SYSTEMATIC REVIEW

IS NUTRITIONAL SUPPORT NECESSARY IN MILD ACUTE PANCREATITIS?

¿ES NECESARIO EL SOPORTE NUTRICIONAL EN PANCREATITIS AGUDA LEVE?

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SUMMARY

Introduction: Acute pancreatitis is an inflammatory pathophysiological process of the pancreas, with a high incidence in the population and a significant burden of associated disease. Numerous studies have established the importance of enteral nutritional support due to its ability to preserve the intestinal mucosa, prevent disruption of the epithelium and bacterial translocation responsible for clinical complications. **Methods:** A bibliographic review was carried out on ninety articles published between 2015 and 2023 in PubMed, National Library of Medicine, and Google Scholar with the purpose of systematically demonstrating whether nutritional support is necessary in mild acute pancreatitis. **Results:** After the methodological application, the twelve articles studied highlight the relevance of the type of support, effectiveness in reducing pain and the relationship between hospital stay and enteral nutritional support. **Conclusion**: The systematic review supports the relevance of enteral nutritional support in patients with mild acute pancreatitis, underlining the importance of assessing patient tolerance and gradually advancing towards an oral diet.

KEYWORDS: Nutritional support, acute pancreatitis, nutrition, bacterial translocation.

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RESUMEN

Introducción: La pancreatitis aguda es un proceso fisiopatológico inflamatorio del páncreas, con una elevada incidencia en la población y una carga significativa de enfermedad asociada, numerosos estudios han establecido la importancia del soporte nutricional enteral debido a su capacidad de preservar la mucosa intestinal, prevenir la disrupción del epitelio y la translocación bacteriana responsables de las complicaciones clínicas. **Métodos:** Se realizó revisión bibliográfica en noventa artículos publicados entre 2015 y 2023 en PubMed, National Library of Medicine y Google académico con el propósito de evidenciar de manera sistemática si es necesario el soporte nutricional en pancreatitis aguda leve. **Resultados:** Posterior a la aplicación metodológica los doce artículos estudiados resaltan la relevancia del tipo de soporte, efectividad en la disminución del dolor y relación de la estancia hospitalaria en el soporte nutricional enteral. **Conclusión:** La revisión sistemática respalda la relevancia del soporte nutricional enteral en pacientes con pancreatitis aguda leve, subrayando la importancia de evaluar la tolerancia del paciente y avanzar gradualmente hacia una dieta oral.

PALABRAS CLAVE: Soporte nutricional, pancreatitis aguda, nutrición, traslocación bacteriana.

INTRODUCTION

Acute pancreatitis, an inflammation of the pancreas[4], is notable for its high prevalence in the population and the significant disease burden associated; This pathology can trigger anything from local damage to systemic inflammatory response syndrome, organ failure, and even be fatal, ranking among the most frequently hospitalized gastrointestinal pathologies worldwide, the primary causes, such as gallstones and alcohol abuse[5], make this gastrointestinal disorder one of the most prevalent in clinical practice.

The Atlanta criteria for the diagnosis of acute pancreatitis require meeting two of the following three criteria:

[4] Matanó, R., Mazza, O., Guidi, M., Curvale, C., Pasqua, A., Hwang, H. J., ... & Canicoba, M. (2019). Actualización en el manejo inicial de la pancreatitis aguda. *Acta Gastroenterológica Latinoamericana*, *49*(4), 307-323.

[5] Mayorga-Garcés, A., Otero-Regino, W., & Parga-Bermúdez, J. (2020). Nutrición en pancreatitis aguda: nuevos conceptos para un viejo problema. *Revista colombiana de Gastroenterología*, *35*(4), 465-470.

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abdominal pain compatible with acute pancreatitis, elevated levels of amylase or lipase exceeding three times the normal upper limit, and the presence of characteristic findings confirmed by imaging studies[6].

The current understanding of the pathophysiology of acute pancreatitis (AP) indicates that the generation of various pro-inflammatory substances, along with dietary restriction, leads to alterations in intestinal motility and the saprobiotic microbiota[4]. This scenario promotes bacterial overgrowth and the disruption of the intestinal barrier, allowing bacterial translocation through the lymph nodes into the systemic circulation[7]. In this context, bacterial endotoxins can trigger sepsis and multiple organ failure.

Patients with acute pancreatitis face a moderate to high nutritional risk due to the catabolic nature of the disease and its impact on its progression. Although historically it was considered essential to restrict food or implement digestive rest based on the belief that feeding could intensify tissue damage, recent studies, such as those by the American Gastroenterological Association, emphasize the importance of promptly initiating nutritional support[8], Enteral nutrition within the first 24 to 48 hours improves nitrogen balance, reduces the incidence of infections, mortality, and hospital stay duration[9].

