

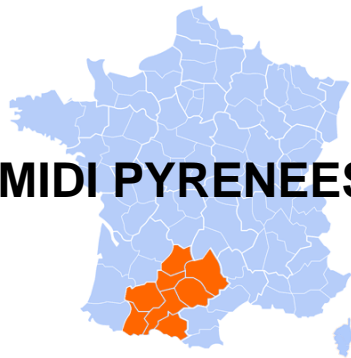
Acute hepatitis E in south-west France over a 5-year period

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**Viral Hepatitis Prevention Board Meeting
Antwerp, 12-13 March 2009**

MIDI PYRENEES :



largest french administrative region

Area
(km²)

Pop. density
(inhab./km²)

Midi Pyrénées

45 348

61

4.4% of the french population
8.3% of the territory

Rural dwelling:

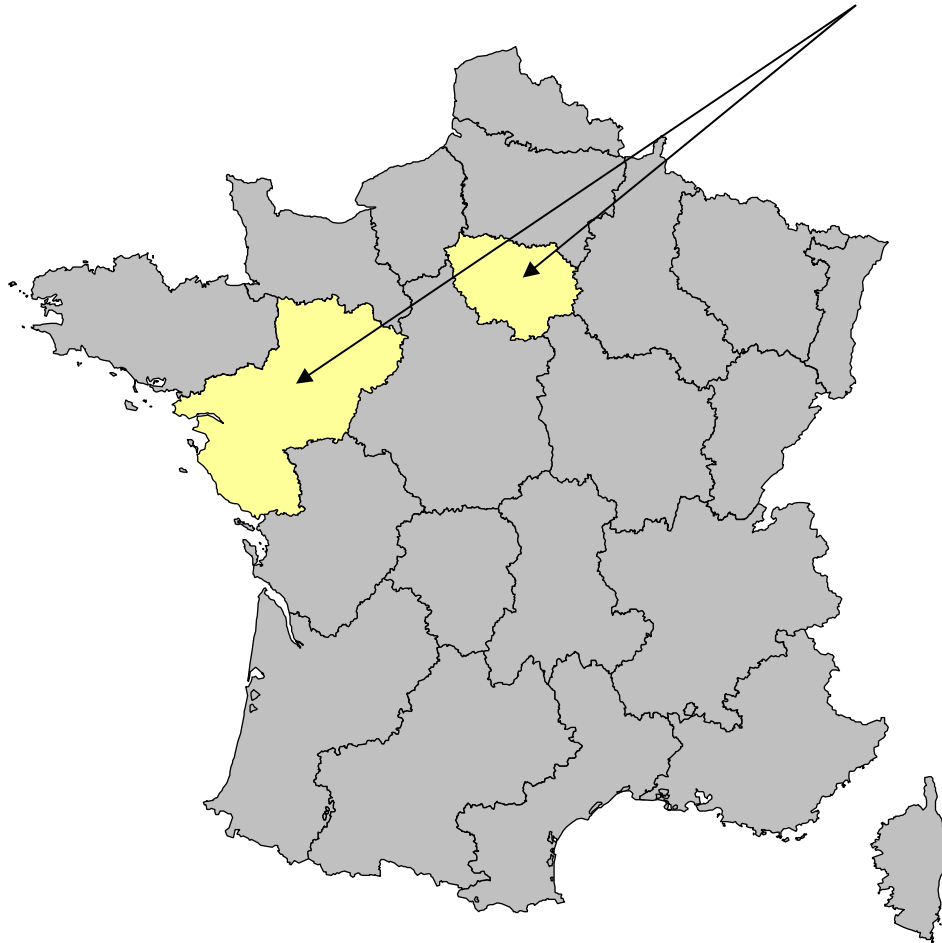
- 40% of the population
- 82% of the regional surface

End of 90's: anti-HEV IgG among patients suffering from acute hepatitis without recent travel history



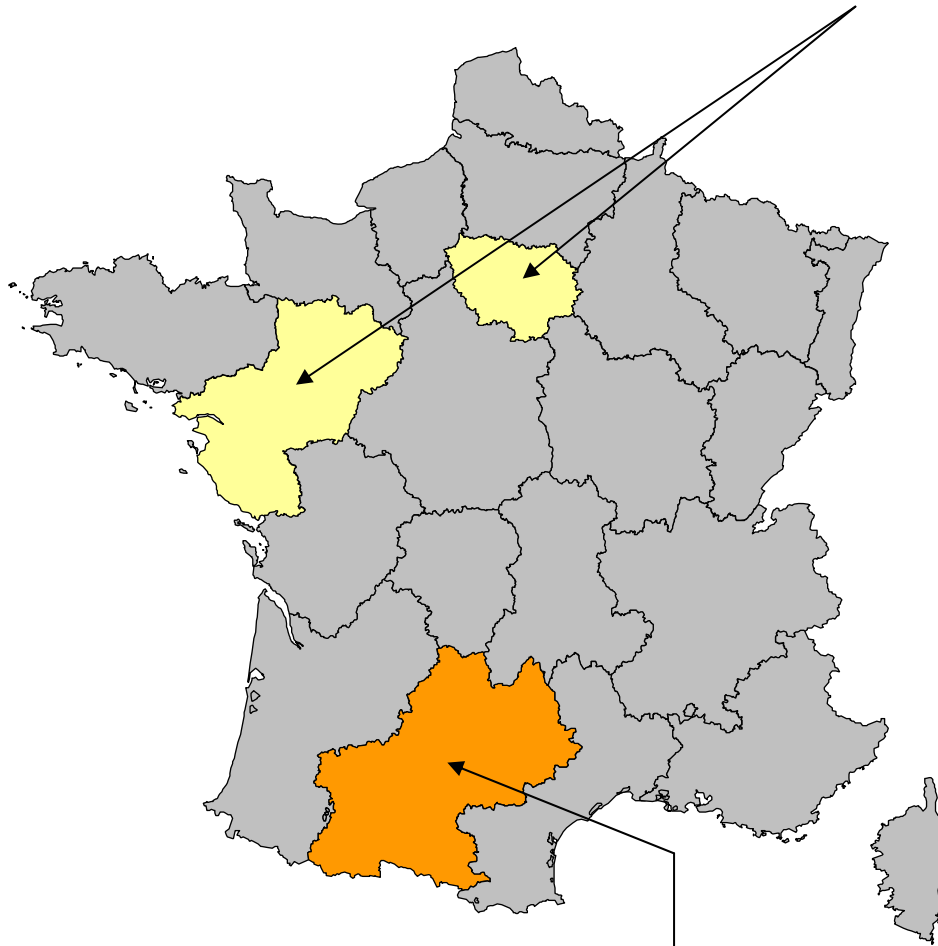
Anti HEV IgG prevalence among blood donors

