

# HEV INFECTION IN UKRAINE: EPIDEMIOLOGICAL ASPECTS

Larisa Moroz<sup>1</sup>, Natalia Zaichko<sup>2</sup>, Olga Vorozhbyt<sup>3</sup>, Kiarina Chichirelo-Konstantynovych<sup>1</sup>, Olga Androsova<sup>1</sup>, Halyna Martynyuk<sup>4</sup>, Tetyana Bevz<sup>1</sup>

<sup>1</sup> – National Pirogov Memorial Medical University, Vinnytsya, Department of Infectious Diseases and Epidemiology, Ukraine; <sup>2</sup> - National Pirogov Memorial Medical University, Vinnytsya, Biochemical Chemistry Department, Ukraine; <sup>3</sup> – Danylo Halytsky Lviv Naional Medical Univerity, Infectious Diseases Department, Ukraine; <sup>4</sup> – Rivne Central Clinical Hospital, Hepatological Department, Ukraine

## Introduction

The sporadic nature of the emergence due to the introduction of endemic areas, the asymptomatic course in 70% of cases, the limited screening of patients with suspected viral hepatitis have led to a lack of reliable statistics about the prevalence of hepatitis E viral (HEV)-infection in Ukraine. .

## Aim

To determine the prevalence of HEV-infection in different regions of Ukraine, depending on gender and age characteristics.

## Materials

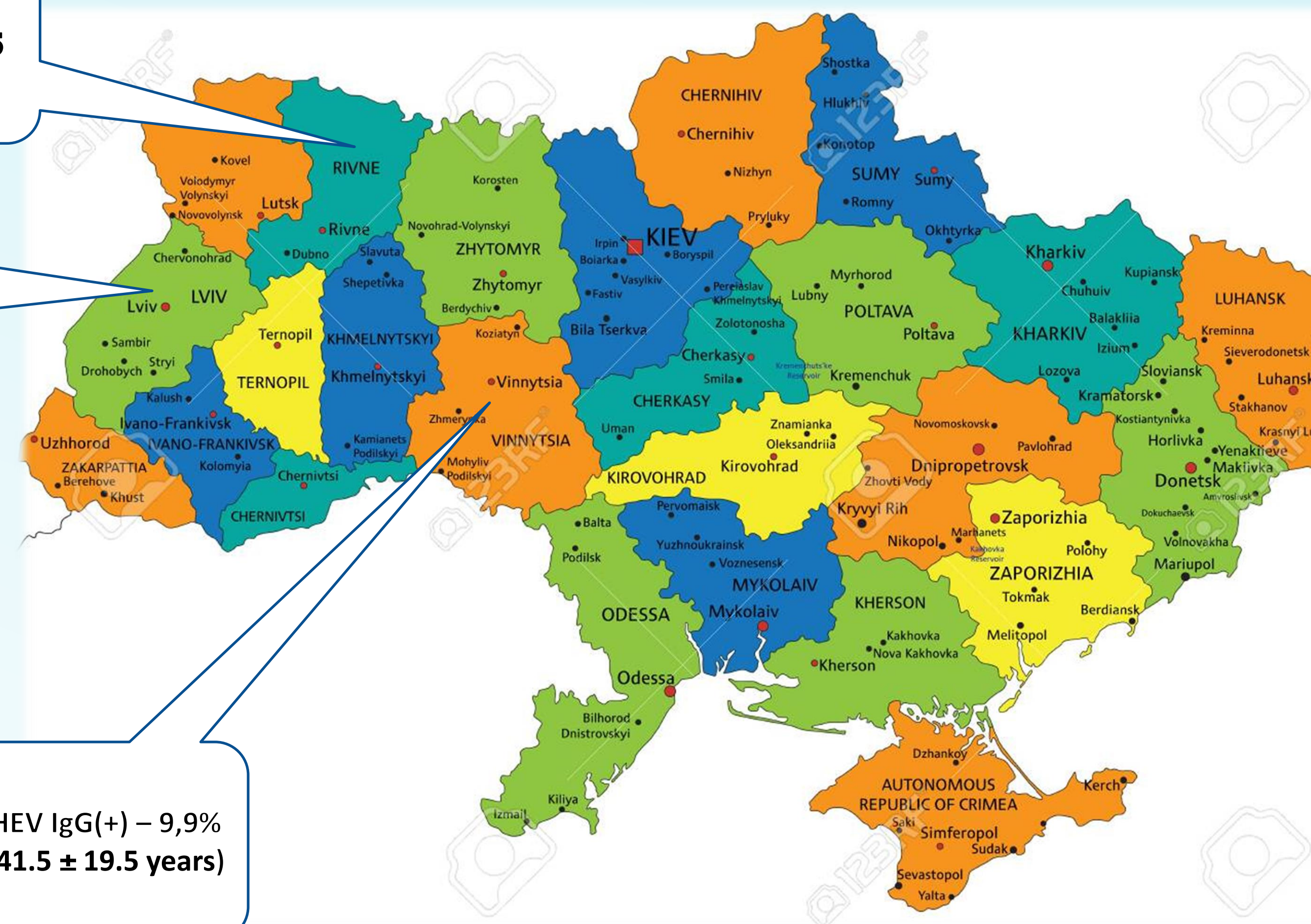
464 blood samples of inhabitants (average age in the group  $36.5 \pm 15.0$  years) of the central ( $n = 91$ ), northwest ( $n = 286$ ), western ( $n = 87$ ) regions were examined for ab-HEV IgG marker by ELISA method in vacutainers with a coagulant on the gel phase. Venous blood collection was carried out early in the morning with the exception of the use of alcohol, smoking, with a limitation of physical activity for 12 hours prior to taking the biomaterial by examined responders. The positive result of ab-HEV IgG was evaluated at a positive-factor R (optical sample density ratio to critical optical density)  $> 1.1$ .