Nutritional risk diagnosis in patients with mild acute pancreatitis is carried out using validated screening methods, such as the Nutritional Risk Screening-2002 (NRS-2002). Oral feeding with a soft, low-fat diet is recommended as soon as it is clinically tolerated, regardless of serum amylase and lipase levels[10].

Randomized controlled trials have shown that patients with mild to moderate acute pancreatitis tolerate early oral feeding, which is associated with a shorter hospital stay compared to conventional oral feeding[11], Oral food intake is safe and well-tolerated, regardless of the course and

[6] Banks, P. A., Bollen, T. L., Dervenis, C., Gooszen, H. G., Johnson, C. D., Sarr, M. G., & Vege, S. S. (2013). Classification of acute pancreatitis—2012: revision of the Atlanta classification and definitions by international consensus. *Gut*, *62*(1), 102-111.

[7] Ibid, Mayorga (2020)

[8] Navarro, R. G., & Cordero, G. A. S. (2020). Actualización en el diagnóstico y manejo de la pancreatitis aguda. *Revista Ciencia y Salud Integrando Conocimientos*, *4*(5), ág-51.

[9] Vega, A. T., Carrasco, M. F., Márquez, F. J., Lima, N. G. S., Urbina, B. V., & Olivera, N. O. (2008). Nutrición enteral, intervención segura en la Unidad de Terapia Intensiva. *Medicina Crítica*, *22*(4), 226-235.

[10] Álvarez-Aguilar, P. A., & Dobles-Ramírez, C. T. (2019). Pancreatitis aguda: fisiopatología y manejo inicial. *Acta médica costarricense*, *61*(1), 13-21.

11 Esmer, David, Rivera-Villalobos, Oscar, Hernández-Sierra, Juan F., Valencia-Sánchez, Liliana D., & Sánchez, Martín. (2021). Tolerancia a la alimentación inmediata en los pacientes con pancreatitis biliar leve. Cirugía y cirujanos, 89(2), 243-247.

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normalization of serum lipase[12]; When resuming oral feeding in patients with mild acute pancreatitis, a low-fat oral diet is preferred[13] and in cases where patients cannot feed orally, enteral nutrition is chosen over parenteral nutrition.

Finally, worldwide, acute pancreatitis (AP) is a common gastrointestinal condition associated with considerable morbidity, disease burden, and healthcare costs. Its annual incidence is estimated to be between 13 to 45 individuals per 100,000 inhabitants[14], more than 275,000 patients are hospitalized for AP annually, making it the third most common gastrointestinal cause of hospitalization in that country.

METHODOLOGY

A literature review was conducted to support the hypothesis presented in the study "Is nutritional support necessary in mild acute pancreatitis?". The process that outlined the development of this article is detailed below: Specialized health sciences platforms such as PubMed and the National Library of Medicine were used to conduct a general review. In this process, the aim was to identify bibliographic articles covering the period from 2015 to the present, reinforcing the premise of implementing nutritional support in cases of mild acute pancreatitis.

In the corresponding literature review, the descriptors "mild acute pancreatitis," "nutritional support in pancreatitis," and "Supplementation Improves Pancreas Function" were used. The results obtained led to the selection of articles that supported the study hypothesis, which were then subjected to a detailed review, applying the following inclusion criteria: studies on humans, populations over 18 years old, nutritional support at the onset of acute pancreatitis, types of studies (case-control studies, clinical trials, observational and retrospective studies) with relevant statistical data, as well as those focused on optimal nutritional support measures, key points of acute pancreatitis, and

[12] Cúrdia Gonçalves, T., Capela, T. L., & Cotter, J. (2023). Nutrition in Pancreatic Diseases: A Roadmap for the Gastroenterologist. *GE-Portuguese Journal of Gastroenterology*, *31*(1), 1-13.

[13] García Almansa, A., & García Peris, P. (2008). Tratamiento nutricional de los enfermos con pancreatitis aguda: cuando el pasado es presente. *Nutrición Hospitalaria*, *23*(Supl. 2), 52-58.

[14] Puerto H, Leidy Juliana, Medina R, Rolando, Núñez R, Luis Ramiro, Jiménez S, Héctor Conrado, Olaya R, Justo Germán, Sanjuán M, Juan Felipe, Puerto H, Sergio Andrés, Martínez M, Carlos Mauricio, & Medina C, María Mónica. (2019). Manejo y desenlaces de la pancreatitis aguda en un hospital de cuarto nivel (Huila, Colombia), 3 años de experiencia. Revista colombiana de Gastroenterología, 34(1), 10-16.

