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EMERGENCY APPROACH AND BILIARY DECOMPRESSION IN THE TREATMENT OF ACUTE CHOLANGITIS

ABORDAGEM DE EMERGÊNCIA E DESCOMPRESSÃO BILIAR NO TRATAMENTO DA COLANGITE AGUDA

ABORDAJE DE EMERGENCIA Y DESCOMPRESIÓN BILIAR EN EL TRATAMIENTO DE LA COLANGITIS AGUDA

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ABSTRACT

Cholangitis, although often presenting a chronic course, poses critical challenges in scenarios of acute exacerbation and severe biliary obstruction. This narrative literature review aimed to consolidate contemporary scientific evidence on emergency management and biliary decompression strategies, with the goal of preserving hepatic function and reducing morbidity and mortality. The methodology consisted of data retrieval from the PubMed database (MeSH terms: "Cholangitis" and "Therapeutics"), focusing on high methodological rigor studies published within the last five years. The findings demonstrate that therapeutic effectiveness is intrinsically linked to the accuracy of differential diagnosis among the various etiologies. In Primary Biliary Cholangitis (PBC), the use of ursodeoxycholic acid (UDCA) remains the gold standard for slowing disease progression. On the other hand, IgG4-Related Cholangitis (IgG4-SC) requires diagnostic caution due to its ability to mimic neoplasms, showing a dramatic response to corticosteroid therapy and avoiding unnecessary surgical interventions. In Primary Sclerosing Cholangitis (PSC), given the absence of curative pharmacological therapies, mechanical decompression via endoscopic approach (ERCP) plays a central role in managing dominant strictures and preventing recurrent infectious episodes. Ultimately, hemodynamic stabilization and prompt biliary decompression constitute the absolute priorities in the treatment of acute cholangitis to prevent biliary sepsis. It is concluded that patient prognosis depends directly on a multidisciplinary approach that integrates early recognition of complications, intensive clinical support, and the individualization of maintenance strategies according to the immunopathological profile of each condition.

Keywords: Acute Cholangitis. Biliary Decompression. Cholangiopathies. Medical Emergency. Clinical Management.

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RESUMO
A colangite, embora frequentemente apresente um curso crônico, impõe desafios críticos em cenários de agudização e obstrução biliar severa. Esta revisão bibliográfica narrativa teve como objetivo consolidar as evidências científicas contemporâneas sobre o manejo emergencial e as estratégias de descompressão biliar, visando a preservação da função hepática e a redução da morbimortalidade. A metodologia consistiu no levantamento de dados na base PubMed (MeSH terms: "Cholangitis" e "Therapeutics"), com foco em estudos de alto rigor metodológico publicados nos últimos cinco anos. Os achados demonstram que a eficácia terapêutica está intrinsecamente ligada à precisão do diagnóstico diferencial entre as diversas etiologias. Na Colangite Biliar Primária (CBP), o uso do ácido ursodesoxicólico (UDCA) permanece como o padrão-ouro para retardar a progressão da doença. Por outro lado, a Colangite Relacionada à IgG4 (C-IgG4) exige cautela diagnóstica por mimetizar neoplasias, respondendo de forma dramática à corticoterapia e evitando intervenções cirúrgicas desnecessárias. Já na Colangite Esclerosante Primária (CEP), dada a ausência de terapias medicamentosas curativas, a descompressão mecânica por via endoscópica (CPRE) assume papel central no manejo de estenoses dominantes e na prevenção de quadros infecciosos recorrentes. Em última análise, a estabilização hemodinâmica e a descompressão biliar ágil constituem as prioridades absolutas no tratamento da colangite aguda para prevenir a sepse biliar. Conclui-se que o prognóstico do paciente depende diretamente de uma abordagem multidisciplinar que integre o reconhecimento precoce das complicações, o suporte clínico intensivo e a individualização das estratégias de manutenção conforme o perfil imunopatológico de cada condição.

Palavras-chave: Colangite Aguda. Descompressão Biliar. Colangiopatias. Emergência Médica. Manejo Clínico.