Boutrouille et al, J Clin Microbiol 2007: 3.50 / 2.91 %



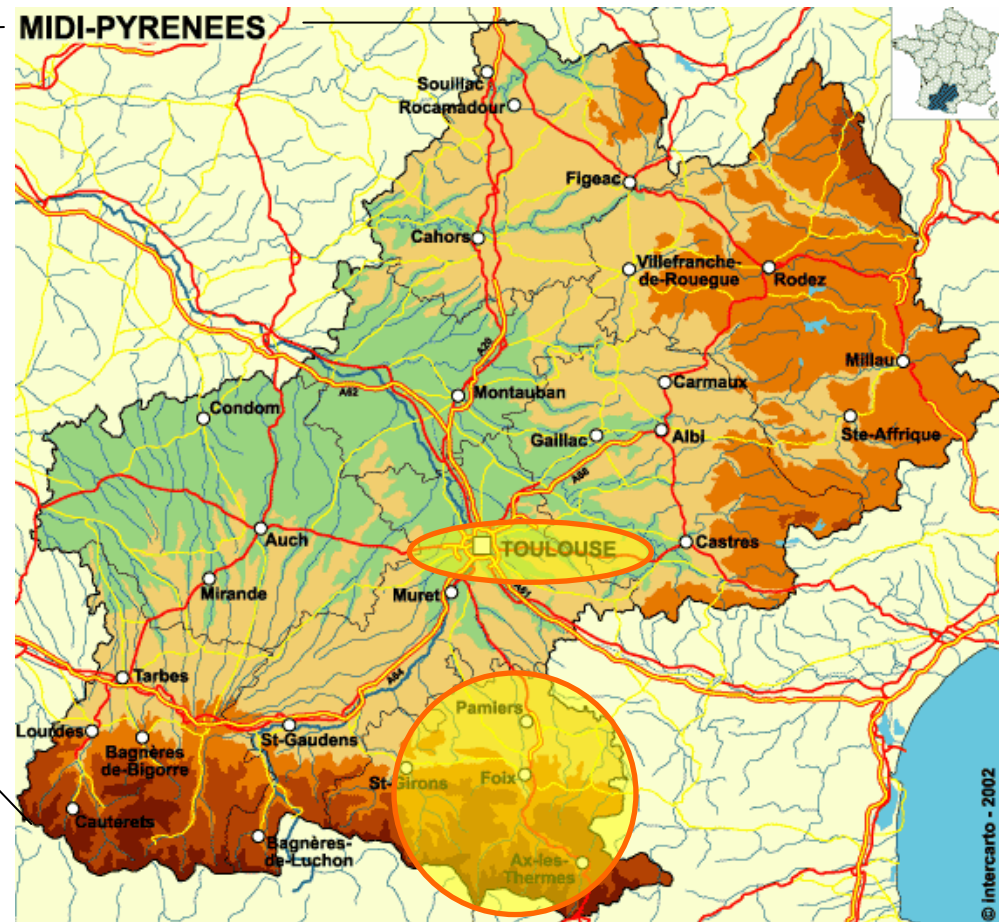
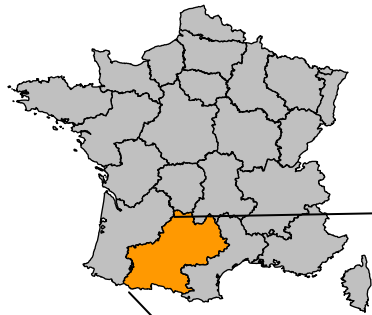
Anti HEV IgG prevalence among blood donors

