European Monitoring Centre
for Drugs and Drug Addiction

UPDATED 28. 5. 2013

PERSPECTIVES ON DRUGS

Hepatitis C treatment for injecting drug users

Hepatitis C is the most common infectious disease in injecting drug users, among whom it is usually transmitted through the sharing of injecting equipment such as needles and syringes. Most of those who become infected go on to develop chronic HCV infection, which can lead to severe health problems in individuals and place a major burden on health care systems. Yet hepatitis C is both preventable and curable, and interventions in this field, particularly the development of new medicines to treat hepatitis C, are making rapid progress.

A hidden epidemic of hepatitis C

Hepatitis C virus (HCV) infection is highly prevalent in injecting drug users across Europe, with national infection rates for this group ranging from 18% to 80%. However, infected individuals often show no noticeable symptoms, and many are unaware that they are carrying the virus, leading to it being referred to as a 'hidden' epidemic. Injecting opioid users in Europe constitute an ageing population, which includes many who have been living with hepatitis C for 15 to 25 years. The natural history of chronic hepatitis C virus infection (cirrhosis risk escalates after 15 to 20 years) and the ageing cohort effect in this population mean that a large burden of advanced liver disease can be expected over the next decade.

Reducing infections among injecting drug users

Among injecting drug users, the sharing of needles and syringes is the key risk factor for acquiring HCV infection, although there is considerable evidence of a potentially high risk of infection associated with sharing drug-preparation equipment such as cookers, filters, swabs and water (Pouget et al., 2012). However, there is good evidence to show that retention in opioid substitution treatment reduces injection frequency (Gowing et al., 2008), and that it is most effective in reducing HCV transmission when used alongside interventions that support safer injection practices (Hagan et al., 2011). Two studies that examined the independent and combined effects of needle and syringe programmes and opioid substitution treatment on HCV incidence concluded that the combined effect of these two interventions resulted in the greatest reductions in HCV transmission (Turner et al., 2011; Van Den Berg et al., 2007).

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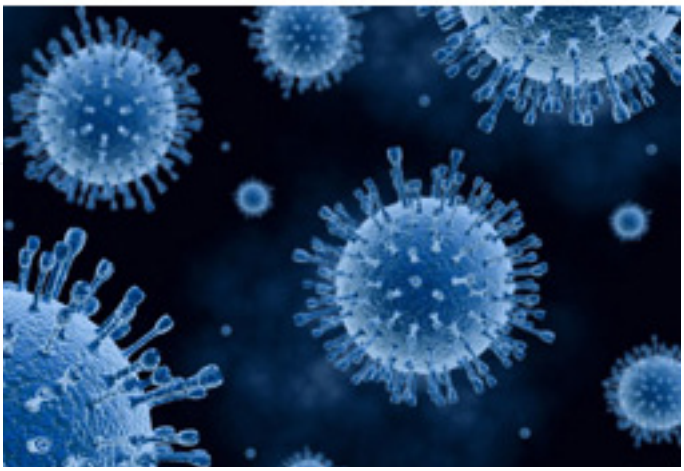
Modelling studies have been used to explore the potential effectiveness of different hepatitis C interventions, and these indicate that it may be difficult for opioid substitution treatment and high-coverage ([1]) needle and syringe programmes to greatly impact on hepatitis C prevalence. Modelling the scale-up of both interventions for the United Kingdom (with 40% baseline chronic hepatitis C prevalence among the target population) shows that they are unlikely to lead to substantial reductions in the prevalence of chronic hepatitis C after 10 years, unless both interventions cover 80% or more of the injecting population (Vickerman et al., 2012).

Hepatitis C treatment as prevention

Recent advances in hepatitis C treatment approaches, including the use of direct-acting antiviral agents and interferon-free treatment regimes show much promise, including the potential for treating hepatitis C among injecting drug users (see box 'Current treatment and new hepatitis C medicines'). In this area, modelling studies suggest that hepatitis C treatment could play an important role in preventing spread of the virus. A study by Martin et al. (2011) indicated that a 13% reduction in hepatitis C prevalence might be achieved over 10 years as a result of treating 10 infections per year per 1 000 injecting drug users in injecting drug use populations with 40% prevalence.

