Adefovir is a nucleotide analogue of adenosine with activity against the hepatitis B virus. It is taken orally as a prodrug (adefovir dipivoxil) and is active against wild type hepatitis B virus and lamivudine-resistant variants. The most common adverse effect of adefovir is gastric intolerance. It can cause renal impairment. Adefovir is eliminated predominantly by renal excretion with a half-life of about 8 hours in patients with normal kidney function. Reduced dosage frequency is required in renal impairment.

Interferons are naturally occurring proteins that belong to the family of cytokines and are released in vivo in response to viral infections. Three major classes have about 8 hours in patients with normal kidney function. Reduced dosage frequency is required in renal impairment. Most adverse effects are dose-related and relatively mild in doses of 100 to 200 mg per day. The adverse effect profile closely resembles that of an anticholinergic drug, namely dry mouth, constipation, blurred vision and urinary retention. Rarely it causes hallucinations and confusion; delirium can develop in elderly patients with renal impairment. At least 50% of patients develop the peculiar skin mottling known as livedo reticularis, and 5% to 10% develop ankle oedema unrelated to congestive heart failure, renal failure or hypoalbuminaemia.

Some patients develop antibodies to interferon after prolonged use and this may reduce its efficacy. A nucleoside reverse transcriptase inhibitor developed for treating HIV. It is also used in the treatment of chronic hepatitis B in those with evidence of hepatitis B virus replication. It is given orally and adverse effects are uncommon. When used as monotherapy for hepatitis B, the major limitation of lamivudine is the development of viral resistance (65% after 4 years).

Oseltamivir (oral) and zanamivir (inhaled) are both inhibitors of influenza virus A and B neuraminidase, which is essential for replication of the virus. If started within 48 hours after symptom onset, they may shorten symptom duration (by approximately one day). The drugs may be used as prophylaxis in institutions (e.g. nursing homes), to minimise the spread of infection. Zanamivir should be used with caution in people with asthma or chronic obstructive pulmonary disease because bronchospasm may be exacerbated.

Ribavirin has a broad antiviral spectrum, inhibiting the replication of a wide range of RNA and DNA viruses. It is a nucleoside analogue used in the treatment of chronic hepatitis C in combination with peginterferon alfa or interferon alfa. It has also been used to treat certain haemorrhagic fevers and severe measles infection in immunocompromised patients, and serious lower respiratory tract infection with respiratory syncytial virus (RSV) in hospitalised children.

Haemolytic anaemia is a common adverse effect. Frequent monitoring and dose reduction may be required (particularly in the first 6 weeks). It is contraindicated in patients with haemoglobinopathies or those requiring dialysis. Caution is required in patients with or suspected of having, ischaemic heart disease. Blood counts must be monitored on a regular basis along with serum electrolytes and creatinine.

Skin rashes are occasionally seen early in treatment (10% to 15% of cases), but are usually mild and may not require cessation of therapy. Ribavirin is embryotoxic or teratogenic, or both, at doses well below the recommended human dose in all animal species studied. It is also genotoxic (mutagenic) and reversibly impairs spermatogenesis. It accumulates intracellularly and its half-life in humans is approximately 12 days. Therefore Ribavirin is contraindicated in women who are pregnant or who may become pregnant during exposure. It is contraindicated in men whose partner is fertile unless both are using effective contraception.

Pregnancy should be avoided until 6 months after completion of therapy. A man whose partner is already pregnant should use condoms, as it is not known if the concentration in sperm may affect the fetus.