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exclusion criteria such as studies in languages other than English or Spanish and those focused on chronic pancreatitis, as expressed in the flowchart of the selection process of each article included for the respective qualitative analysis. See Figure No.1.

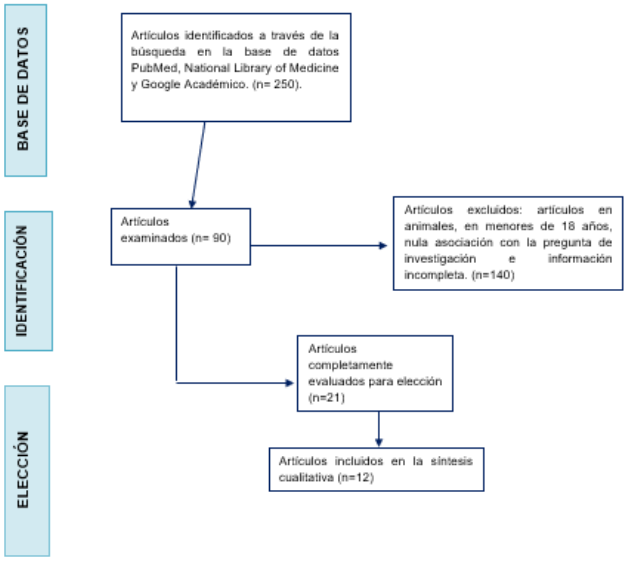

Figura 1. Diagrama de flujo del proceso de selección de cada uno de los artículos incluidos para el respectivo análisis cualitativo.

The present study was a literature review, and all the studies included in the analysis can be found in the list of references at the end of the article.

RESULTS

Table 1 details the number of articles found in each of the databases and the distribution of inclusion, exclusion.

Table 1. Description of the articles found in the database.

Database	Identified	Included	Excluded
PubMed	35	4	32
National Library of Medicine	10	1	8
Google Scholar	45	7	38
Total	90	12	88

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In Table 2, it is observed that all the articles describe the need for nutritional support; however, some highlight the relevance of the type of support, emphasizing enteral nutritional support, demonstrating effectiveness and reduced hospital stay.

Table 2. Description of the need for nutritional support in AP recommended by the different articles.

Author/year	Type of study	Indication for nutritional support in AP
Navas et al. 2023	Descriptive retrospective literature review study	Individualized drug-nutritional management should be undertaken, taking into account the patient's history and progression, implementing early enteral nutrition intervention strategies.
Real et al. 2022	Cross-sectional descriptive study	81.8% of the population diagnosed with mild pancreatitis began feeding late, with 71% starting late. 14.5% received enteral nutrition, and 7.2% received parenteral nutrition during hospitalization. In cases where parenteral nutrition was administered, it was recorded whether this was through enteral nutrition (EN) or parenteral nutrition (PN), and the reason for the indication was noted.
Rodríguez et al. 2022	Documentary literature review	They recommend enteral nutrition within the first 24 hours for mild acute pancreatitis if the patient tolerates it, and for 3 to 5 days in acute pancreatitis using a nasogastric or nasojejunal tube, or to initiate total parenteral nutrition.
León et al. 2018	Descriptive, observational, longitudinal retrospective study	The European Society for Clinical Nutrition and Metabolism (ESPEN) recommends restarting the diet when the patient no longer requires opioids, has no nausea or vomiting, and on physical examination has peristalsis.
Yanallalli et al. 2019	Systematic review	Compared to total parenteral nutrition, enteral nutrition was associated with a significantly lower risk of infections.
Cencerrano et al. 2018	Randomized clinical trial, longitudinal and prospective	Feeding through a nasogastric tube is considered as safe and likely to yield similar outcomes compared to nasojejunal feeding. There are many more studies on the role of

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		early enteral nutrition (EEN) in patients with severe acute pancreatitis (AP), in which the implementation of EEN clearly shows benefits over total parenteral nutrition (TPN).
Gutiérrez et al, 2020	Literature review	All authors suggest fasting at the onset of an episode of acute pancreatitis (AP).
Delgado et al. 2023	Literature review	The initiation of diet has not been definitively determined, but earlier initiation is preferable because it reduces the risk of infection and organ failure. It should ideally commence within 24 to 72 hours from the patient's admission.
Mayorga et al. 2019	Literature review	Early initiation of diet does not cause additional pancreatic stimulation or damage. Pain is not an indication to suspend the diet.
Lakananurak, et al. 2020	Literature review	Parenteral nutrition (PN) should be administered only to patients who do not tolerate enteral nutrition (EN).
Marik, E, 2019	Literature review	Early initiation of enteral nutrition within 24 hours of hospital admission reduces complications.
Ortega, et al (2023).	Literature review	In nutritional management, for oral nutrition, it is more recommended and feasible to use a nasogastric tube.