RESUMEN
La colangitis, aunque a menudo presenta un curso crónico, impone desafíos críticos en escenarios de agudización y obstrucción biliar severa. Esta revisión bibliográfica narrativa tuvo como objetivo consolidar la evidencia científica contemporánea sobre el manejo de emergencia y las estrategias de descompresión biliar, con el fin de preservar la función hepática y reducir la morbimortalidad. La metodología consistió en la recopilación de datos en la base PubMed (términos MeSH: "Cholangitis" y "Therapeutics"), con enfoque en estudios de alto rigor metodológico publicados en los últimos cinco años. Los hallazgos demuestran que la eficacia terapéutica está intrínsecamente ligada a la precisión del diagnóstico diferencial entre las diversas etiologías. En la Colangitis Biliar Primaria (CBP), el uso del ácido ursodesoxicólico (UDCA) sigue siendo el estándar de oro para retrasar la progresión de la enfermedad. Por otro lado, la Colangitis Relacionada con IgG4 (C-IgG4) requiere cautela diagnóstica debido a que puede imitar neoplasias, respondiendo de manera notable a la corticoterapia y evitando intervenciones quirúrgicas innecesarias. En la Colangitis Esclerosante Primaria (CEP), dada la ausencia de terapias farmacológicas curativas, la descompresión mecánica por vía endoscópica (CPRE) asume un papel central en el manejo de estenosis dominantes y en la prevención de episodios infecciosos recurrentes. En última instancia, la estabilización hemodinámica y la descompresión biliar oportuna constituyen las prioridades absolutas en el tratamiento de la colangitis aguda para prevenir la sepsis biliar. Se concluye que el pronóstico del paciente depende directamente de un enfoque multidisciplinario que integre el reconocimiento precoz de

las complicaciones, el soporte clínico intensivo y la individualización de las estrategias de mantenimiento según el perfil inmunopatológico de cada condición.

Palabras clave: Colangitis Aguda. Descompresión Biliar. Colangiopatías. Emergencia Médica. Manejo Clínico.

1 INTRODUCTION

Cholangitis encompasses inflammatory diseases of the bile ducts. Although most cases are chronic and autoimmune, the condition is prone to exacerbation and severe obstruction, thus requiring an emergency approach (Trivella et al., 2023; Sarcognato et al., 2021). Also called ascending cholangitis, it is associated in approximately 50% of cases with previous choledocholithiasis, followed by 10% to 30% by malignant neoplastic obstruction or surgical intervention of the bile ducts in a minority of cases. The infectious process results from the combination of biliary stasis and bacterial ascension, and can progress to septic shock if not treated early. The clinical picture can be manifested by Charcot's triad (fever, jaundice, pain in the right hypochondrium), whose specificity is high, but with low sensitivity. In more severe cases, there is an evolution to Reynolds' pentage, which includes hypotension and altered level of consciousness, indicating progression to biliary sepsis (Affan et al., 2022). The advent of minimally invasive biliary decompression techniques has contributed to a change in the prognosis of Acute Cholangitis, which is closely associated with mortality, historically. However, the current clinical challenge lies mainly in the differential diagnosis of the etiology of the obstructive condition, which will indicate the appropriate means of biliary decompression, whether mechanical, endoscopic or pharmacological (Beuers & Trampert, 2025).

The main presentations are Primary Biliary Cholangitis (PBC) and Primary Sclerosing Cholangitis (PSC). However, other etiologies of cholangitis, such as IgG4-Related Cholangitis (C-IgG4), are also relevant. While PBC preferentially affects small ducts and responds well to ursodeoxycholic acid (UDCA), which slows the progression of the disease, thus avoiding the need for transplantation (Trivella et al., 2023), PSC is a major challenge. Affecting large-caliber ducts and having stenosis present, there is a great risk of leading to episodes of bacterial cholangitis, which makes mechanical decompression by Endoscopic Retrograde Cholangiopancreatography (ERCP) necessary (Sarcognato et al., 2021). On the other hand, C-IgG4, which also affects large ducts, presents a dilemma. Overall, pharmacological decompression with corticosteroid therapy tends to avoid invasive procedures and unnecessary surgical approaches (Beuers & Trampert, 2025; Kersten et al., 2023). However, if its manifestation is accompanied by acute obstructive jaundice, decompression may require temporary endoscopic intervention with *stents.*

Cholangitis comprises a spectrum of inflammatory diseases of the bile ducts that, although they often have a chronic and autoimmune course, can present episodes of exacerbation and severe biliary obstruction, requiring rapid diagnostic and therapeutic interventions (Trivella et al., 2023; Sarcognato et al., 2021). Among the main entities are Primary Biliary Cholangitis (PBC), Primary Sclerosing Cholangitis (PSC), and IgG4-Related Cholangitis (C-IgG4), each with distinct pathophysiological mechanisms ranging from the destruction of small ducts to the formation of extensive fibroinflammatory strictures (Sarcognato et al., 2021; Kersten et al., 2023).

