



# Changes in the Number of Streptococcal Patients due to the Suppression of Consultations due to the Corona Disaster

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## Short Communication

The first corona infection in Japan was reported on January 15<sup>th</sup>, 2020, and to prevent coronavirus infection, from March 2020 restrictions on movement, including school closures, have begun. It is a national project to prevent the spread of corona infection. In addition, due to the fear of an unknown virus called corona, consultations at medical institutions where corona patients are thought to be located were suppressed at the same time. Patients with colds did not want to enter through the front door of the clinic because they did not want to be infected with corona, and patients with dizziness went to the clinic despite the opposition of their families. This restriction continued for about two years until March 2022, with varying degrees. The suppression of consultations has resulted in the majority of patients with bacterial acute upper respiratory tract infections, except in severe cases, who do not receive medical care. That is, it is a restriction of antibiotic administration. In fact, the amount of antibiotics used decreased by 24.2% in 2020 and by 31.5% in 2021 compared to 2013 [1].

In viral acute upper respiratory tract inflammation, the virus eventually disappears from the body, so the problem is bacterial upper respiratory tract inflammation. Bacteria continue to exist in the body in a carrier state even after the main symptoms subside. The carrier status of streptococcus may be asymptomatic, but hoarseness continues for several months to years due to discomfort and foreign body sensation in the pharynx. Since mycoplasma has not been accurately diagnosed and treated, it should be noted that it is streptococcal infection. A grand experiment was conducted to see what would happen to bacterial upper respiratory tract inflammation, especially streptococcal infection, after two years of antibiotic restrictions [2].

In bacterial upper respiratory tract inflammation, the treatment course is determined by observation with nasopharyngeal fibers, depending on the degree of lesion of the pharyngeal mucosa. If the swelling of the mucous membrane extends to a part of the lingual tonsils, antibiotic drip treatment is recommended on an outpatient basis. If the swelling of the mucous membrane extends to the entire lingual tonsil or epiglottis, or epiglottitis, hospitalization treatment is required. In addition, if streptococcal infection is confirmed in the antigen test, penicillin antibiotics are required for 5 days for children under 2 years old, and for 10 days for those over 3 years old. Typical findings in patients positive for *Streptococcus* are redness and swelling of the bilateral palatine tonsils, but palatine tonsils are perfectly normal and may only have redness and swelling of the adenoids and tongue tonsils.

Even if a patient with streptococcal infection is given penicillin antibiotics for 10 days and *Streptococcus* is not detected, the symptoms are not completely cured and it may take one month to heal. Most childhood streptococcal infections were purulent rhinorrhea without high fever and redness of the palatine tonsils. It was impossible to distinguish between streptococcal infection and adenovirus infection from the symptoms and local findings of the nasopharynx, and antigen tests for both *Streptococcus* and adenovirus were performed during the epidemic of both diseases.

Adenovirus infections that cause acute upper respiratory tract inflammation result in negative antigen tests five to six days after onset. Symptoms gradually recover from a positive antigen test with sore throat and cough, but a new antigen test re-positive for sore throat and cough after 7 days is adenovirus reinfection. The incubation period seems to be as short as 0 to 1 days. Adults do not have antibodies to all types of adenoviruses that cause upper respiratory tract inflammation. Therefore, during the adenovirus pandemic, all generations except children were affected by non-antibody-bearing serotypes of adenoviruses. Acute upper respiratory tract inflammation caused infectious symptoms. Since the epidemic of streptococcus was originally suppressed by antibiotics for many years, mixed infection with adenovirus may have been suppressed, and the production of antibodies in each serum of adenovirus may have decreased in all generations. Adenovirus, like

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RS virus and *Human metapneumovirus*, is a viral infection that can cause bacterial otitis media. In acute upper respiratory tract infection, whether the origin is viral or bacterial, administration of appropriate antibiotics that are effective for both the primary disease of upper respiratory tract inflammation and bacterial otitis media and a period of administration is required. In order to make such a decision, observation of the nasopharynx and eardrum is essential.

The number of people infected with *Streptococcus* in 2019, before the corona disaster, was 60 (3). In parentheses are the mixed number of infections of Adenoids and *Streptococcus*. There were 50 (1) cases in 2020 and 103 (2) cases in 2021. In 2022, when full-scale restrictions on movement were lifted from April, there were 1598 (1051) cases. Details of the number of streptococcal patients in 2022 January 16 (4) February 9 (1) March 16 (0) April 45 (0) May 66 (0) Case June 104 (5) July 79 (17) August 86 (40) September 119 (47) October 296 (187)

cases November 407 (396) cases December 355 (354) cases. Mixed infections with adenovirus increased dramatically from July and August 2022, four or five months after the movement restrictions were lifted. This means that the restriction of antibiotics by suppressing consultations for two years left *Streptococcus* unchecked. After that, *Streptococcus* caused a mixed infection with adenovirus, increasing its infectivity and producing many times more infected people than before the corona disaster.

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