Boutrouille et al, J Clin Microbiol 2007: 2.91 / 3.50 %

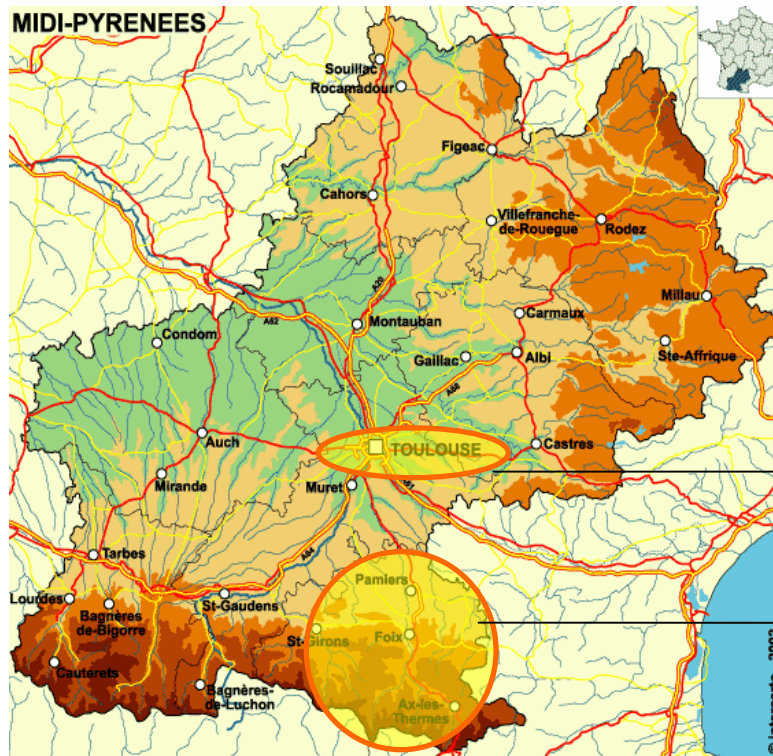


Mansuy et al, J Med Virol 2008: 16.6 %

Anti HEV IgG prevalence among blood donors



Anti HEV IgG prevalence among blood donors



Urban dweller

14.2%

P=0.13

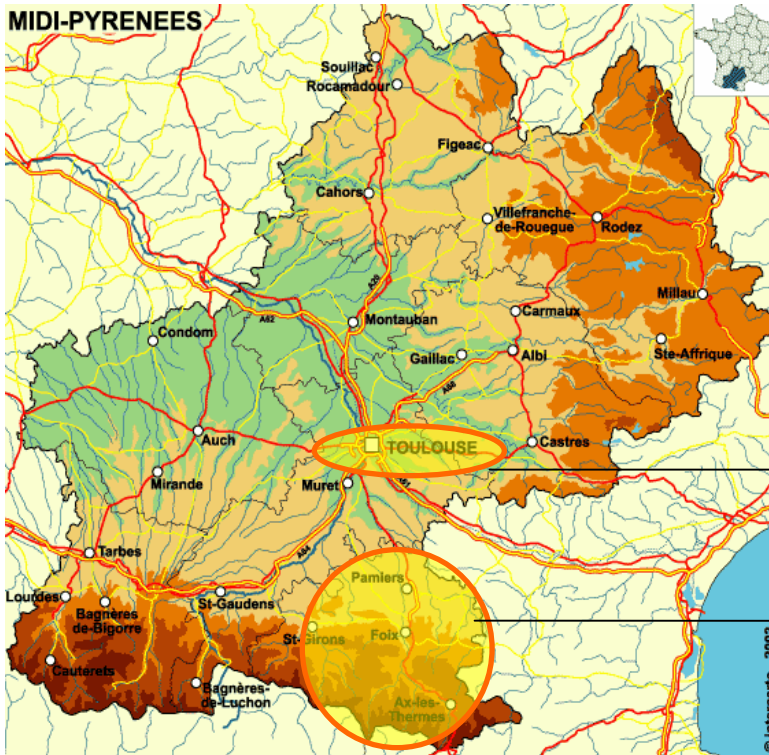
Rural dweller

19.1%

16.6%

1.12 sex ratio

Anti HEV IgG prevalence among blood donors



Urban dweller

11.3%

P=0.07

Rural dweller

17.8%

15.0 %

Anti HEV IgG prevalence among blood donors



Hunters : 31 %

P=0.038

Non hunters : 15.9%

TABLE I. Prevalence of Anti-HEV IgG in Blood Donors and Activities

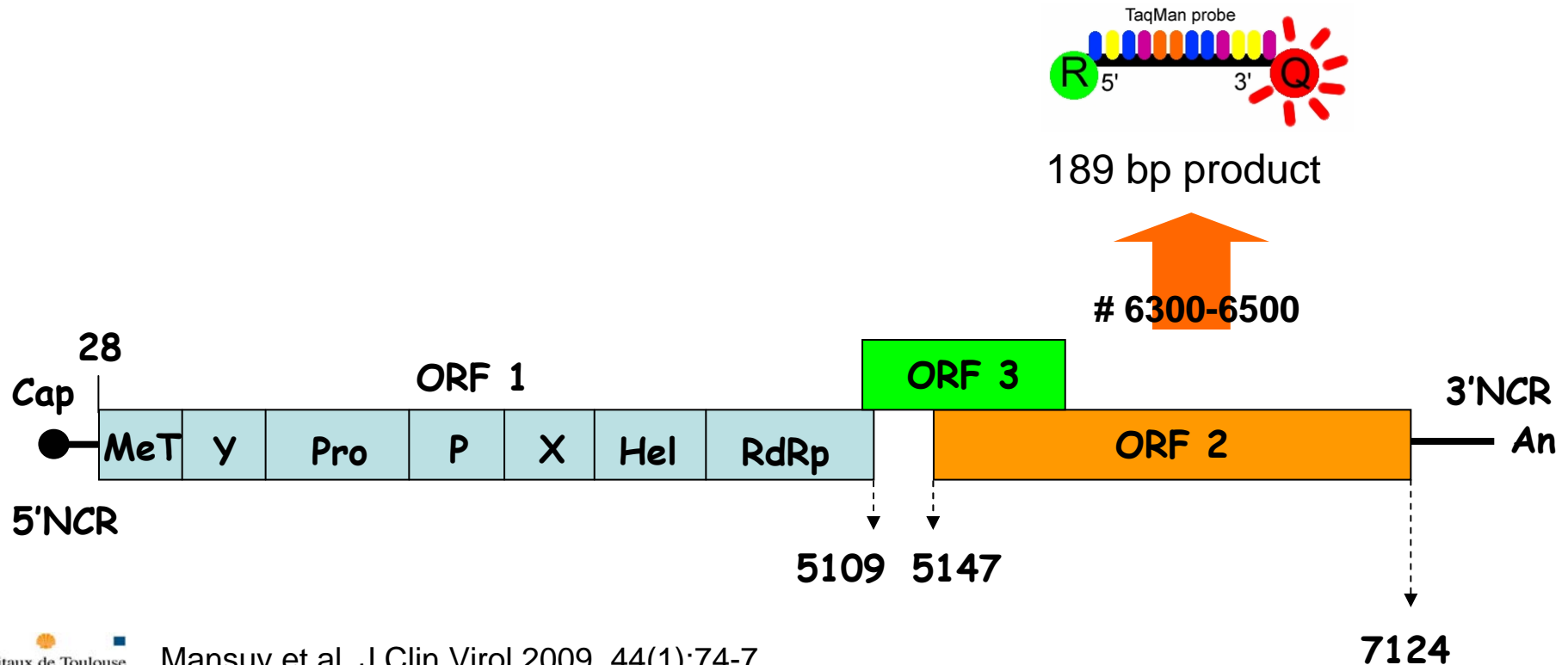
	Blood donors, anti-HEV positive % (n)	<i>P</i>
Hunting (n = 29)	31.03 (9)	0.038
Gardening (n = 195)	15.38 (30)	0.51
Kitchen gardening (n = 71)	21.13 (15)	0.29
Contact with domestic animals (n = 318)	17.61 (56)	0.52
Contact with wild animals ^a (n = 36)	27.77 (10)	0.07
Travel in non-HEV endemic countries (n = 173)	19.65 (34)	0.21
Travel in HEV endemic countries (n = 147)	19.73 (29)	0.79

^aAll hunters had contact with wild animals.

