

GUIDELINES FOR THE MANAGEMENT OF PATIENTS INFECTED WITH HEPATITIS C VIRUS

CIRCUMSTANCES WHEN TESTING FOR HCV SHOULD BE CONSIDERED

As part of the work-up of any patient with hepatitis/liver disease and blood/tissue donors.

Members of high risk groups should be counselled about HCV infection and offered testing, especially if treatment is likely to be offered to those found to be infected.

HIV infected individuals.

Practical point

Remember the window period. Negative antibody tests in cases of recent exposure should either be repeated or supplemented by PCR for HCV RNA which becomes positive before seroconversion.

TESTS FOR HCV THAT SHOULD BE EMPLOYED

At least a second generation ELISA supplemented by a second generation RIBA, e.g. Abbott.

Ideally antibody positive sera should undergo PCR for HCV RNA. A positive result confirms infection and indicates ongoing viraemia.

Practical point

An unconfirmed ELISA is not conclusive evidence of HCV infection.

FURTHER INVESTIGATION TO BE UNDERTAKEN WHEN HCV INFECTION IS DIAGNOSED

PCR for HCV RNA.

Estimation of transaminases, especially ALT, bilirubin, alkaline phosphatase.

Tests of liver synthetic function, e.g. albumin, prothrombin ratio.

Serological tests for hepatitis B and HIV.

Antibodies to smooth muscle and liver/kidney microsomes (to exclude autoimmune hepatitis).

Practical points

Transaminase levels may fluctuate and should be repeated 3 to 4 times after 3 to 6 months.

In the future, quantitative PCR may be able to give an accurate assessment of viral load.

INDICATIONS FOR LIVER BIOPSY

Ideally in all patients, but in practice this is unrealistic. In the following list the first two criteria are essential and the other three increase the benefit to be derived from biopsy.

The patient is willing to undergo the procedure.

There is easy access to a doctor skilled in and willing to perform the procedure.

Persistently or intermittently elevated ALT. HCV RNA positive by PCR.

The physician is willing to offer treatment on the basis of adverse pathological findings.

A budget has been agreed for drug costs, i.e. for interferon.

Practical point

A normal ALT does not exclude serious liver pathology.

INDICATIONS AND AIMS FOR INTERFERON TREATMENT

In acute HCV infection to reduce the number of cases of chronic infection.

In chronic HCV infection when a biopsy has shown chronic active hepatitis, with the aim of reducing liver inflammation and progression to cirrhosis.

Practical points

Treating end-stage liver disease is pointless but patients with early cirrhotic change may be offered treatment. At present reduction of viral load is not an aim of treatment, mainly because of the difficulty in accurate assessment.

TREATMENT REGIME WITH INTERFERON

In acute infection, 6 mega units of alpha interferon given by subcutaneous injection, thrice weekly for 6 months. Patients should be warned about side effects, the most common being flu-like symptoms for which paracetamol may be taken prophylactically.

Progress is monitored by serial measurements of HCV RNA and ALT; if the ALT remains elevated after 4 weeks, consider increasing the dose to 6 mega units.

If there is no response after 3 months, stop treatment. At present there are no therapeutic options for these patients. In 50 per cent of patients there is an immediate response, i.e. a reduction in HCV RNA and ALT.

Practical points

Dosage schedules are likely to change in the light of the results from future clinical trials; 50 per cent of patients who respond relapse when treatment is stopped. In patients with a normal ALT before treatment but when chronic active hepatitis is found on liver biopsy, success or failure with treatment can be assessed only by repeated liver biopsy.

PROCEDURE WHEN THE PATIENT RELAPSES FOLLOWING A SUCCESSFUL RESPONSE TO INITIAL TREATMENT

A further course of 3 to 6 mega units, thrice weekly for 6 months, should be prescribed.

A third course may be offered to those who have responded to a second course but then relapsed.

Some patients consistently respond to interferon but relapse when treatment is stopped; then continuous treatment may be offered over a period of several years with the dose of interferon being titrated against ALT.

