Liver disorder- latest considerations in dental management

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Abstract
Liver dysfunction may be due to a number of causes, including lifestyle habits and other acquired infections and conditions. The patient with liver disease has huge problem or challenge for the dentist because the liver plays a vital role in metabolic functions. The purpose of this article is to look into various risk factors, and the management of complications that occur in liver disease patients.

Keywords: Bleeding disorder, Partially activated thromboplastin, Internationally standardized ratio.

Introduction
The liver is the large organ, that occupies the upper right quadrant of the abdomen. The liver will retain normal function until it is 85% damaged. Liver diseases may range from mild disease to liver failure. The patient with liver disease presents a significant challenge for the dentist because it plays a vital role in metabolic functions, including secretion of bile needed for fat absorption, conversion of sugar to glycogen, and excretion of bilirubin, synthesis of coagulation factors and drug metabolism. Significant bleeding is the dental problem. Viral hepatitis and alcoholic liver disease are the most common liver disorders now.[1] So we should be cautious about the problems that can occur during the treating liver disease patient.

Problems to be considered during treatment of patients with liver diseases are as follows -
1. Bleeding disorders
2. Impaired metabolism and increased risk of drug toxicity
3. Cross infection and risk of hepatitis B, C, D

Bleeding disorders
Patients has to be asked for any previous unusual bleeding episode after surgery or injury, spontaneous bleeding. A drug history has to be recorded. If a patient is under anticoagulant drugs, it will be important to consult his or her physician before undergoing a major surgical procedure. Detection of petechiae, bruises, bruises or excessive bleeding of the gums should help dentist.

The incidence of caries and periodontal disease is higher in patients with bleeding disorders that may be due to Lack of effective oral and professional hygiene. Dental care for oral bleeding, this mostly results from a decreased synthesis of coagulation factors and excessive fibrinolysis, so that prothrombin time (PT), the internationally standardized ratio (INR) and Partially activated thromboplastin (APTT) is elevated and chronic bleeding can cause anaemia.
laboratory tests of the hemostatic system includes:
1. Bleeding time to determine platelet function (normal range: 2–7 minutes).
2. Activated partial thromboplastin time to evaluate the intrinsic coagulation pathway (normal range: 25 ± 10 seconds).
3. International normalized ratio to measure the extrinsic pathway (normal range: 1.0)
4. Platelet count to quantify platelet function (normal range: 150,000–450,000/μL)[2,3]

Impaired metabolism and increased risk of drug toxicity
Liver diseases can have complex effects on the medication Liquidation, biotransformation and pharmacokinetics, Pathogenetic factors include changes in the intestine, absorption, plasma protein binding, hepatic perfusion, portal systemic bypass, bile duct Excretion, enterohepatic circulation and renal clearance. Sometimes the disease can cause under which normal doses of drugs have toxic effects.[4] Local anesthetics should be administered cautiously to patients with hepatic disease. Analgesics (acetaminophen, non-steroidal antiinflammatory agents, opioids) Anesthetics, Local (amides), General (halothane), Antibiotics (ampicillin, tetracycline), Antiplatelets (aspirin), Sedatives (long-acting

benzodiazepines, barbiturates) these have to be given cautiously.

Cross infection and risk of hepatitis B, C, D

In a dental office, infections can spread through several routes, including direct contact with blood, oral fluids, or other secretions, indirect contact with contaminated instruments, operatory equipment, or environmental surroundings, or contact with airborne contaminants present in either droplet splatter or aerosols of oral and respiratory fluids.[5] The incidence HBV (heapatis b virus) is very high in dental practice as it is highly infectious.

Precautions to be taken

1. Altered blood screening tests: physician's opinion is required for treatment and postponement of elective treatment. Emergency treatment, if required should be done in hospital setting.
2. Strict sterilization protocol should be followed.
3. The most important precaution with HBV and HCV in dental settings is to prevent the risk of viral contagion to the dental professionals as well as the patients (cross-infection). HBV and HCV remain stable at room temperature for up to 5 days and persist on various dental operatories. Universal precautions should be taken while treating known patients to prevent cross-infection.
4. American dental association strongly recommends that all dental healthcare workers should receive vaccination against hepatitis B.
5. Caution should be taken while administration of local anesthesia and sedation. Local anesthetics are usually safe if total dosagedoes not exceed 7 mg/kg in combination with vasoconstrictor.
6. Liver diseases are associated with a decrease in plasma coagulation factor concentrations. Minimal trauma to optimize hemostasis, careful surgical technique, pressure application to control bleeding, and use of local hemostatic agents are recommended.
7. Local hemostatic agents that can be used are the: oxidized and regenerated cellulose, antifibrinolytic agents, fresh plasma, platelets, and vitamin k.
8. Surgery is contraindicated in patients with acute hepatitis, acute liver failure, or alcoholic hepatitis.

Conclusion

As in our day today life we encounter lot of patients with liver disease so we have to good precautionary measures in treating the patients with liver disease. we should have knowledge and awareness of the various risk factors before treating the patient for any dental procedures particularly extractions, periodontal treatments, endodontic treatments. Most importantly the brief case history with medical history and drug history has to be taken utmost care.

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Conflict of Interest

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