

# DRUG & THERAPEUTICS LETTER

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Department of Clinical Pharmacology  
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## What can be done about hepatitis B?

Hepatitis B is an important global problem. Around 350 million people worldwide are chronically infected with hepatitis B virus and are therefore at risk of developing chronic liver disease.

The most important mode of transmission globally is infection during the perinatal period from a chronically infected mother to her child. In areas where chronic hepatitis B infection is highly prevalent, infection most commonly occurs perinatally and during early childhood, for example through blood contact from child to child. In areas with intermediate prevalence, needle-sharing among injecting drug users, nosocomial transmissions, tattooing, and body piercing are also important modes of transmission.

The incubation period for hepatitis B is between 45 and 120 days; the larger the dose of virus, the shorter this duration. During this period, patients may feel unwell, with nausea, vomiting,

diarrhoea, anorexia and headaches, although many are asymptomatic. Jaundice occurs in 30-50% of adults (but under 10% of children) and is more likely following exposure to large doses of virus. The earliest serological marker of acute infection is the presence of hepatitis B surface antigen (HBsAg) in the blood. Accompanying elevations in serum transaminase levels can range from around 3-fold to over 100-fold. Fulminant hepatitis, with hepatic coma, occurs in under 1% of acutely infected patients.

In about 95% of adults, acute infection resolves spontaneously after 4-12 weeks' illness, with clearance of the virus from blood and liver and the development of lasting immunity to reinfection. However, such spontaneous recovery occurs in only around 10% of infants infected perinatally and 70% of those infected during early childhood. Recovery is indicated by the clearance of HBsAg and the appearance of antibody to this antigen (anti-HBs) in the blood.

Failure to clear the hepatitis B virus can lead to chronic infection. This is defined as infection that continues for more than 6 months with persistence of HBsAg, absence of anti HBs antibody and presence of specific IgG antibody to hepatitis B core antigen (anti-HBc).

Up to 20% of patients with chronic hepatitis progress to cirrhosis, of whom

up to 9% will develop hepatocellular carcinoma. Hepatitis B is the cause of 60-80% of all cases of hepatocellular carcinoma worldwide and second only to tobacco (as the cause of lung cancer) among known human carcinogens.

Patients infected with hepatitis B need to be aware of their potential to infect others, particularly through sexual contact and exposure to contaminated blood. It is therefore important to avoid sharing household items, for example razor blades, toothbrushes and towels that may be contaminated with infected body fluids. Injecting drug users should also avoid sharing needles, syringes or any other item that may be contaminated.

Hepatitis B vaccine is highly effective at preventing infection if given shortly (ideally within 48 hours) after exposure, and may be considered up to a week later. However, 10-15% of adults respond poorly or not at all to three doses of vaccine. Hepatitis B immunoglobulin provides immediate but temporary protection from infection but is reserved for use, in conjunction with vaccination, only when there is a high risk of infection or for a known non-responder to hepatitis B vaccine.

Uncomplicated acute viral hepatitis is treated symptomatically. The aim of treating chronic hepatitis B infection is to prevent progression to cirrhosis or hepatocellular carcinoma. Antiviral chemotherapy can reduce viral replication and, therefore, the chances of transmission of the virus to other individuals. In all individuals, the ideal outcome is to clear HBsAg, with development of anti-HBs antibody.

## References

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## Brief Information

### Drug induced pancreatitis

Gallstones and alcohol are the two most common causes of pancreatitis, but medicines are estimated to account for about 2 to 5% of cases.

Reports of pancreatitis are most frequent with azathioprine, didanosine and valproate. The drug groups more commonly implicated include antiviral agents, hypolipidaemic agents, atypical antipsychotic medicines, corticosteroids and other immunosuppressant, COX-2 inhibitors, NSAIDs, aminosalicylates (mesalazine, sulfasalazine), angiotensin II receptor antagonists. Individual drugs most commonly reported are azathioprine, didanosine, valporate, stavudine, simvastatin, clozapine, lamivudine, ezetimibe, prednisolone, olanzapine, celecoxib, mercaptopurine. At risk' groups include elderly patients taking multiple medications, patients who are HIV positive, patients who have cancer and patients receiving immunomodulatory agents. There is insufficient information available on the course of the disease once the suspected drug is stopped. It would, however, seem prudent to withdraw the suspected drug and prevent re-exposure.

## Drugs and gingival bleeding

Bleeding gums are usually the result of plaque-induced gingival inflammation and swelling. Occasionally bleeding may result from direct trauma, viral, fungal or bacterial infection, dermatoses, or as a manifestation of a systemic condition such as erythema multiforme or lupus erythematosus. Although it is a relatively uncommon reaction, a number of drugs have adverse effects that may directly or indirectly cause gingival bleeding.

Patients taking anticoagulants such as warfarin or heparin may develop gingival bleeding. Those taking a combination of anticoagulants and antiplatelet drugs, for example warfarin and clopidogrel after cardiac surgery, have an increased risk of spontaneous and prolonged gingival bleeding. Patients on warfarin should have their INR checked.

The three main groups of drugs that cause gingival enlargement are the calcium channel blockers, anticonvulsants and immunosuppressants. The effect varies between patients and is influenced by age, gender, concomitant medication and genetic factors. It is somewhat dependent on the level of oral hygiene and the length or time the patient has been

taking the drug. The three most frequently implicated drugs are phenytoin, cyclosporin and nifedipine.

The use of antibiotics (both systemically and topically as a mouthwash), oral steroids and other drugs which allow the overgrowth of organisms such as *Candida albicans*, may occasionally

cause an erythematous reaction which can result in gingival bleeding.

Drugs that suppress the immune response, such as methotrexate, can cause aplastic anaemia, agranulocytosis and thrombocytopenia. These conditions can result in a much more rapid destruction of periodontal tissues, excessive bleeding, a prolonged gingival bleeding time, oral ulceration, swollen gingiva or opportunistic infections.

## Drug Information Unit (DIU), TUTH

The DIU under the Department of Clinical Pharmacology has provided following services during the year 2006

- *Publication of Drug and Therapeutics Letter*: Four issues were published.
- *Question answering services*.

Question answering service included drug related questions on drug treatment of hepatitis c infection and monitoring of the treatment; chloramphenicol induced pancytopenia: its incidence, mechanism, antibiotic spectrum, management and prognosis ; adverse effects of sulfasalazine and dosage form of metformin.

### -Study on Adverse Drug Reactions:

The study on adverse drug reactions included data collection on suspected drug, type of reactions, outcome and any sequelae from the reaction. The data has been collected from different wards of TUTH.

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"Drug and Therapeutics Letter" is also available now in the following websites:<http://www.teachinghospital.org.np/diu.html>,<http://www.iom.edu.np/diu.html>

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