

Differential Diagnosis of COVID-19 Enanthema

Rochman Mujayanto¹ Recita Indraswary²

¹Department of Oral Medicine, Faculty of Dentistry, Universitas Islam Sultan Agung, Central Java, Indonesia

²Department of Oral Biology, Faculty of Dentistry, Universitas Islam Sultan Agung, Central Java, Indonesia

Address for correspondence Rochman Mujayanto, drg, Sp. PM, Department of Oral Medicine, Faculty of Dentistry, Universitas Islam Sultan Agung, Central Java 50112, Indonesia (e-mail: rochman.mujayanto@unissula.ac.id).

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Coronavirus disease 2019 (COVID-19) is a disease that has become a pandemic in the world with very high transmission rates. COVID-19 is caused by coronavirus which initially infects animals (bats, camels, birds, and anteater). This virus is transmitted by animals to humans, then transmitted from human to human. Coronavirus that infects humans causes acute respiratory distress syndrome (ARDS).^{1,2}

COVID-19 infection begins with the invasion of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in host cells. SARS-CoV-2 has a life cycle in host cells to be able to replicate so that viral load will increase and cause symptoms of the disease. The life cycle of SARS-CoV-2 in host cells can be divided into attachment, endocytosis, membrane fusion phases, biosynthesis, and maturation. The presence of SARS-CoV-2 in the host body will trigger a series of immune responses that involve complex inter-section signaling.¹⁻⁴

Transmission of Disease

SARS-CoV-2 is transmitted through saliva by droplet, airborne, and aerosol transmission. Droplets are formed when COVID-19 sufferers talk, cough, or sneeze causing saliva to splash around (± 1 m). SARS-CoV-2 in saliva can last 29 days. SARS-CoV-2 droplet transmission can occur directly or indirectly.^{5,6} Direct droplet transmission occurs when healthy people are splashed with oral fluid when in close contact with an infected patient. Indirect droplet transmission occurs when healthy people touch the patient or the surface of objects or objects around the infected patient. Droplet infectious fluid will evaporate into a lighter fluid and spread through the air (airborne) up to 10 m from the initial location of the droplet. This if inhaled, healthy people become infected. Aerosol transmission is an airborne transmission that occurs indoors and SARS-CoV-2 can last for 3 days in a closed room. Aerosol transmission causes SARS-CoV-2 to infect large numbers of people at one time and in a fast time.⁵⁻⁸

Clinical Manifestations

Symptoms of SARS-CoV-2 infection include an upper respiratory tract infection (URTI) (mild–severe), ARDS, sepsis, and septic shock.⁷ Complaint of the oral cavity in COVID-19 patients in the form of mouth and throat pain due to tonsillitis, epiglottitis, or pharyngodynia. SARS-CoV-2 infection also causes inflammation of the nasopharynx region.^{9,10} Complaints of dry mouth and reduced taste sensation occur at a chronic stage. This condition occurs because a high SARS-CoV-2 viral load causes damage to the salivary glands.¹¹ These complaints can be one indicator of patients suspected of being infected with SARS-CoV-2.⁹⁻¹¹

In COVID-19 patients, lesions were found in the skin and oral cavity. Skin lesions are exanthem (47%), pseudo-chilblain (erythematous vesicles or erythematous pustules) (19%), urticaria (19%) vesicular eruption (9%), and necrotic (6%).¹² Enanthem is the term exanthem in the oral mucosa.¹²⁻¹³ Exanthem is an erythematous rash that develops together with fever or together with a host of other symptoms. Exanthema lesions have morphological variations, including erythematous macules, erythematous papules, erythematous maculopapular, erythematous maculopapular accompanied by petechiae, erythematous vesicles, pustules with erythematous, and urticaria¹²⁻¹⁵ (► **Fig. 1** and ► **Table 1**).

Case Management

To reduce pain in the oral cavity and inactivate coronavirus, an antiseptic mouthwash medication containing 0.2% iodine povidone is given. The ability of iodine povidone has been proven in the case of SARS-CoV and Middle East respiratory syndrome coronavirus (MERS CoV).^{8,9,17,18} Hydrogen peroxide 1% can be used as an alternative mouthwash, although no specific mechanism is known for deactivating coronavirus.^{8,9} Mouthwash containing chlorhexidine is not effective in COVID-19 cases.⁹ Anti-inflammatory mouthwash can be used to reduce pain in the oral cavity,¹⁹⁻²³ but the authors have not found a case report journal of this drug used in COVID-19 patients.

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Fig. 1 Enanthem lesions on palatal and labial mucosa accompanied by desquamation of gingival patients positive for COVID-19.¹²

Table 2 Anti-inflammatory mouthwash

| Content of mouthwash | Work mechanism |
|--|---------------------|
| Benzydamine HCl 0.15% ^{19,20} | Topical anesthetics |
| Hyaluronic acid ²⁰⁻²² | Anti-inflammatory |
| Zinc ^{19,22,23} | Anti-inflammatory |
| Tetracycline 0.25% ²⁰ | Anti-inflammatory |

Table 1 Differential diagnosis of COVID-19

| COVID-19 ^{7,12} | Hand, foot, and mouth diseases ^{15,16} | Measles ^{15,16} |
|---|--|--|
| <ul style="list-style-type: none"> ▪ Fever > 38°C ▪ Cough ▪ Throat pain ▪ Nasal congestion ▪ Malaise ▪ Maculopapular enanthem ▪ Skin lesions vary: <ul style="list-style-type: none"> ❖ Exanthema ❖ Pseudo-chilblain ❖ Urticaria ❖ Necrotic ▪ Shortness of breath (moderate–severe symptoms) ▪ Pneumonia (severe symptoms) | <ul style="list-style-type: none"> ▪ Fever > 38°C ▪ Cough ▪ Anorexia ▪ Abdominal pain ▪ Pain in the throat and oral cavity ▪ Vesicular enanthem which ruptures into an ulcer in the mucosa of the tongue, palate ▪ Vesicular exanthema on the palms, soles of the feet | <ul style="list-style-type: none"> ▪ Fever > 38°C ▪ Cough ▪ Conjunctivitis ▪ Coryza (runny nose) ▪ Koplik's spot enanthema (white papules with erythematous around them) ▪ Exanthema on the skin of the face and neck, which then changes color like copper |

Abbreviation: COVID-19, coronavirus disease 2019.

Disclosure

History and understanding of clinical characteristics in the initial screening of patients with complaints of the intra-oral are the starting points for COVID-19 identification.

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