Barriers to accessing hepatitis C treatment

In spite of recent improved treatment outcomes for hepatitis C patients, available data show treatment uptake continues to be very low among injecting drug users. The literature highlights a number of possible reasons for this. Service providers cite concerns around adherence, risk of exacerbation of psychiatric disorders and the potential for reinfection after treatment as reasons for not assessing or treating hepatitis C in injecting drug users (Edlin et al., 2001; Soriano et al., 2002). On the part of patients, poor knowledge about hepatitis C and treatment availability, the absence of noticeable symptoms (Grebely et al., 2011) and the perceived side-effects of treatment (Swan et al., 2010) are named as barriers for accessing hepatitis C care. Finally, until recently, current drug injecting was an exclusion criterion for receiving government-funded hepatitis C antiviral treatment in a number of European countries. This obstacle, however, is now being removed, with most clinical guidelines



Strategies to improve treatment and care

A number of the lessons learned in responding to the HIV epidemic can be transferred to managing the spread of hepatitis C among injecting drug users, including recognition of the importance of putting in place a set of comprehensive, coordinated and multidisciplinary responses. These need to include the provision of HCV testing, assessment, patient education on the long-term consequences of HCV-related liver disease. The enhancement of treatment uptake is important for injectors and effective treatment options need to be available and easily accessible for this population group. The co-location of hepatitis C treatment and opioid substitution treatment is likely to facilitate user access, and might also be linked with mental health care. Improving treatment adherence among injecting drug users is another area where improvements can be made and the use of case management, support services and provider education and training is likely to enhance care.

Conclusion

This analysis draws attention to the high levels of HCV infection among injecting drug users, both as an urgent public health priority, and as a field that has recently seen major advances in medical interventions. If hepatitis C treatments for injecting drug users are to be effective, they will need to be embedded in and delivered as part of a comprehensive package of interventions. An important area for future investigation will be to review the uptake of hepatitis C treatment among drug injectors, and identify and challenge any barriers that prevent them from receiving an adequate and equitable service.

([1]) Where injecting drug users receive on average one or more sterile syringes for each injection reported.

Facts and figures

Hepatitis C is a liver disease caused by the hepatitis C virus (HCV)

The incubation period for hepatitis C ranges from 2 weeks to 6 months

Following initial infection with HCV, approximately 80% of people do not exhibit any symptoms

Approximately 150 million people worldwide have chronic HCV infection (WHO, 2012)

Between 18% and 80% of injecting drug users in Europe are infected with HCV

About 75–85% of newly infected individuals develop chronic disease and 60–70% of those with chronic HCV infection develop chronic liver disease; 5–20% develop cirrhosis and 1–5% die from cirrhosis or liver cancer

In 25 % of liver cancer patients, the underlying cause is hepatitis C

Interactive element: video

Video: hepatitis C treatment among injecting drug users available on the EMCDDA website: emcdda.europa.eu/topics/pods/hepatitis-c-treatment

Current treatment and new hepatitis C medicines

The goal of treatment is to eradicate hepatitis C virus (HCV) infection in order to prevent the complications of HCV-related liver disease, including fibrosis, cirrhosis, cancer and death. Until recently, the standard hepatitis C treatment has been injectable pegylated-interferon-alpha (peg-IFN-alpha) 2a or 2b (interferon is a protein that interferes with viral replication; in pegylated form it lasts longer in the body) combined with oral ribavirin (antiviral medication), so-called peg-INF-riba.

Recent research on new hepatitis C medicines, however, has focused on the use of direct-acting antiviral agents (treatments that target the virus), with an aim to arrive at orally administered interferon-free regimes.

Direct-acting antiviral agents target particular stages in the life cycle of the virus in order to prevent it replicating. There are two main areas of research in this field. The first is concerned with drugs or therapies, known as protease or polymerase inhibitors, which block particular proteins on the virus. The second area is looking at drugs that interfere with the genetic structure of the virus. Research is currently being carried out into inhibitors that can interrupt the activity of the enzymes linked with the replication of the hepatitis C virus.

Since 2011, these direct-acting antiviral agents have taken over as the standard treatment option for hepatitis C (administered in combination with peg-INF-riba). The two most widely used are telaprevir and boceprevir. However, the costs of antiviral medicines remain high – potentially presenting a barrier for individuals wishing to initiate or continue hepatitis C treatment.

But things are changing rapidly and there are many new hepatitis C medicines in the pipeline, often showing promising results and entering phase II and III clinical trials. These new hepatitis C treatments aim to improve on the older treatment regimes in a number of ways. They can be taken orally rather than injected; they are taken once a day rather than two times a day or more; the side-effects of the medication are likely to be significantly reduced; and treatment has a shorter duration – it is expected that a sustained virological response in 90% to 100% of patients will be achieved within 12 weeks, much faster than in current treatment regimes. It is hoped that these improvements will both increase uptake of treatment and facilitate retention in treatment.

The possibility of developing a therapeutic vaccine, which would prevent the development of chronic HCV infection following repeated exposure, is feasible and being investigated, although a long way off at present, according a recent review (Grebely et al., 2012).

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