

Hepatitis E virus in wild ungulates intended for human consumption: a survey in the region of Liguria (NW Italy)

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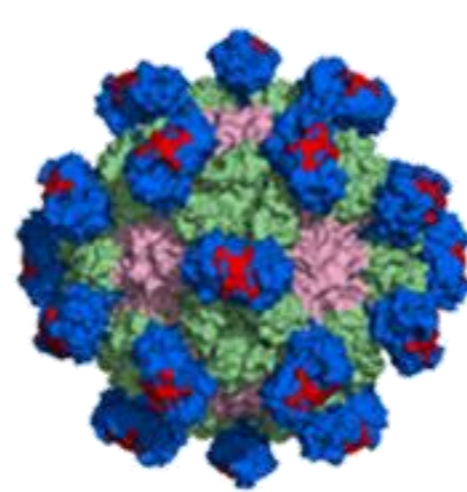
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INTRODUCTION & AIM

Hepatitis E virus (HEV) is an enteric virus belonging to the *Hepeviridae* family. It is responsible for acute hepatitis in humans, through the consumption of contaminated water, and undercooked meat or through being in contact with infected animals.



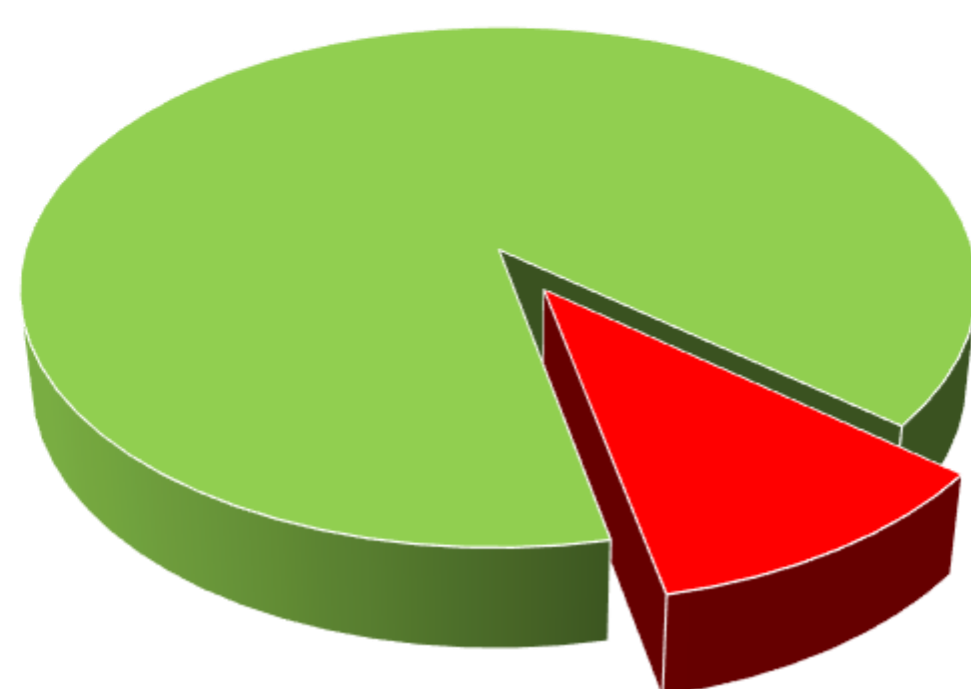
HEV

HEV has eight genotypes; of these, HEV-3 and HEV-4 are zoonotic and are responsible for sporadic cases of food-borne diseases in developed countries. Swine and wild boars are the principal sources of infection for humans. Among the wild species that act as reservoirs of the virus, wild boar is the most investigated in Italy, while limited data on HEV prevalence are present in other ungulates. In this study, we investigated the circulation of HEV in the three most hunted ungulates species in the Region of Liguria (northwestern Italy) (*Sus scrofa*, *Dama dama*, and *Capreolus capreolus*) to assess the potential risk of HEV transmission through the consumption of game meat.

RESULTS

Percentage of positive and negative liver samples to HEV RNA

■ Positive ■ Negative



European fallow deer
0/82 liver



Roe deer
0/155 liver

Wild boar
8/66 liver



Positive animals were:
all < 2 years old
50% male and 50% female

METHOD

SAMPLING

Hunting season 2023-2024



European fallow deer
82 liver

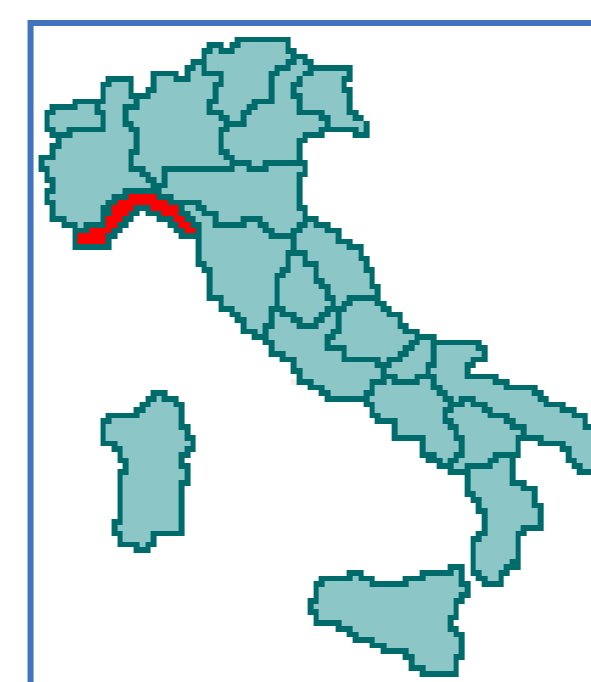


Wild boar
66 liver



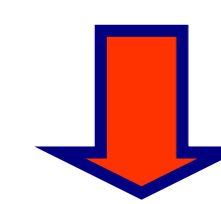
Roe deer
155 liver

SAMPLING MAP

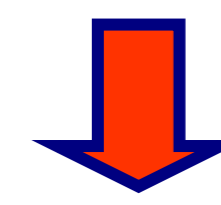


RNA HEV DETECTION

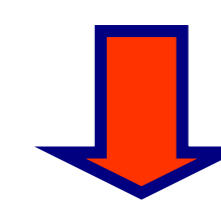
Liver homogenization in 10% (w/v) PBS



Clarification by centrifugation (10,000 g for 5 min)



Nucleic acids extraction (RNA)



Real Time RT-PCR



DISCUSSION & CONCLUSION

The results obtained in this study showed that in the Liguria Region, HEV is present only in wild boars. Therefore, the consumption of uncooked meat, liver products, or direct contact with these species represent a potential risk for consumers and hunters.

REFERENCES

Treagus, S.; Wright, C.; Baker-Austin, C.; Longdon, B.; Lowther, J. The Foodborne Transmission of Hepatitis E Virus to Humans. *Food Environ. Virol.* 2021, 13, 127–145.

Jothikumar, N.; Cromeans, T.L.; Robertson, B.H.; Meng, X.J.; Hill, V.R. A broadly reactive one-step real-time RT-PCR assay for rapid and sensitive detection of hepatitis E virus. *J. Virol. Methods* 2006, 131, 65–71.