- How many **symptomatic cases** of acute hepatitis E in the area ?
- Is there one or more **risk factors** in the area ?
- Is there one or more **reservoirs** in the area ?

Acute hepatitis E in south West France over a 5-year period

→ Acute cases confirmed thanks to HEV genomic detection

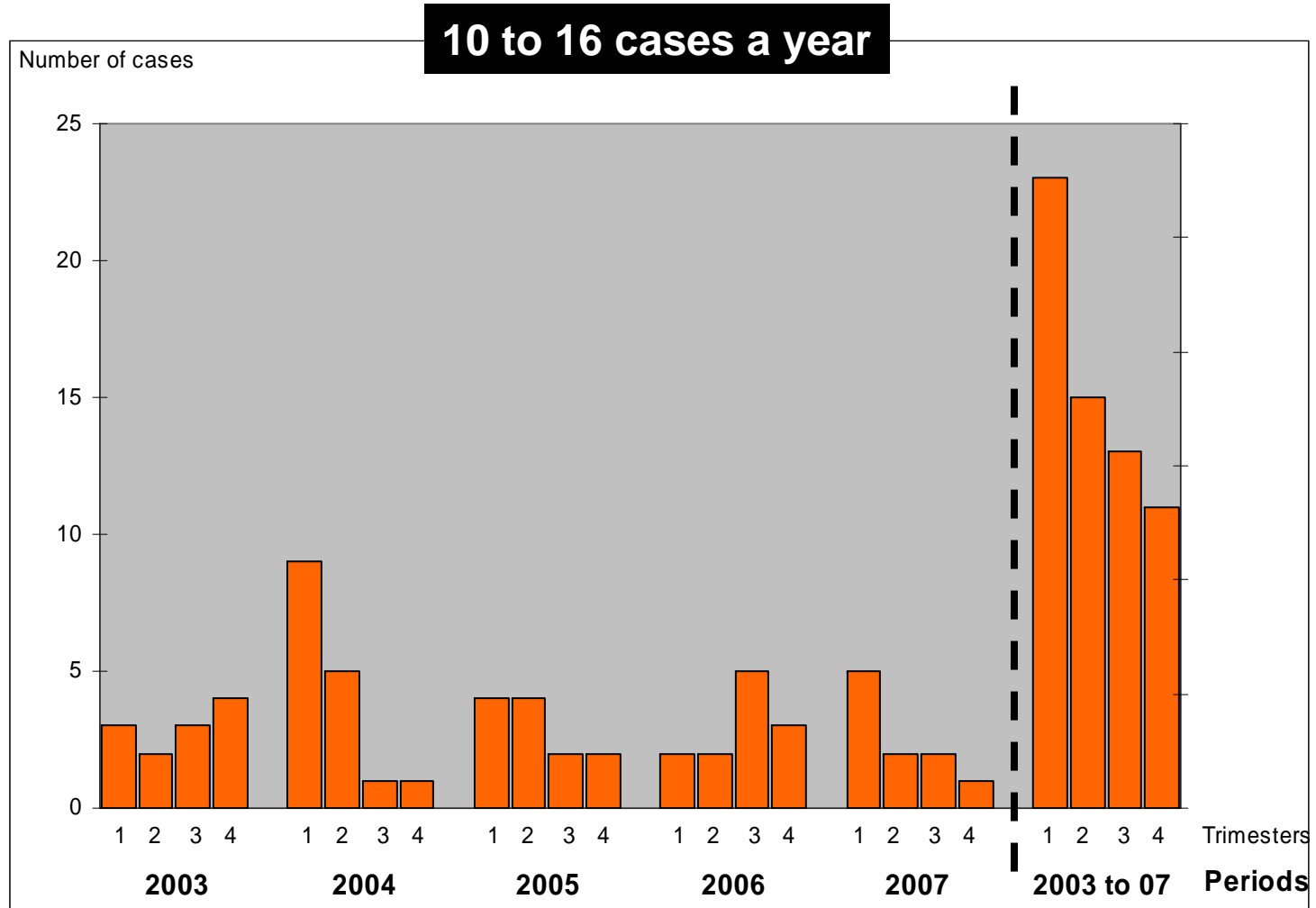


Acute hepatitis E in south West France over a 5-year period

