Pharmacotherapeutic report on human hepatitis B immunoglobulin (Zutectra®) for the prevention of hepatitis B virus (HBV) re-infection in HBV-DNA negative patients ≥ 6 months after liver transplantation for hepatitis B induced liver failure

Medicine. Zutectra 500 international unit (IU) solution in a pre-filled syringe for subcutaneous injection.

Summary of the therapeutic value

Intended effects. The observed pharmacokinetic properties of subcutaneous hepatitis B immunoglobulin (Zutectra®) are in line with results expected from hepatitis B immunoglobulin administered subcutaneously/intramuscularly. A fixed weekly subcutaneous dose schedule maintained anti-HBs serum levels at those required with hepatitis B immunoglobulin preparations (> 100 IU/l). The 100 IU/l threshold is sufficient for the effective prevention of HBV re-infection. Acceptable serum levels (> 100 IU/l) were also achieved with intramuscular injections.

Unintended effects. The unintended effects of subcutaneous and intramuscular hepatitis B immunoglobulin are comparable. Subcutaneous injection may result in less pain and less bruising at the injection site than intramuscular injection. Due to the small number of patients receiving subcutaneous hepatitis B immunoglobulin, no conclusion can be drawn regarding rare but serious side effects.

Experience. Intramuscular hepatitis B immunoglobulin (HepBQuin®) was introduced in 1997. Only a small number of patients are receiving this medication (off-label) for the prevention of HBV re-infection after a liver transplant. Experience with subcutaneous hepatitis B immunoglobulin is limited.

Applicability. The initiation of treatment with subcutaneous hepatitis B immunoglobulin should be delayed until six months or more after a liver transplant. As a result, the applicability of subcutaneous hepatitis B immunoglobulin may be narrower than intramuscular hepatitis B immunoglobulin.

Ease of use. According to the SPC, patients should receive a subcutaneous injection every week, whilst intramuscular injections can be administered every 4 weeks. However, in clinical practice dose frequencies may be based on serum anti-HBs concentrations. This could reduce the dose frequency of subcutaneous hepatitis B immunoglobulin. Efficacy using a dose schedule with a lower frequency has not yet been evaluated. As the subcutaneous product can be self-administered, it is less burdensome for medical staff than intramuscular injections.

Final conclusion. The intended and untended effects of subcutaneous and intramuscular hepatitis B immunoglobulin are comparable. The dose frequency recorded in the SPC is higher for subcutaneous hepatitis B immunoglobulin than for intramuscular hepatitis B immunoglobulin. However, because patients can be trained to inject themselves, subcutaneous injections are more user-friendly.

For the prevention of hepatitis B virus (HBV) re-infection in HBV-DNA negative patients ≥ 6 months after liver transplantation for hepatitis B induced liver failure, the therapeutic value of subcutaneous hepatitis B immunoglobulin is comparable with that of intramuscular hepatitis B immunoglobulin.