The clinical management of these conditions has evolved significantly with the introduction of targeted pharmacological therapies and the improvement of biliary decompression techniques. While PBC responds favorably to ursodeoxycholic acid (UDCA), PSC remains a therapeutic challenge due to the absence of a curative drug therapy, often requiring endoscopic management of dominant strictures to alleviate cholestasis (Trivella et al., 2023; Bedke et al., 2024). On the other hand, C-IgG4 has a dramatic response to corticosteroids, but its clinical similarity to biliopancreatic neoplasms makes diagnostic accuracy an imperative to avoid unnecessary surgeries (Beuers and Trampert, 2025; Kersten et al., 2023). Given the complexity of these conditions, understanding emergency approaches and maintenance strategies is vital for preserving liver function and improving patients' prognosis (Trivella et al., 2023).

2 METHODOLOGY

The present study is a literature review of a narrative nature, elaborated with the aim of synthesizing and analyzing the most recent scientific evidence related to therapeutic approaches and clinical management in cholangitis. Data prospecting was carried out in the PubMed database, using the descriptors "Cholangitis" and "Therapeutics", which were combined using the Boolean operators AND and OR, in accordance with the terminology of Medical Subject Headings (MeSH). Articles published in the last five years, available in full and written in English, that directly addressed the topic were included. Studies without a direct relationship with the central focus, duplicate publications, narrative reviews with low methodological rigor, and articles not indexed in the consulted platform were excluded. The selection process took place in two stages: initial screening of titles and abstracts, followed by full analytical analysis of the texts to

confirm relevance. The information collected was organized in a descriptive and critical manner.

This is a literature review study with a qualitative approach, whose objective was to gather and analyze scientific evidence about hepatic autoimmune diseases, with emphasis on primary biliary cholangitis and associated cholangiopathies.

The search for articles was carried out in relevant scientific databases, including indexed journals in the areas of hepatology and gastroenterology. Studies published preferably in recent years were selected, with emphasis on systematic reviews, observational studies, and clinical guidelines that addressed epidemiological, pathophysiological, diagnostic, and therapeutic aspects of diseases. Data mining was performed in the PubMed database, using the descriptors "Cholangitis" and "Therapeutics", which were combined using the Boolean operators AND and OR, in accordance with the Medical Subject Headings (MeSH) terminology.

The inclusion criteria included articles available in full, published in English, that had direct relevance to the proposed theme. Studies with a limited approach, duplicates, or studies that did not present consistent data related to autoimmune liver diseases were excluded.

After selection, the studies were critically analyzed, and the main information regarding the pathophysiology, clinical manifestations, diagnostic methods, and therapeutic strategies was extracted. The data obtained were then organized in a descriptive manner, with the objective of synthesizing the current knowledge on the subject and allowing an integrated understanding of the different conditions addressed.

3 RESULTS

Contemporary scientific literature establishes different protocols according to the etiology of cholangitis. For Primary Biliary Cholangitis (PBC), UDCA at doses of 13 to 15 mg/kg/day remains the first line, capable of delaying progression to cirrhosis. In patients with inadequate response, second-line therapies, such as obeticholic acid (OCA) and fibrates, have demonstrated efficacy in reducing alkaline phosphatase levels (Trivella et al., 2023; Sarcognato et al., 2021). In the context of IgG4-Related Cholangitis (C-IgG4), the standard treatment is based on systemic corticosteroid therapy (prednisolone), with remission rates greater than 90%, although relapse is common after medication

withdrawal, sometimes requiring the use of steroid-sparing agents such as rituximab (Beuers and Trampert, 2025; Kersten et al., 2023).