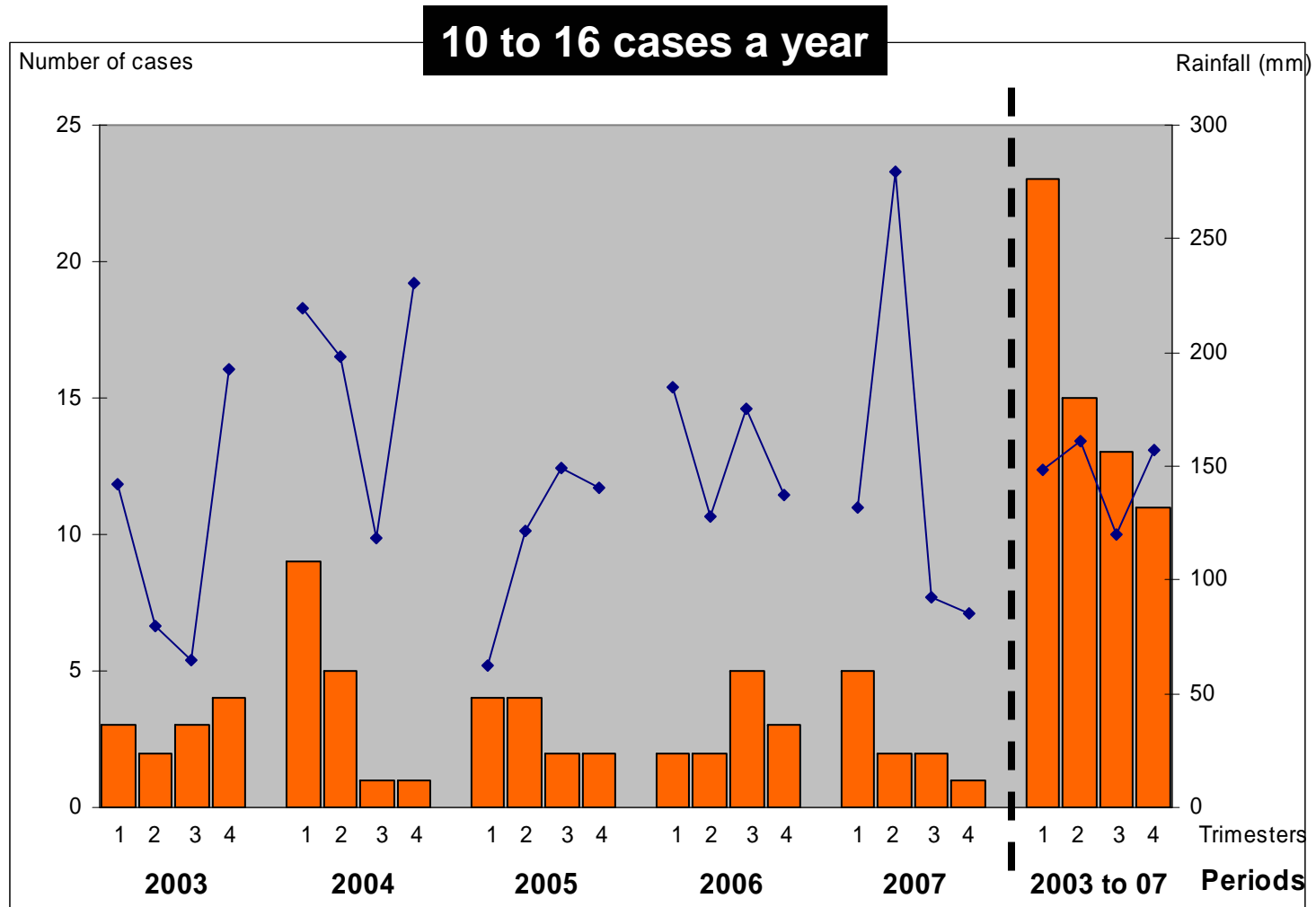
→ Acute cases confirmed thanks to HEV genomic detection

- ☛ **62 cases identified between 2003 and 2007**
(without organ transplanted patients)
- ☛ **20 patients suffering from pre-existing diseases**

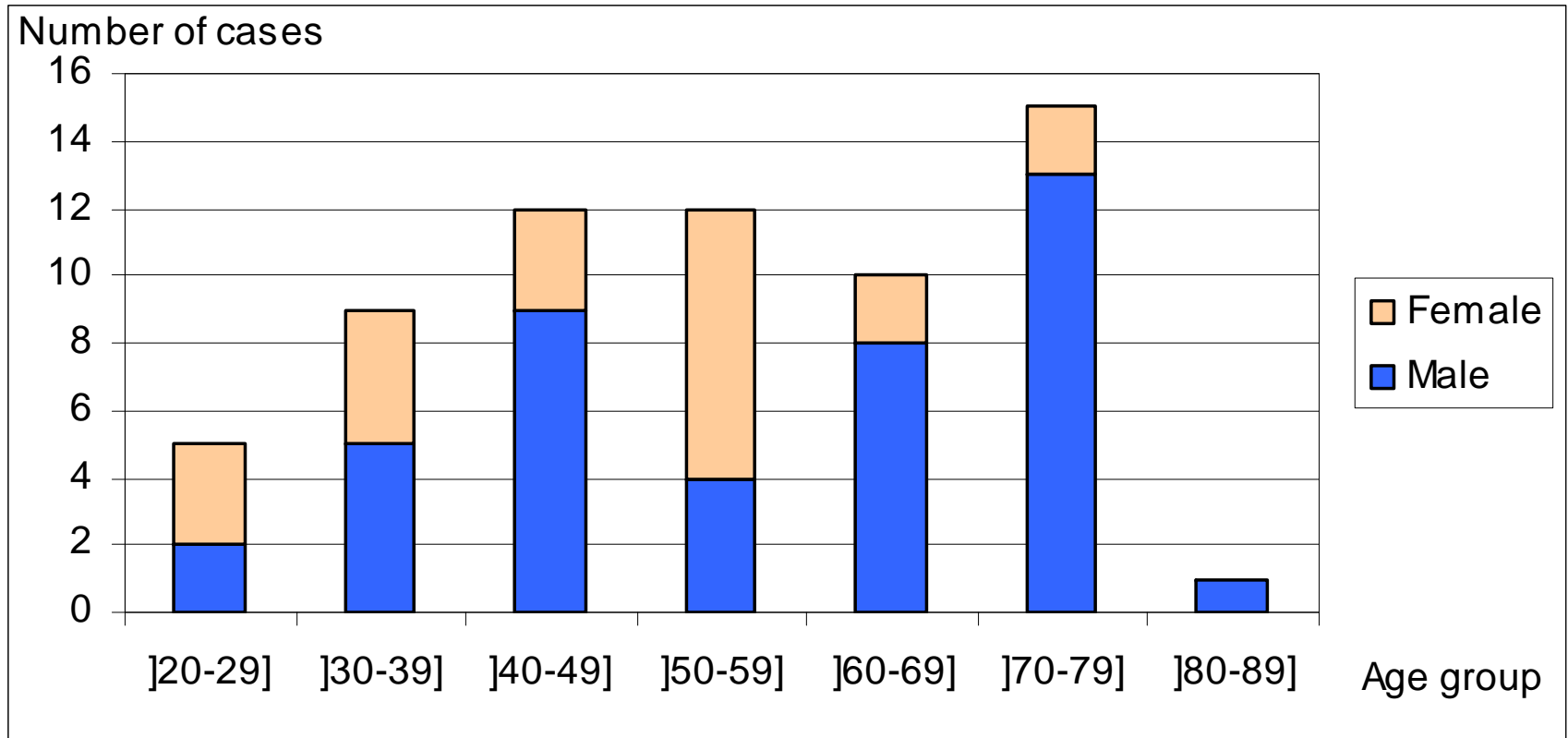
Acute hepatitis E in south West France over a 5-year period



