

## Rapid Diagnosis of Fungal Infection in Patients with Acute Necrotizing Pancreatitis by Polymerase Chain Reaction

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Necrotizing pancreatitis is a well-known complication of severe acute pancreatitis. Infection of necrotizing pancreatitis is currently accepted as the major single determinant for death from acute pancreatitis.<sup>1</sup>

Most infections in necrotizing pancreatitis occur as superinfections secondary to gram-negative enteric organisms and anaerobes, presumably from the gut. This has led to effective regimens of prophylactic intravenous antibiotics and selective bowel decontamination to prevent superinfection.<sup>2</sup> Although these “prophylactic” regimens have decreased the overall incidence of superinfection, the spectrum of organisms leading to superinfection seems to have changed, with emergence of staphylococcal and fungal opportunistic organisms.<sup>3</sup> The high prevalence of fungal infection in acute necrotizing pancreatitis has been attributed to the widespread use of broad-spectrum antibiotics, long-term central venous access for parenteral nutrition and a decrease in initial mortality, with subsequent prolongation of stay in the intensive care unit.

A recent study has shown that fungal infection occurs in more than 10% of patients with infected pancreatic necrosis.<sup>3</sup> These patients can be classified as having either primary or secondary fungal infections. Primary fungal infection is defined as infection developing in the absence of operative interventions between the onset of acute necrotizing pancreatitis and detection of infection. Fungi can be the sole organism isolated from the necrotic tissue in some of these patients, suggesting that these fungal species are the initial primary pathogen. Secondary infections develop after necrosectomy, and they are commonly mixed infections with multiple bacterial pathogens.

*Candida albicans* is the most common among the fungal organisms detected in infected necrosis. All authorities agree that operative necrosectomy is the treatment of choice for infected pancreatic necrosis, including primary fungal infections of necrotizing pancreatitis. Nonetheless, the appropriate timing and antifungal agent of choice remains undetermined.<sup>3</sup> Fluconazole, which has similar efficacy to amphotericin B but with markedly reduced toxicity, seems to be the agent of choice after initial operative treatment.

Polymerase chain reaction (PCR) has been used to diagnose fungal infection, especially in immunocompromised patients.<sup>4</sup> Although the use of PCR appears to be promising, the significance of a positive result in various clinical settings is still under evaluation. In fungal infection, it is especially important to differentiate between colonization and actual infection. In general, the diagnosis of invasive fungal infection should be based on a combination of clinical, microbiological, histological and serological results. This general rule should also be applied to fungal infection in acute necrotizing pancreatitis.

### REFERENCES

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