The incidence of hepatitis E virus (HEV) has increased substantially in Europe recently, thereby threatening blood safety” de Vos et al (2017).

Abstract:

BACKGROUND: The incidence of hepatitis E virus (HEV) has increased substantially in Europe recently, thereby threatening blood safety. A cost-effectiveness analysis for HEV screening of blood donations in the Netherlands was performed.

STUDY DESIGN AND METHODS: A simulation model was developed to mimic the process of donation, infections in the donor population, donation testing, and transmission to transfusion recipients. The variability of viral loads among donors was modeled using observed loads. The number of (incurable) chronic HEV infections among organ and stem cell transplant patients and the costs avoided by implementing blood screening were estimated.

RESULTS: HEV screening of whole blood donations in pools of 24 would prevent 4.52 of the 4.94 transfusion-associated chronic HEV infections expected annually, at approximately €310,000 per prevented chronic case. Per case not curable by ribavirin prevention, costs are
approximately 10 times higher. Selective screening, if logistically feasible, could reduce screening costs by 85%. Sensitivity analyses show that uncertainty in the HEV transmissibility and the frequency of HEV clearing greatly impact the estimated cost-effectiveness. Of all HEV infections nationwide one in 700 is estimated to be due to blood transfusion, while for chronic infections this is one in 3.5.

CONCLUSION: Despite uncertainties in our estimates, preventing HEV transmission by screening of blood donations appears not excessively expensive compared to other blood-screening measures in the Netherlands. However, the impact on HEV disease burden may be relatively small as only a minority of all HEV cases is transmitted by blood transfusion.

Reference:


DOI: 10.1111/trf.13969

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