



REVIEW

Dental management in patients with cirrhosis[☆]



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Received 11 January 2015; accepted 27 July 2015

Available online 3 March 2016

KEYWORDS

Cirrhosis;
Odontology;
Drugs;
Bleeding;
Infections;
Management

PALABRAS CLAVE

Cirrosis;
Odontología;
Fármacos;
Sangrado;
Infecciones;
Manejo

Abstract The present article makes a brief review about dental management of the patients with cirrhosis. It focus on problems related with infections, haemorrhagic events and treatment with drugs of common use in odontology.

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Manejo odontológico en el paciente cirrótico

Resumen The present article provides a brief review of dental management in patients with cirrhosis. It focusses on problems related to infections, haemorrhagic events, and treatment with commonly used drugs in odontology.

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[☆] Please cite this article as: Rodríguez Martínez S, Talaván Sernab J, Silvestre FJ. Manejo odontológico en el paciente cirrótico. Gastroenterol Hepatol. 2016;39:224–232.

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Introduction

The special characteristics of dental management of cirrhotic patients must be understood to minimize possible complications in the treatment of patients with liver disease. These complications are mainly due to alterations in haemostasis, drug metabolism, and the greater predisposition to infection found in these patients.

Our main objective was to establish evidence-based therapeutic action protocols that can serve as an approach to outpatient dental management of the cirrhotic patient. To that end, we performed a literature review: firstly, to study the main systemic abnormalities related with cirrhosis that might affect dental management of these patients (risk of haemorrhage, infection and altered drug metabolism); and secondly, to review the recommendations and measures reported in the literature to prevent the onset of undesired events during and after outpatient dental treatment in the cirrhotic patient.

Materials, methods and search strategy

A literature review of the topic was carried out using the following search strings: "*(cirrhosis) AND dental bleeding*", "*(liver cirrhosis) AND dental treatment*", "*(Hepatic cirrhosis) AND dental infections*", "*(liver disease) AND dental infections*", "*(Hepatic cirrhosis) AND tooth*", "*(Liver disease) AND oral mucosa*", "*(Cirrhotic patient) AND prescription*", "*(Liver disease) AND endocarditis*", "*Analgesics cirrhotic patient*", "*(Drug liver injury) AND cirrhosis*" and "*(liver disease) AND antibiotic-induced liver injury*". A total of 2562 articles were found. After reading the title/abstract, a preliminary selection was made of articles related to bleeding, risk of infection and pharmacological risk in the cirrhotic patient. Articles published in English and/or Spanish over the last decade (2004–2013, inclusive) considered of interest for the topic were then selected. As an exception, 1 article in French was included, as it was considered relevant for the review. A total of 19 articles were eventually included.

Literature review

Oral manifestations in the cirrhotic patient

The presence of oral manifestations in patients with cirrhosis, such as the appearance of haemorrhages, petechiae, haematomas, jaundiced mucosa, gingival bleeding, glossitis and sialadenosis, may be concomitant with the appearance of other signs and symptoms of liver dysfunction, and could indicate decompensation of the cirrhosis.¹ Furthermore, treatment with diuretics reduces salivary flow (hyposalivation), thus increasing the risk for caries, gingival inflammation and candidiasis.² Evidence obtained from experiments in animals also suggests that there may be a delay in cicatrisation and in the formation of spongy bone following simple or surgical extractions.³

Differential diagnosis of oral neoplasms should include oral squamous cell carcinoma (OSCC), which has been related to alcoholic cirrhosis,² and the possibility of oral metastases from a hepatocellular carcinoma, since cirrhosis patients are at high risk for this type of tumour.⁴

Risk of infection in the cirrhotic patient. Prophylaxis and treatment

The likelihood of infections is higher in cirrhotic patients because their immunosuppressed state (which will vary depending on the stage of the disease) increases their susceptibility to systemic infections.⁵ Dental infections are a port of entry through which bacteria and toxins can enter the blood and increase the state of systemic inflammation. In a healthy body, these small bacteraemias are neutralized by components of the immune system, but in cirrhosis, clearance of circulating endotoxins, bacteria and inflammatory mediators is compromised due to hepatic dysfunction.⁶

The effect of oral infections on the progression of cirrhosis has been extensively studied in the last decade. The need for dental treatment (apical periodontitis, pockets larger than 6 mm, root fragments or large loss of bone support) has been positively correlated in some patients with the more advanced stages of cirrhosis, greater urgency for liver transplant, and alcoholic cirrhosis,^{6,7} although a cause-effect relationship between the severity of the dental and liver disease has not been demonstrated. Alcohol in turn is a substance that interferes with protein metabolism and tissue healing, both processes related with periodontal disease. Moreover, serum cytokines, also implicated in the process of periodontal inflammation and destruction, are elevated in patients with cirrhosis (especially alcoholic cirrhosis), which could increase the prevalence and severity of periodontitis in these patients.⁸

Patients with cirrhosis should undergo regular dental checkups to maintain good oral hygiene, thereby preventing oral infections and avoiding invasive treatments.^{2,6,7}

Dental treatment in cirrhotic patients, particularly interventions involving bleeding, should not be undertaken before considering the stage of the disease and the need for antibiotic prophylaxis to reduce the complications derived from the spread of infection, especially in patients with advanced cirrhosis.⁷ Studies have shown that patients with liver cirrhosis, particularly those with comorbid heart defects, drug abuse and chronic renal failure, are at higher risk for bacterial endocarditis. This justifies the need for antibiotics prior to surgery,⁵ although there is no clear evidence to recommend administration of 600 mg of clindamycin in the case of allergy to penicillin 1 h before the procedure.^{6,9,10}

The most widely used antibiotic groups in dentistry include the penicillins-cephalosporins, clindamycin, macrolides and quinolones.

Penicillins and their derivatives very rarely cause liver damage, and it is usually asymptomatic. Penicillin G,

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