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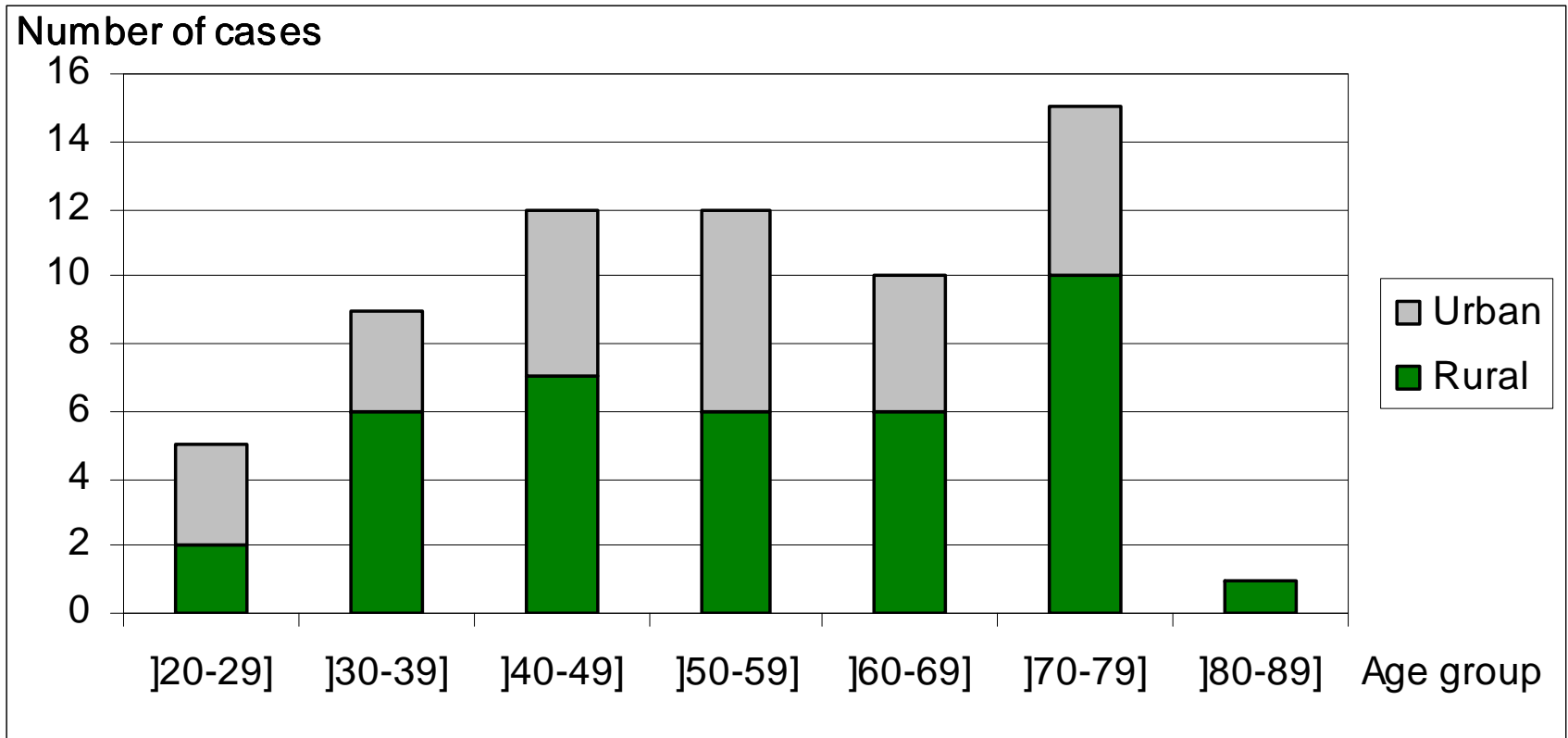
41 men / 21 women