ADVICE TO BE GIVEN TO PATIENTS WITH CHRONIC HCV INFECTIONS

Avoid alcohol.

Take care to avoid the risk of transmission to others; toothbrushes and razors should not be shared.

Cuts or other wounds should be treated in such a way that there is no risk to others.

It is courteous to inform a dentist or doctor treating you, particularly if invasive procedures are planned.

The risk of sexual transmission is small but exists.

The use of barrier methods of contraception should be discussed with any prospective sexual partner.

Issues arising in pregnancy should be discussed with a doctor who is a specialist.

FOLLOW-UP OF A PATIENT WITH A NEGATIVE PCR FOR HCV RNA, NORMAL ALT AND LIVER BIOPSY THAT IS EITHER NORMAL OR SHOWS MINIMAL INFLAMMATION

Such a patient is at low risk of ultimately developing cirrhosis, but due to our inability to predict the outcome with certainty, annual review with repeat estimations of ALT and HCV RNA is sensible.

PRECAUTIONS FOR CARE WORKERS WHEN DEALING WITH HCV INFECTED PATIENTS

Wear gloves and protective clothing where exposure to bodily fluids, especially blood, is likely.

Cover cuts or abrasions.

Avoid penetrating injuries by contaminated items.

If such injuries occur, encourage bleeding by squeezing the wound and then wash it thoroughly in warm, running water.

Practical point

There is no evidence that treatment with interferon prevents HCV infection in health care workers who have suffered needlestick injuries, but it may reduce the rise of chronicity in those who develop acute infection.

TOWARDS VICTORY IN EUROPE: THE BATTLE FOR WALCHEREN (PART II)

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THE ASSAULT ON FIDELIO

The attack would be at close contact as there was no air cover, no supporting artillery fire, no tanks and no weapons heavier than the mortars and machine guns carried by the HW troop. The approach would be a 'down, up at the double, down' affair with success depending on field-craft, skill with small arms and grenades and the dash and determination of the marines. Sir Arthur Bryant's dictum would apply:

'On the day of the battle everything turns, not as in a ship on the captain, but on the individual private.'

'Y' troop led the attack on W11, (Fig 12, p 473) crossing the start line at H-Hour (1700 hrs). Almost immediately an enemy shell or mortar caused seven casualties. These were carried back to the RAP. 'Y' troop then advanced on W11 capturing the first two objectives. Captain Flower, the troop commander, was wounded in the chest and arm by a German stick grenade (a grenade fixed to a wooden handle which enables it to be thrown further). Despite this he rushed a German weapon pit under fire, killing with his Tommy gun the three men manning it. 'A' troop then took over and although the troop sergeant major and a marine were killed by fire from the direction of the pumping station on the left (northwest) of the main battery (Fig 12) the troop advanced to a position close to the so-called 'umbrella' feature (Fig 3(b), p 456). 'Y' troop had then to deploy a section to deal with the fire coming from the direction of the pumping station but the remainder joined 'A' troop on the forward attack. The joint 'A' and 'Y' troops then split, one section going to the left and one to the right. As the attack was pressed home Captain Dobson, the 'A' troop commander, was wounded and Lieut. Style who rushed an enemy position was killed when he was met by a shower of stick grenades. Casualties were occurring all the time. The remainder of 'A' and 'Y' troops under Lieuts. Wenham and Winter continued to try and find a way into the main battery position by going round it. 'B' troop in support now crossed the start line but after covering 400 yards its troop commander, Captain Moyes, was wounded. Lieut. Lloyd took over. As the troop came under heavy fire at close range from an enemy machine-gun post Troop Sergeant Major England charged alone up a soft sandy slope firing a Bren gun from the hip. He killed two of the machine gunners and the remainder fled. As he worked forward to another position thirty yards further ahead two of his troop joined him. They killed two more Germans and two surrendered. About the same time 'X' troop without their commander, who had been wounded, joined the attack with orders to approach from the left. They were caught in an open position, extricated themselves after suffering casualties, were caught again and again extricated themselves by throwing grenades.

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