HEV IgG(+) –  
8,04% ( $33.9 \pm 9.5$   
years)

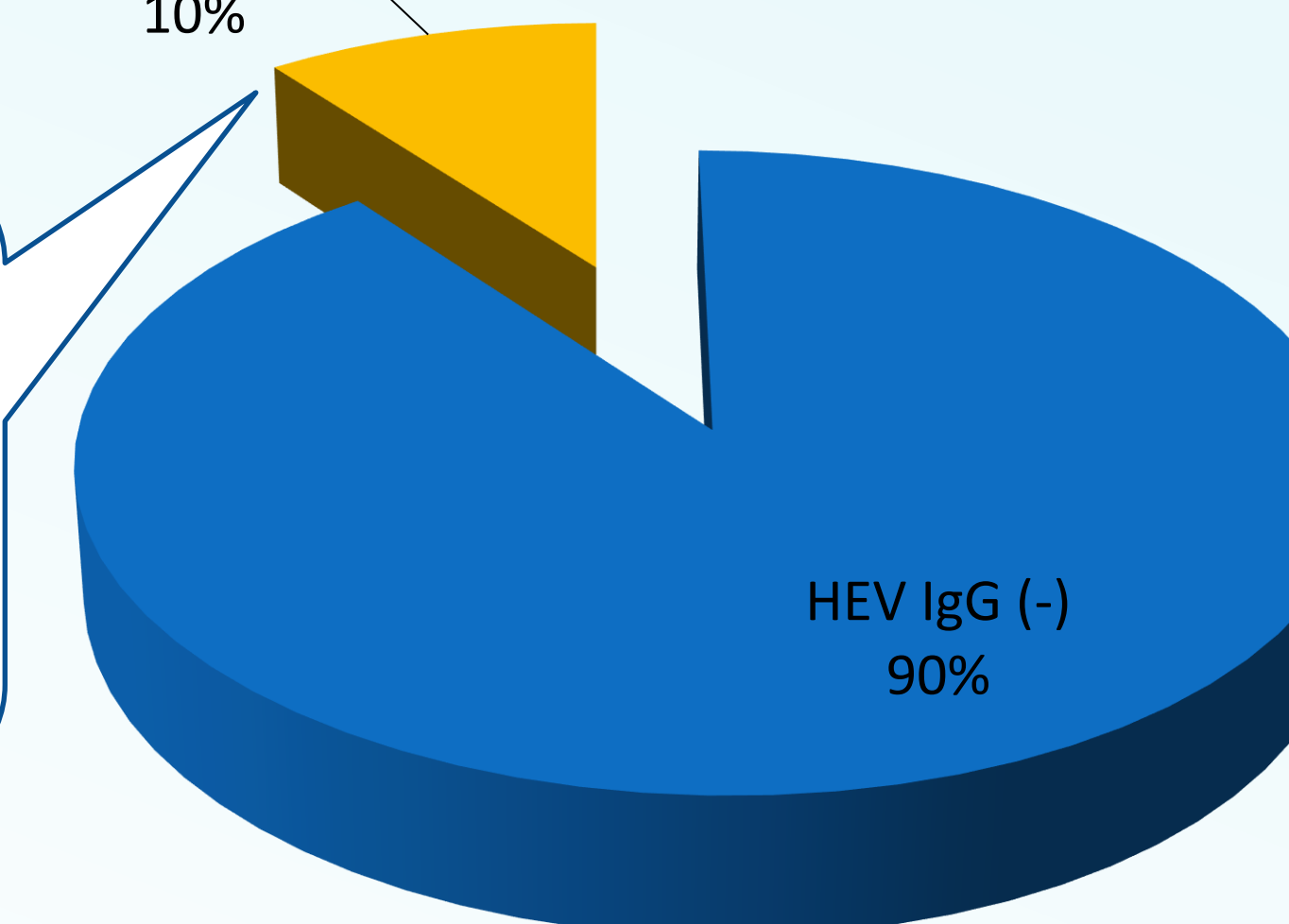
HEV IgG(+) –  
14,94% ( $33.9 \pm 9.5$   
years)

HEV IgG(+) – 9,9%  
( $41.5 \pm 19.5$  years)

Live farm workers –  $n=22$   
Blood donors –  $n=25$   
Individuals in charge of a boarding school for people with central nervous system's disturbances and in the past had been employees of poultry farms –  $n=3$



HEV IgG (+)  
10%



## Results

Among 464 examined responders there were 100 (21.55%) livestock farm workers, 364 (78.45%) blood donors. HEV-infectivity in the population was 10.12% (47 people), among them 25 (6.87%) ab-HEV IgG (+) ones were in the donor group, 22 (22%) were in livestock farm workers group. Ten (21.27%) ab-HEV IgG (+) donors belonged to the age group of 40-49 years, which was statistically higher than in the younger age groups ( $p < 0.05$ ). The prevalence of HEV-infection among men was 6.25% versus 3.88% among women ( $p = 0.03$ ). HEV-infection in the central region was 9.9% (9 donors) in the middle age of  $41.5 \pm 19.5$  years. HEV-infection in the western region was 14.94% (11 donors, 4 livestock farm workers), with an average age of  $33.9 \pm 9.5$  years. HEV-infection in the north-western region was 8.04% (5 donors, 18 livestock farm workers), with an average age of  $33.9 \pm 9.5$  years. Three (6.38%) ab-HEV IgG (+) individuals were in charge of a boarding school for people with central nervous system's disturbances and in the past had been employees of poultry farms.

## Conclusion

In Ukraine, 10.12% of the population are asymptomatic carriers of HEV-infection, the prevalence of which is increasing with age and most common to rural population at the age of 40-49 years. 46.81% of HEV-infected are livestock farm workers.