$p=0.06$

57.9 yrs / 47.9 yrs

$p=0.1$

Acute hepatitis E in south West France over a 5-year period



36 rural / 26 urban

$p=0.6$

55 yrs / 53 yrs

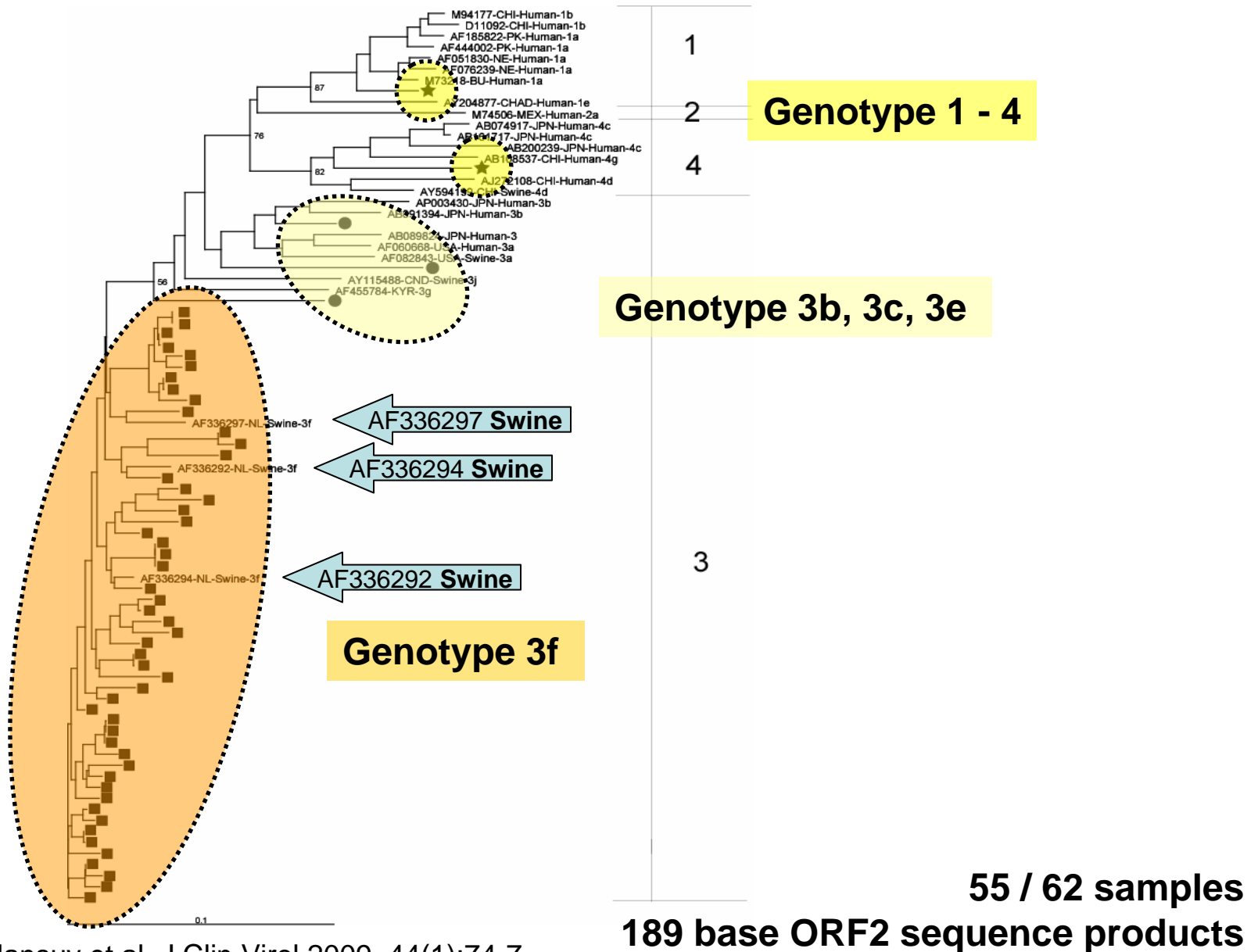
$p=0.3$

Acute hepatitis E in south West France over a 5-year period

Symptoms	frequency (%)
Jaundice	67.7
Asthenia	40.3
Fever	27.4
Arthromyalgia	21
Abdominal pain	11.3
Headache	9.7
Nausea	9.7
Anorexia	8.1
Weight loss	6.5
Diarrhea	4.8
Purpuric rash	3.2
No symptom	3.2

Biological markers	
ALT activities	4 – 150 N
AST activities	1.5 – 151 N
Bilirubinemia	5 – 30 N

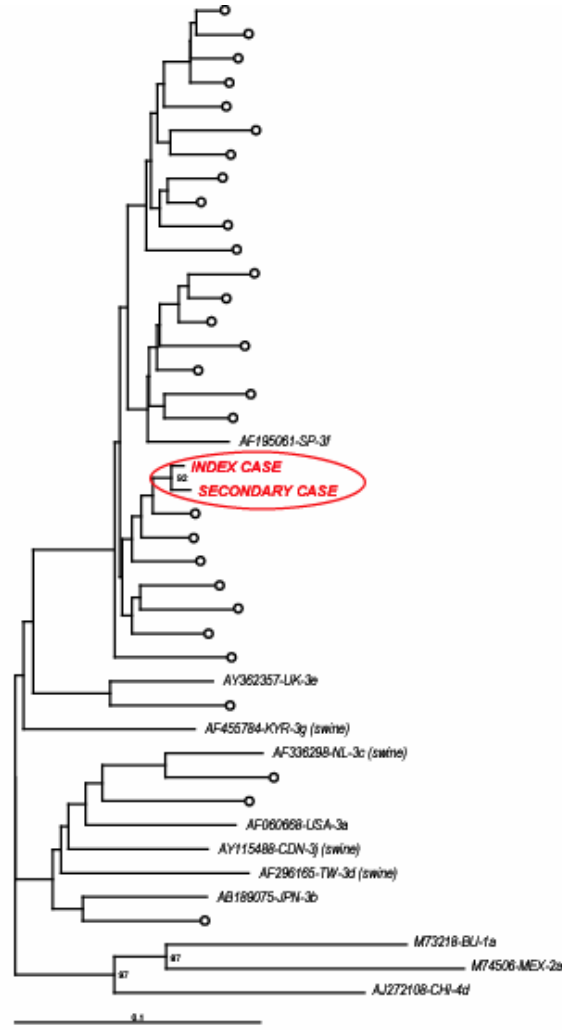
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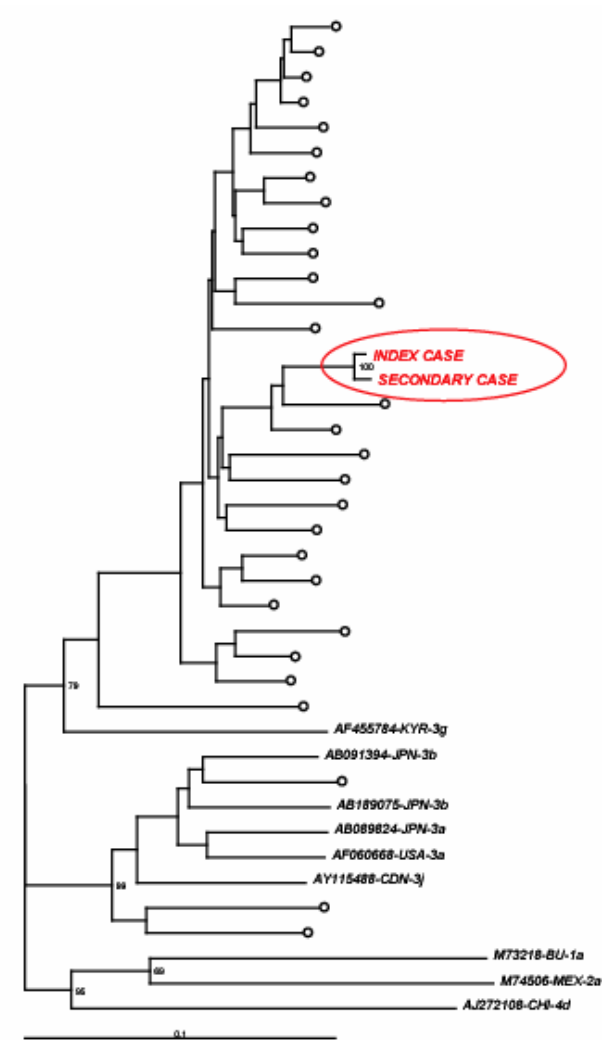
Molecular evidence of patient to patient transmission of hepatitis E virus in a hematology ward