Regarding Primary Sclerosing Cholangitis (PSC), the results indicate superior therapeutic complexity. There is no robust evidence that UDCA alters the natural history of the disease in terms of transplant-free survival (Sarcognato et al., 2021). However, management of dominant strictures through endoscopic biliary decompression (balloon dilation with or without stenting) is critical to mitigate episodes of recurrent bacterial cholangitis and intractable pruritus (Sarcognato et al., 2021; Bedke et al., 2024). In addition, diagnostic surveillance is enhanced by the high association between PSC and Inflammatory Bowel Disease (IBD), where cholangitis may exert a modulating role in intestinal inflammation, although the exact immune mechanism is still under investigation (Bedke et al., 2024).

4 DISCUSSION

The academic discussion highlights that one of the greatest challenges in the management of cholangitis lies in the differential diagnosis. The difference between C-IgG4, PSC and cholangiocarcinoma continues to be one of the main points of doubt in the practice of medicine. C-IgG4 can mimic biliary neoplasia, which sometimes leads to surgical approaches that could be avoided; in this sense, it is understood why it is essential to apply the HISORt criteria and observe the response to treatment with corticosteroids. (Beuers & Trampert, 2025).

PSC can present multiple stenosis in the common bile duct and association with ulcerative colitis, an inflammatory bowel disease, in about 60-80% of cases, in addition to responding poorly to corticosteroids and presenting a higher risk of neoplasia. (Bedke et al., 2024).

In turn, PBC affects smaller ducts and has positive AMA in the vast majority of cases (90-95%), which makes it possible to have no biopsy for a large portion of diagnoses. (Trivella et al., 2023).

As for prognosis, it has been observed that socioeconomic inequities and barriers to access the health system directly influence outcomes, especially in PBC, where late diagnosis correlates with a greater need for liver transplantation (Trivella et al., 2023). In PSC, the discussion centers on the prevention of cholangiocarcinoma, a feared complication that requires close monitoring through magnetic resonance

cholangiopancreatography (MRCP) (Sarcognato et al., 2021). In cases of obstructive emergency, the absolute priority shifts to hemodynamic stabilization and agile biliary decompression to avoid biliary sepsis (Sarcognato et al., 2021). In short, the modern approach to cholangitis requires a multidisciplinary view that combines immunomodulatory pharmacotherapy with precision endoscopic interventions and continuous oncological surveillance (Beuers and Trampert, 2025; Trivella et al., 2023; Bedke et al., 2024).

5 CONCLUSION

The approach to acute cholangitis requires early recognition and immediate intervention, since it is a potentially fatal condition associated with biliary obstruction and ascending infection. In this context, early biliary decompression, associated with clinical support and appropriate antibiotic therapy, remains a fundamental pillar of treatment, significantly reducing morbidity and mortality. In addition, understanding the different etiologies of cholangiopathies, including autoimmune and inflammatory causes, is essential to direct individualized therapeutic strategies and avoid diagnostic delays that can negatively impact prognosis (SARCOGNATO et al., 2021; TRIVELLA; JOHN; LEVY, 2023).

Decompression of the bile duct, whether by endoscopic, percutaneous, or surgical methods, should be indicated in a timely manner, especially in severe cases, in which progression to sepsis is frequent. The choice of method depends on availability, team experience, and the patient's clinical conditions, with endoscopic drainage often considered the first line. At the same time, differentiating between infectious cholangitis and other cholangiopathies, such as those of autoimmune origin or related to IgG4, is crucial to avoid unnecessary interventions and institute specific therapies, such as immunosuppressants when indicated (BEUERS; TRAMPERT, 2025; KERSTEN et al., 2023).

In addition, understanding the pathophysiology of biliary diseases, including the immunological and inflammatory mechanisms involved, contributes to a more comprehensive approach to the patient. Immune-mediated alterations, gut microbiota, and environmental factors play a relevant role in both the genesis and evolution of cholangiopathies, and may influence the response to treatment and the recurrence of the disease. These aspects reinforce the importance of a multidisciplinary and evidence-

based approach in the management of these conditions (BEDKE et al., 2024; TRIVELLA; JOHN; LEVY, 2023).

Finally, the approach to acute cholangitis should integrate rapid diagnosis, intensive clinical support, and early biliary decompression, with attention to possible underlying etiologies. Advances in knowledge of biliary diseases, especially autoimmune and inflammatory forms, have allowed for greater diagnostic and therapeutic accuracy, contributing to better clinical outcomes. Thus, individualization of treatment, combined with early intervention, remains a central strategy in reducing mortality associated with acute cholangitis (SARCOGNATO et al., 2021; BEUERS; TRAMPERT, 2025).

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