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Letter to the Editor

Low seroprevalence of hepatitis E virus infection in pregnant women in Yunnan, China[☆]

Dear Editor,

Hepatitis E virus (HEV) is an important global public health concern, with particularly high mortality in pregnant women.^{1,2} HEV is highly endemic in China,³ but epidemiological data for HEV among pregnant women are lacking. In the present study, a serosurvey of HEV among pregnant women in Yunnan, China was conducted. Results revealed a low prevalence of HEV infection in pregnant women.

Serum samples from 293 pregnant women (asymptomatic, apparently healthy), 20–41 years old (mean \pm S.D. = 27.9 \pm 3.9) at 7–37 weeks of pregnancy, were collected. HEV RNA was detected by reverse transcription-nested PCR (RT-nPCR) according to the protocol of previous study,⁴ but we failed to detect RNA in some subjects.

Thirty serum samples (30/293, 10.24%) were positive for HEV IgG by enzyme-link immunosorbent assay (ELISA). The seropositivity of HEV in Yunnan was lower than that in the neighboring provinces, general population of Guizhou (35.7%)⁵ or people who keep pigs in Southern China (43%).³ Pregnant women aged 26–30 years had the highest positive rate (13.76%), but there was no correlation

between increasing age and HEV seropositivity ($p=0.169$). The seroprevalence in their third trimester was the highest (11.54%, Table 1), although not statistically significant ($p=0.803$). In these HEV IgG positive pregnant women, 63.33% were in their second trimester of pregnancy. Four women (4/293, 1.37%) were positive to HEV IgM, all older than 30 years and in their second or third trimester of pregnancy (Table 1). IgM antibody emerged during the acute stage of HEV infection, which is very dangerous considering the extremely high mortality rate during their second or third trimester of pregnancy.^{2,6} Interesting, all the pregnant women were asymptomatic with normal liver enzymes.

Although the pregnant women were asymptomatic, it indicated that the HEV circulates at low but significant levels. All patients were living in urban settings, but poor hygienic measures and public health conditions could not be excluded in Yunnan, where raw pork is consumed frequently during Spring Festival. Pregnant women in endemic areas in Yunnan need to be screened for HEV infection during their second or third trimester of pregnancy to decrease the high mortality.

Table 1 – Prevalence of anti-HEV IgG and IgM antibodies in pregnant women in Kunming city.

	Anti-HEV IgG antibody						Anti-HEV IgM antibody					
	Trimester of pregnancy			Age (years)			Trimester of pregnancy			Age (years)		
	First	Second	Third	20–25	26–30	>30	First	Second	Third	20–25	26–30	>30
Women (n)	30	185	78	110	109	74	80	78	135	76	116	101
Positive (n)	2	19	9	13	15	2	0	2	2	0	0	4
Positive rate (%)	6.67	10.27	11.54	11.81	13.76	2.70	0	2.56	1.48	0	0	3.96

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Conflicts of interest

The authors declare no conflicts of interest.

REFERENCES

1. Mushahwar IK. Hepatitis E virus: molecular virology, clinical features, diagnosis, transmission, epidemiology, and prevention. *J Med Virol.* 2008;80:646-58.
2. Aggarwal R. Clinical presentation of hepatitis E. *Virus Res.* 2011;161:15-22.
3. Li RC, Ge SX, Li YP, et al. Seroprevalence of hepatitis E virus infection, rural southern People's Republic of China. *Emerg Infect Dis.* 2006;12:1682-8.
4. Huang FF, Haqshenas G, Guenette DK, et al. Detection by reverse transcription-PCR and genetic characterization of field isolates of swine hepatitis E virus from pigs in different geographic regions of the United States. *J Clin Microbiol.* 2002;40:1326-32.
5. Dong C, Dai X, Liang J, Dong M, Meng J. Seroprevalence of hepatitis E virus varies considerably among Chinese Provinces. *Hepat Mon.* 2012;12:386-90.
6. Kumar RM, Uduman S, Rana S, Kochiyil JK, Usmani A, Thomas L. Sero-prevalence and mother-to-infant transmission of hepatitis E virus among pregnant women in the United Arab Emirates. *Eur J Obstet Gynecol Reprod Biol.* 2001;100:9-15.

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