

NPA BRIEFING



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NPA briefing note on hepatitis E virus

Issue:

Reports in the press have suggested consumption of pork products is linked with the rise in hepatitis E cases in humans in England & Wales.

Background:

- Hepatitis E is a disease of the liver. Infection in healthy humans is usually mild and clears by itself in 1-4 weeks. However, as is often the case, people that have suppressed immune systems are at risk of developing chronic liver inflammation.
- There are 4 types of hepatitis E virus (HEV), G1 - G4. The G3 virus is found worldwide, but increased surveillance of HEV by Public Health England since 2003 has identified an increase in the number of human cases in England & Wales^[1]. There were 691 cases in 2013.
- Historically hepatitis E was associated with travel to countries where sanitation is poor and the virus is spread by consumption of food or water contaminated by sewage.
- However, in 2013 69% of the cases were indigenous, ie. occurred in people that had not travelled outside of England and Wales.
- Analysis of these home-acquired cases has identified that the virus could have been acquired through the consumption of processed pork products^[2].
- Pigs are a natural reservoir for HEV and infection is present in pig populations worldwide.
- Infection in pigs involves the virus being present in the blood with temporary spread of the virus into muscle and other tissues. It persists for longer in the liver than in other tissues. The virus is also shed in pig faeces.
- Samples of blood and gut content collected in 2013 as part of a survey of UK slaughter pigs were tested for presence of the virus itself and antibodies to the virus. The virus was detected in 129/629 (20.5%) pigs and 92.8% (524/629) tested positive for HEV antibodies (indicating exposure at some point in life)^[3].
- However, high-level presence of the virus (ie. a level that could be infectious to humans via consumption of the raw pigmeat) was only found in 6 of the pigs sampled.
- In this survey of UK pigs the majority of the viral samples belonged to HEV G3 subgroup 1. Only one pig carried virus belonging to G3 subgroup 2.
- On the contrary, the majority of HEV G3 infections occurring humans in this country belong to subgroup 2^[1].
- There is no evidence to date of this subgroup circulating widely in pigs in the UK, but pigs in US, Asia and Europe are known to carry it.

- It has been reported that 1 in 10 sausages in the UK could potentially be infected with HEV, but this finding was from a limited sample size^[4]. In the study, 63 sausages from 11 batches were sampled and while 6 sausages tested positive for HEV, 5 of these were from the same batch. The origin of the meat in the sausages was also not known.
- In the UK, sausages with the Red Tractor logo are not permitted to include liver or offal, thereby the risk of sausages being contaminated is likely to be lower than in other countries where liver and blood sausages are popular

NPA position:

- Research at Public Health England has shown that the subgroup of hepatitis E causing the majority of human infection in the UK is not the same as the subgroup found in UK pigs. The NPA is aligned with the conclusion of the researchers that if people in this country have contracted hepatitis E virus from eating pork, it is likely to have come from imported pork, rather than British pork.
- AHDB Pork has commissioned a number of research projects to better understand HEV presence on British pig farms and the risk to public health. Further research and surveillance is required to determine the true cause of the rise in hepatitis E cases in the UK.
- NPA recommends that consumers follow the advice from the Food Standards Agency that pork and sausages should be cooked thoroughly until steaming hot throughout, with no pink or red in the centre, to greatly reduce the risk of infection.

References

^[1] Ijaz S, Said B, Boxall E, Smit E, Morgan D, Tedder RS. Indigenous hepatitis E in England and Wales from 2003 to 2012: evidence of an emerging novel phylotype of viruses. *The Journal of infectious diseases* 2014; **209** (8): 1212-8.

^[2] Said B, Ijaz S, Chand MA, Kafatos G, Tedder R, Morgan D. Hepatitis E virus in England and Wales: indigenous infection is associated with the consumption of processed pork products. *Epidemiology and infection* 2013: 1-9.

^[3] Grierson, S. *et al.* Prevalence of Hepatitis E Virus infection in UK pigs at the time of slaughter. *Emerging Infectious Diseases*.

^[4] Berto, A., Martelli F., Grierson S., Banks M. Hepatitis E virus in pork food chain, United Kingdom, 2009–10. *Emerging Infectious Diseases*, **2012**, 18, 8.

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