**In Adult Patients with Pancreatitis, does Enteral Nutrition, Compared to Parenteral Nutrition, Decrease the Risk of Infection and Mortality?**

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**Abstract**

Early recognition and treatment of acute pancreatitis (AP) is necessary to lower associated morbidity and mortality rates. The hyper-catabolic state of AP patients results in inadequate caloric intake and nutrition support is often a necessary medical nutrition therapy intervention in AP patients. For many years practitioners believed that the gut should be allowed to rest and enteral nutrition (EN) should be avoided, relying mainly on parenteral nutrition (PN) as the patient’s main source of nutrition. Recent studies suggest that EN should be the preferred method of nutrition support and that PN results in increased risk of infection and mortality. Six scholarly articles were evaluated using the Academy of Nutrition and Dietetics Evidence Analysis Process in response to the PICO question: In adult patients with pancreatitis, does EN, compared to PN, decrease the risk of infection and mortality? The reviewed research demonstrated that EN reduces the incidence of infection and mortality in AP patients.

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**Background**

- Pancreatitis is a disease in which the pancreas becomes inflamed, affecting the body’s ability to digest and utilize nutrients.
- There are two main types of pancreatitis:
  - Acute pancreatitis
  - Chronic pancreatitis
- Severe AP is found in 20-30% of patients with pancreatitis and is associated with increased risk of:
  - Multiple organ failure
  - Necrosis
  - Abscess and formation of pancreatic pseudocysts
- AP is one of the most common diseases of the gastrointestinal tract, leading to tremendous emotional, physical, and financial human burden.
- Patients with AP become hyper-catabolic and often suffer from malnutrition if they do not receive nutrition support, leading to the ongoing debate of whether AP patients should receive EN or PN.
- Six scholarly articles were reviewed and evaluated in an effort to determine whether EN or PN is more effective at minimizing the risk of infection and mortality in AP patients.

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**PICO Question**

In Adult Patients with Pancreatitis, does Enteral Nutrition, Compared to Parenteral Nutrition, Decrease the Risk of Infection and Mortality?

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**Research Overview Table**

<table>
<thead>
<tr>
<th>Author, Year, Study Design, Class Rating</th>
<th>Study Purpose</th>
<th>Findings and Conclusions</th>
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</table>
| Maleldant Y, Malbrain M, Reuter D. November 2015 Review Class Rating: R | To evaluate if early use EN has proven beneficial in patients with AP. | EN:
• ↓ Incidence of infection
• ↓ Infection complications
• ↓ Mortality |
| Rinninella E. et al. January 2017 Review Class Rating: R | To question the current AP treatment paradigm and evaluate AP patient outcomes with early EN. | EN compared to PN:
• ↓ Incidence of infection
• ↓ Length of stay
• ↓ Infection complications
• ↓ Mortality
• ↓ Organ failure
• Multiple organ dysfunction syndrome
• Operative interventions |
| Krishnan K. 2017 Review Class Rating: R | To review current nutrition support recommendations for AP patients and evaluate the available evidence on EN versus PN. | EN compared to PN:
• ↓ Infection complications
• ↓ Mortality |
| Vieira JP, et al. 2010 Non-Randomized Controlled Trial Class Rating: C | To compare the efficacy, safety, morbidity, mortality, and length of hospital stay between AP patients on EN versus PN. | EN Group:
• ↓ Decreased septic complications
PN Group:
• ↑ Infection of infection
No difference note in length of stay |
| Connell DC. 2009 Review Class Rating: R | To review current nutrition support recommendations for AP patients and evaluate the available evidence on EN versus PN. | EN:
• Reversal of proinflammatory effects of pancreatitis
• Improved outcomes
PN:
• ↑ Incidence of infection |
| Tao Y. et al. November 2016 Retrospective Study Class Rating: B | To compare the use of early EN feeding with the use of PN in AP patients. | EN Group:
• ↓ incidence of infection
• ↓ length of stay
PN Group:
• ↑ incidence of multiple organ dysfunction syndrome
• ↑ mortality |

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**References**


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**Summary, Conclusions**

Conclusions

Pancreatitis is an intense inflammatory response that requires prompt treatment to improve outcomes. Part of the prompt treatment of PA includes early nutrition support. The ongoing debate is should the nutrition support be PN or EN? Recent research demonstrates that EN is associated with fewer incidents of infection and mortality when used instead of PN in the AP patient.

= ↓ risk of infection  
= ↓ mortality