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Title **The Cost Effectiveness of Testing for Hepatitis C (HCV) in Former Injecting Drug Users**

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Aim

To evaluate the effectiveness and cost effectiveness of testing for hepatitis C virus (HCV) among former injecting drug users.

Conclusions and results

Case finding for HCV is likely to prevent, for 1000 people approached, 3 cases of decompensated cirrhosis, 3 deaths due to HCV, and 1 case of hepatocellular cancer (at 30 years). Twenty-five additional people are likely to undergo combination therapy as a result of initial case finding. One liver transplant is likely to be prevented for 10 000 people included in case finding. Case finding is likely to cost around GBP 760 000 more than a policy of no case finding. The total cost of either strategy is high and driven mainly by the cost of combination therapy. Systematically offering testing to 1000 people would cost around GBP 70 000. Case finding is likely to result in an additional life-year gained at a cost of GBP 20 084. The cost-utility of case finding is estimated at GBP 16 514 per QALY. If NHS policy makers view GBP 30 000 per QALY as an acceptable return on investment, there is a 74% probability that case finding for HCV would be considered cost effective (at GBP 20 000 per QALY the probability is 64%). All analyses showed a high probability of case finding being considered cost effective at GBP 30 000 per QALY. Case finding in drug services is likely to be the most expensive. Correspondingly, benefits are highest for this strategy, and cost effectiveness is similar to the general case. Case finding in general practice by offering testing to the whole population aged 30 to 54 years is estimated to be the least expensive option since few people accept the offer, and HCV prevalence in this group is much higher than in the general population. Two approaches to case finding in prison were considered. These differed substantially in the prevalence of cases identified in the tested populations. Subgroup analyses based on duration of infection show that case finding is likely to be most cost effective in people whose infection is more long-standing. In people infected more than 20 years previously, case finding yields benefits at around GBP 15 000 per QALY. Treatment effectiveness was modeled using estimates from randomized controlled trials, and lower rates of viral response may be seen in practice. However, estimates of cost effectiveness remained below GBP 30 000 for all levels of treatment effectiveness above 58% of those shown in the relevant trials. The value of information analysis, assuming that 10 000 people might be eligible for case finding and that programs would run for 15 years, suggests that the maximum value of further research into case finding exceeds GBP 19 million.

Recommendations

Case finding for hepatitis C is likely to be considered cost effective by NHS commissioners. Further improvements in the effectiveness of treatments to slow or halt disease progression are likely to improve the cost effectiveness of case finding. Case finding is likely to be most cost effective if targeted at people whose HCV disease is probably more advanced.

Methods

A decision analytic model was developed to investigate the impact of case finding and treatment on progression of HCV disease in a hypothetical cohort of 1000 people. This was compared with a cohort in whom no systematic case finding is implemented, but spontaneous presentation for testing is allowed to occur. A group of epidemiological and clinical experts informed the structure of the model, which has three main components: testing and diagnosis, treatment, and long-term consequences of infection. A fourth component, case-finding strategies, examines the potential impact of case finding in three settings: prisons, general practice, and drug services.

Further research/reviews required

- Empirical work to specify, in practice, different approaches to case finding in appropriate settings and to evaluate their effectiveness and cost effectiveness directly.

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