

## POST-COVID VIRAL ETIOLOGY PANCREATITIS: DIAGNOSTIC AND THERAPEUTIC

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**Abstract:** Post-COVID viral etiology pancreatitis has emerged as a significant clinical concern in recent years. This article analyzes cases of pancreatitis associated with COVID-19 and other viral pathogens such as CMV, EBV, and hepatitis viruses, focusing on clinical presentation, diagnostic challenges, and therapeutic strategies. A comprehensive literature review was performed utilizing the latest scientific publications, clinical case studies, and international treatment guidelines. Results indicate that pancreatitis in COVID-19 patients may present atypically or with a delay, complicating the diagnostic process despite advancements in laboratory and imaging modalities. Treatment is primarily symptomatic, antiviral when indicated, and often minimally invasive. The study concludes that due to its complex presentation and potentially severe course, viral pancreatitis should remain a focus for clinicians, particularly in the post-COVID era, to improve timely diagnosis and patient outcomes.

**Keywords:** COVID-19, viral pancreatitis, diagnostics, CMV, EBV, hepatitis viruses, ACE2, treatment challenges

### Introduction

Acute pancreatitis is an inflammatory condition of the pancreas that ranks among the leading gastrointestinal emergencies globally. While common etiologies include gallstones, alcohol use, and hypertriglyceridemia, infections—particularly viral—also contribute to disease onset. During the COVID-19 pandemic, growing clinical and scientific interest emerged regarding the direct and indirect effects of SARS-CoV-2 on pancreatic tissue. Research has identified the expression of ACE2 receptors on pancreatic cells, suggesting a potential viral tropism for the pancreas and establishing a link between COVID-19 and pancreatic damage.

### Materials and Methods

This study conducted a structured literature review focusing on the pathogenesis, clinical manifestations, diagnostic tools, and treatment modalities for post-COVID viral pancreatitis. Scientific databases including PubMed, Scopus, and Google Scholar were searched using keywords such as “COVID-19 and pancreatitis,” “viral pancreatitis,” “ACE2 expression in pancreas,” “CMV, EBV, hepatitis and pancreatitis.” Inclusion criteria encompassed English-language publications from 2019 to 2024 featuring clinical trials, case series with more than five patients, systematic reviews, and official guidelines. Data were analyzed thematically and organized through comparative tabulation to highlight similarities and differences across viral etiologies. Special focus was placed on distinguishing SARS-CoV-2-associated pancreatitis from CMV, EBV, and HEV-associated cases.

### Results

Elevated pancreatic enzymes (amylase/lipase) have been observed in approximately 17–19% of COVID-19 patients, with a subset exhibiting clinical features of acute pancreatitis. Diagnosis was confirmed when at least two of the following criteria were met: (1) serum amylase/lipase levels exceeding three times the normal limit, (2) imaging findings suggestive of pancreatitis via computed tomography (CT) or ultrasound (US), and (3) typical abdominal symptoms. The following table summarizes the clinical associations and treatment approaches for different viral causes of pancreatitis.

Table 1. Clinical characteristics of viral-associated pancreatitis

**Clinical Features of Viral Pancreatitis (Illustrative Table)**

Virus type	Association with pancreatitis	Treatment approach
SARS-CoV-2 (COVID-19)	Direct damage via ACE2 receptors	Symptomatic, antiviral therapy specific to COVID-19
CMV	Necrotizing pancreatitis in immunocompromised patients	Ganciclovir
EBV	Rare, usually mild	Symptomatic
Hepatitis B/E	Observed in clinical cases	Antiviral therapy targeting the primary virus

As shown in Table 1, each virus exhibits a distinct pathogenic mechanism and clinical impact on the pancreas. SARS-CoV-2 primarily affects pancreatic cells via ACE2 receptors and requires antiviral and supportive care. CMV-related pancreatitis presents severely in immunocompromised patients and warrants targeted antiviral therapy with ganciclovir. EBV typically results in self-limited disease, while hepatitis B and E viruses may be associated with pancreatitis in select clinical scenarios, warranting antiviral treatment specific to the causative virus.

**Discussion**

Viral pancreatitis, particularly in the context of COVID-19, presents significant diagnostic and therapeutic challenges. Elevated pancreatic enzymes do not always indicate clinical pancreatitis, and symptoms may be masked by concurrent respiratory complications such as ARDS. In severe COVID-19-associated pancreatitis cases, multi-organ failure has been documented. Although pancreatitis caused by other viruses such as CMV, EBV, and HEV tends to be milder, immunosuppressed patients remain at increased risk. The current therapeutic approach prioritizes conservative management, but accurate etiological identification allows for targeted antiviral therapies that can significantly improve outcomes.

**Conclusion**

Though relatively rare, pancreatitis of viral origin—especially post-COVID—requires heightened clinical awareness. Early detection based on standardized diagnostic criteria and individualized therapeutic strategies can enhance prognosis and reduce complications. Given the potential for atypical presentation, clinicians must remain vigilant for pancreatic involvement in patients with recent or concurrent viral infections.

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