The authors agree that nutritional support in **AP** is a highly prescribed therapeutic strategy crucial in the comprehensive management of this condition. Initiating nutritional support within the first 24 hours ensures early improvement and reduces hospital stay. Studies have shown that gastric rest in **AP** could lead to intestinal mucosa atrophy, resulting in bacterial translocation and increased rates of infectious complications[15].

It is emphasized that scientific evidence gives more importance to enteral nutrition than to parenteral nutrition in the nutritional treatment of acute pancreatitis (AP), because EN

[15] Cecenarro, R. R., Bonci, L., & Kasparian, A. (2018). Nutrición enteral temprana en pacientes con pancreatitis agudas leves: estudio clínico randomizado. *Revista de la Facultad de Ciencias Médicas de Córdoba*, *75*(4), 240-247.

aids in recovery more effectively[16]; However, depending on each patient's characteristics and the complications of acute pancreatitis, parenteral nutrition should be administered if EN is not tolerated.

CONCLUSION

The systematic review, addressing the question of the need for nutritional support in mild acute pancreatitis, conclusively confirms the imperative of initiating enteral nutritional support in these patients. The crucial importance of assessing the patient's tolerance to enteral nutrition by nutrition and dietetics professionals is emphasized, aiming to clinically evaluate the effectiveness of gradually transitioning to a liquid oral diet as tolerance improves.

Early implementation of feeding demonstrates efficacy in reducing painful episodes, and enteral nutritional support provides significant benefits by preserving intestinal mucosa, preventing epithelial disruption, and avoiding bacterial translocation that could lead to complications.

BIBLIOGRAPHICAL REFERENCES

Álvarez-Aguilar, P. A., & Dobles-Ramírez, C. T. (2019). Pancreatitis aguda: fisiopatología y manejo inicial. *Acta médica costarricense*, *61*(1), 13-21.

Banks, P. A., Bollen, T. L., Dervenis, C., Gooszen, H. G., Johnson, C. D., Sarr, M. G., & Vege, S. S. (2013). Classification of acute pancreatitis—2012: revision of the Atlanta classification and definitions by international consensus. *Gut*, *62*(1), 102-111.

Canicoba, M. (2019). Actualización en el manejo inicial de la pancreatitis aguda. *Acta Gastroenterológica Latinoamericana*, *49*(4), 307-323.

Cecenarro, R. R., Bonci, L., & Kasparian, A. (2018). Nutrición enteral temprana en pacientes con pancreatitis agudas leves: estudio clínico randomizado. *Revista de la Facultad de Ciencias Médicas de Córdoba*, *75*(4), 240-247.

Cúrdia Gonçalves, T., Capela, T. L., & Cotter, J. (2023). Nutrition in

[16] Real, C., Navarro, P., Gómez, E., & Canicoba, M. (2022). Evaluación y tratamiento nutricional en pacientes con pancreatitis aguda: estudio observacional en el Hospital Nacional Alejandro Posadas. *Revista De Nutrición Clínica Y Metabolismo*, *5*(4).

How to cite this article: Flechas-Ordoñez Marcela, Malaver-Rojas Lina ; Botello-Lázaro Leidy. ¿Es Necesario el Soporte Nutricional en Pancreatitis Aguda Leve? *Revista Ciencias Básicas En Salud, 2(1): 84-95. marzo 2024, ISSN 2981-5800.*

Pancreatic Diseases: A Roadmap for the Gastroenterologist. *GE-Portuguese Journal of Gastroenterology*, *31*(1), 1-13.

García Almansa, A., & García Peris, P. (2008). Tratamiento nutricional de los enfermos con pancreatitis aguda: cuando el pasado es presente. *Nutrición Hospitalaria*, *23*(Supl. 2), 52-58.

Delgado, J. E., Rodríguez, D., & Villalobos, M. S. (2023). La Pancreatitis Aguda: diagnóstico y manejo. Revista de la Facultad de Medicina de la Universidad de Iberoamérica, 2(2), 45-56.