Fragment from hypervariable region within ORF1 (nt 2082 to 2374*)



Fragment from ORF2 region (nt 5993 to 6467*)



Fragment from RNA polymerase region (nt 4232 to 4561*)

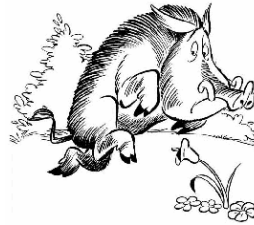
Since 2007

→ 2008 = 17 cases of acute hepatitis (RNA+)

- sex ratio 1.7 (1.95)
- age 61.3 vs 40.1 (57.9 vs 47.9)
- care days 3.2

- genotypes: 3f (9) – 3c (1 hunter)

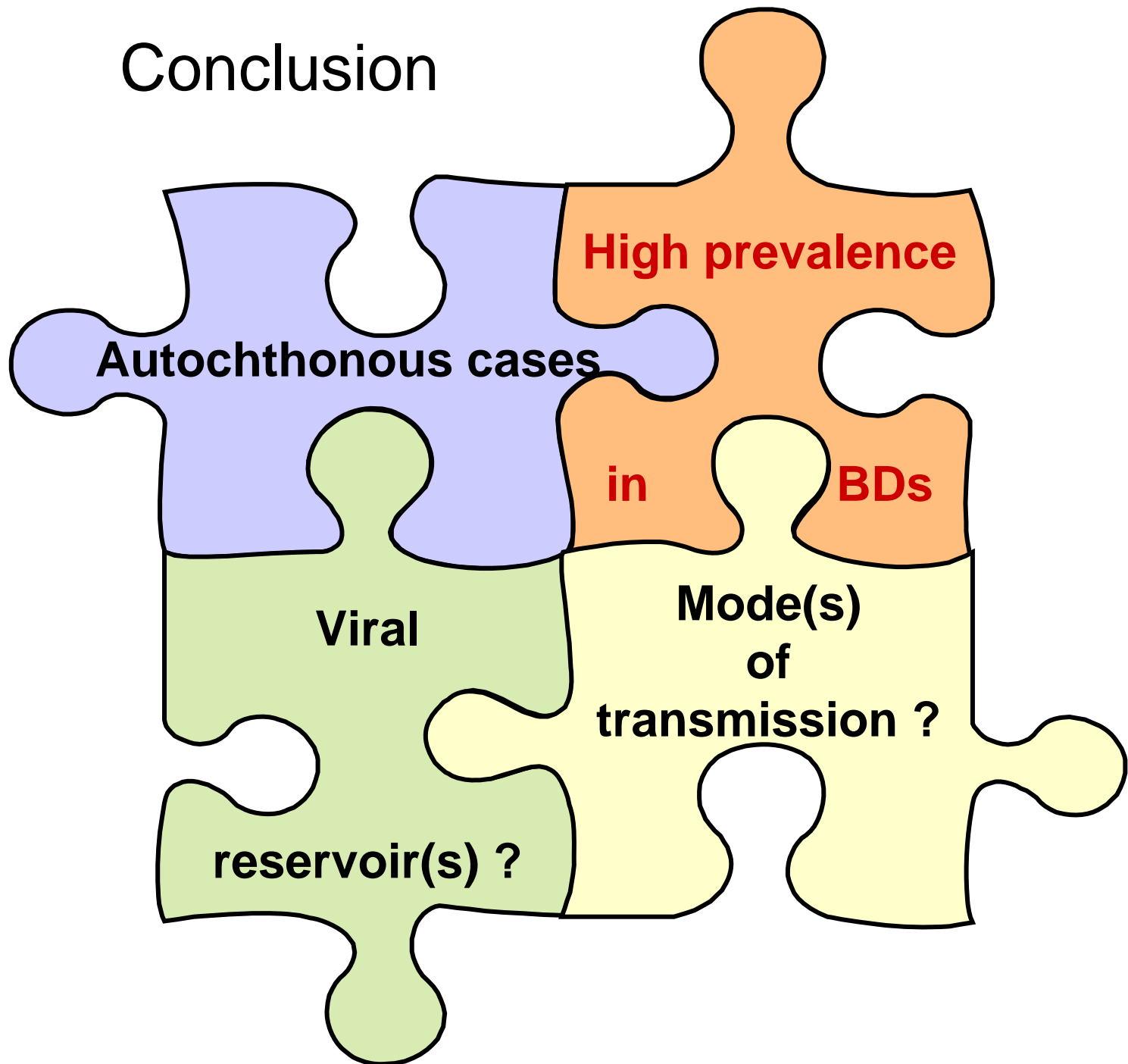
→ Wild boars



→ Swine herds



Conclusion



Acknowledgements

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