and lungs)
- 3) Eye infections
- 4) Septicemia (blood infection)
- 5) Endocarditis (inflammation of the lining of the heart)
- 6) Abscesses in different body tissues are collections of pus in the tissue that result in redness and swelling.
- 7) Inflammation of the eyes, face, lymph nodes or brain membranes.



Epidemiology

Worldwide reports of *C. canimorsus* infection have been made. It is estimated that 18–57% of cats and 26-74% of dogs have *C. canimorsus* in their mouths. Infections typically affect high-risk individuals rather than healthy ones. These are persons who have pre-existing medical issues, such as those who use steroids, are alcoholics, or lack a spleen. Elderly and middle-aged people are also more susceptible to illness. Regularly handling cats and dogs is another risk factor.



How Does Capnocytophaga Infection Occur in Humans?

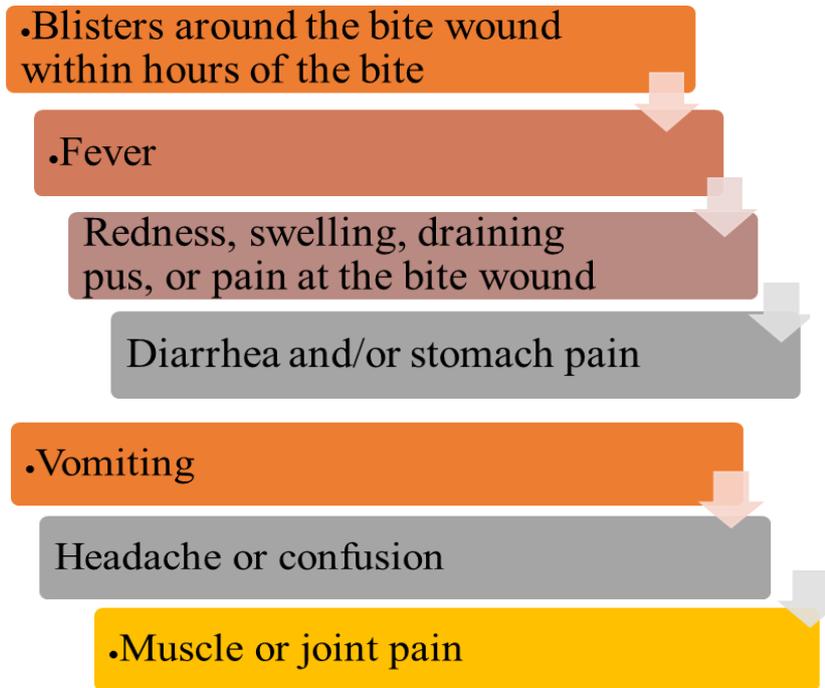
Numerous Capnocytophaga germs are common normal bacteria that are frequently discovered in people's, dogs', and cats' mouths. These bacteria can occasionally result in opportunistic infections, which implies that, under certain situations, such as in an individual with a compromised immune system, they can induce an infection.

Individuals with compromised immune systems comprise those who:

- 1) Consume alcohol in excess
- 2) Have cancer or HIV infection
- 3) Have their spleens removed

Signs and Symptoms

Most ill persons who get bit usually start showing symptoms 3–5 days after the bite, though this can take up to 14 days.



Treatment of *Capnocytophaga* Infection

(50% are resistant to fluoroquinolones)

- 1) Piperacillin-Tazobactam: 4.5 gm 1 dose, 3.375gm IV q 8 hrs (Add vancomycin if Hx. MRSA. +/- clindamycin or metronidazole. discontinue after culture results available)
 - 2) Imipenem-Cilastatin: 500mg IV 6hrs.
 - 3) Meropenem: 1 gm IV 8 hrs.
 - 4) Clindamycin: 600 mg IV 6 hrs.
- If severe penicillin allergy

Prevention of the Infection

- 1) Prevent dog bites to avoid the infection of *Capnocytophaga*.
- 2) Seek medical attention right away if, within 14 days of the bite, you develop symptoms.
- 3) Keep your cat or dog from leaking on the wound.
- 4) Even if you don't feel ill, wash the bite area as soon as possible with soap and water after being bitten by a dog or cat and contact your doctor. This is due to the possibility of both rabies and *Capnocytophaga* arising from dog and cat bites.

CONCLUSION

From the above review article, we can conclude that *Capnocytophaga* is a serious infection which leads to the life-threatening conditions. So, there is a need to proper awareness about the disease among the people. People need to be properly educated about the disease and also about the consequences which may occur due to this infection.

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