Esmer, David, Rivera-Villalobos, Oscar, Hernández-Sierra, Juan F., Valencia-Sánchez, Liliana D., & Sánchez, Martín. (2021). Tolerancia a la alimentación inmediata en los pacientes con pancreatitis biliar leve. Cirugía y cirujanos, 89(2), 243-247.

González Zamudio, L. Actualizaciones en el tratamiento nutricional de los pacientes con pancreatitis aguda, revisión bibliográfica.

Gutiérrez-Grijalva, E. P., Zamudio-Sosa, V. E., Contreras-Angulo, L. A., Leyva-López, N., & Heredia, J. B. (2022). Bioaccessibility of phenolic compounds from mistletoe infusions and effect of in vitro digestion on its antioxidant and pancreatic lipase inhibitory activity. *Foods*, *11*(21), 3319.

Lakananurak, N., & Gramlich, L. (2020). Nutrition management in acute pancreatitis: Clinical practice consideration. World journal of clinical cases, 8(9), 1561.

López, D. A. L. (2021). Características bioquímicas y clínicas de los pacientes con pancreatitis aguda que iniciaron nutrición temprana contra los que iniciaron nutrición tardía en el Hospital General De Cuernavaca.

Mayorga-Garcés, A., Otero-Regino, W., & Parga-Bermúdez, J. (2020). Nutrición en pancreatitis aguda: nuevos conceptos para un viejo problema. *Revista colombiana de Gastroenterología*, *35*(4), 465-470.

Matanó, R., Mazza, O., Guidi, M., Curvale, C., Pasqua, A., Hwang, H. J.

Meng, W. B., Li, X., Li, Y. M., Zhou, W. C., & Zhu, X. L. (2011). Three initial diets for management of mild acute pancreatitis: a meta-analysis. World journal of gastroenterology: WJG, 17(37), 4235.

Marik, P. E. (2009). What is the best way to feed patients with pancreatitis? Current opinion in critical care, 15(2), 131-138.

Navarro, R. G., & Cordero, G. A. S. (2020). Actualización en el diagnóstico y manejo de la pancreatitis aguda. *Revista Ciencia y Salud Integrando Conocimientos*, *4*(5), ág-51.

How to cite this article: Flechas-Ordoñez Marcela, Malaver-Rojas Lina ; Botello-Lázaro Leidy. ¿Es Necesario el Soporte Nutricional en Pancreatitis Aguda Leve? *Revista Ciencias Básicas En Salud, 2(1): 84-95. marzo 2024, ISSN 2981-5800.*

Ortega, M. A. N., Cedeño, G. K. C., Veliz, J. E. P., Cedeño, D. A. B., Ullauri, A. C. P., & Loor, C. J. M. (2023). Pancreatitis aguda y óptimas medidas del soporte nutricional.

Puerto H, Leidy Juliana, Medina R, Rolando, Núñez R, Luis Ramiro, Jiménez S, Héctor Conrado, Olaya R, Justo Germán, Sanjuán M, Juan Felipe, Puerto H, Sergio Andrés, Martínez M, Carlos Mauricio, & Medina C, María Mónica. (2019). Manejo y desenlaces de la pancreatitis aguda en un hospital de cuarto nivel (Huila, Colombia), 3 años de experiencia. Revista Colombiana de Gastroenterología, 34(1), 10-16.

Real, C., Navarro, P., Gómez, E., & Canicoba, M. (2022). Evaluación y tratamiento nutricional en pacientes con pancreatitis aguda: estudio observacional en el Hospital Nacional Alejandro Posadas. *Revista De Nutrición Clínica Y Metabolismo*, *5*(4).

Rodríguez, R. D. R., Cevallos, K. M. Z., Delgado, M. S. L., & Sanchez, Y. V. R. (2022). Manejo del paciente con pancreatitis aguda. *RECIAMUC*, *6*(4), 136-143.

Vega, A. T., Carrasco, M. F., Márquez, F. J., Lima, N. G. S., Urbina, B. V., & Olivera, N. O. (2008). Nutrición enteral, intervención segura en la Unidad de Terapia Intensiva. *Medicina Crítica*, *22*(4), 226-235.

Yanallalli Pillaca, L. N. (2023). Efectividad de la nutrición enteral comparado con la nutrición parenteral en pacientes con pancreatitis en el área de emergencias.

How to cite this article: Flechas-Ordoñez Marcela, Malaver-Rojas Lina ; Botello-Lázaro Leidy. ¿Es Necesario el Soporte Nutricional en Pancreatitis Aguda Leve? *Revista Ciencias Básicas En Salud, 2(1): 84-95. marzo 2024, ISSN 2981-5800.*