

## Features of diagnostic and treatment tactics for various configurations of acute pancreatitis (meta analysis and clinical study)

*Verma Mohit*

*Student (specialist)*

Мордовский государственный университет им. Н.П. Огарёва, Медицинский институт,  
Saransk, Россия

*E-mail: mohitvermaspd123@gmail.com*

### Background

Acute pancreatitis ranges from 13 to 45 cases per 100,000 population annually, with mortality varying from less than 1% in mild cases to 20–40% in severe disease with persistent organ failure. Different configurations defined by severity classification, morphological patterns, etiological factors, and presence of local or systemic complications require distinctly different diagnostic approaches and therapeutic interventions.

### Materials and Methods

A comprehensive meta-analysis of 47 studies published between 2015 and 2024 encompassing 12,847 patients with acute pancreatitis was conducted alongside a retrospective clinical study of 386 patients treated at three tertiary academic medical centers between 2018 and 2023. Comprehensive clinical data were extracted from electronic medical records including demographics, comorbidities, etiology, presenting symptoms, laboratory values, imaging studies, severity scores (APACHE II, BISAP, Ranson criteria, Modified CT Severity Index), treatment interventions, complications, and outcomes.

### Results

Contrast-enhanced computed tomography demonstrated superior diagnostic accuracy for necrotizing pancreatitis with pooled sensitivity of 88.3% and specificity of 92.1%, significantly outperforming conventional CT (sensitivity 62.4%, specificity 78.6%). Delayed imaging after 72 hours improved sensitivity to 91.7% compared to 74.2% with early imaging. Procalcitonin at 48 hours predicted infected necrosis with 82.1% sensitivity and 76.4% specificity at a threshold of 0.5 ng/mL, outperforming CRP and traditional scoring systems. Admission blood urea nitrogen greater than 25 mg/dL conferred over 10-fold increased mortality risk. Early enteral nutrition within 24 hours significantly reduced mortality (OR 0.42, 95% CI 0.28–0.63,  $p < 0.001$ ), infectious complications, and organ failure compared to delayed feeding. Nasogastric and nasojejunal routes demonstrated equivalent outcomes. Prophylactic antibiotics provided no mortality benefit and increased resistant organism rates (OR 2.34,  $p < 0.001$ ). The step-up approach for infected necrosis demonstrated substantially lower mortality compared to primary open necrosectomy (18.7% vs 32.4%,  $p = 0.003$ ), with delayed intervention beyond four weeks showing further outcome improvements in stable patients.

### Conclusions

Configuration-specific diagnostic and treatment strategies are essential for optimizing outcomes across the heterogeneous spectrum of acute pancreatitis. Early contrast-enhanced imaging timed appropriately, biomarker-guided risk stratification, goal-directed fluid resuscitation with lactated Ringer's solution, early enteral nutrition, judicious antibiotic stewardship, and minimally invasive step-up approaches form the cornerstone of effective management. Long-term follow-up addressing chronic complications including new-onset diabetes, exocrine insufficiency, and recurrent pancreatitis remains integral to comprehensive patient care.

### Источники и литература

- 1) Banks PA, et al. Classification of acute pancreatitis—2012. *Gut*. 2013;62(1):102-111. Tenner S, et al. ACG guideline: management of acute pancreatitis. *Am J Gastroenterol*. 2013;108(9):1400-1415. IAP/APA Acute Pancreatitis Guidelines. *Pancreatology*. 2013;13(4 Suppl 2):e1-15. Van Santvoort HC, et al. Step-up approach or open necrosectomy. *N Engl J Med*. 2010;362(16):1491-1502. Bakker OJ, et al. Endoscopic vs surgical necrosectomy. *JAMA*. 2012;307(10):1053-1061. Petrov MS, et al. Enteral nutrition and mortality risk. *Arch Surg*. 2008;143(11):1111-1117. de-Madaria E, et al. Fluid therapy and prognosis. *Am J Gastroenterol*. 2011;106(10):1843-1850. Wu BU, et al. Early prediction of mortality. *Gut*. 2008;57(12):1698-1703. Balthazar EJ, et al. Value of CT in prognosis. *Radiology*. 1990;174(2):331-336. Rau BM, et al. Procalcitonin for early assessment. *Ann Surg*. 2007;245(5):745-754.