

Research Note

**A Survey of Meat Inspectors in Hyogo Prefecture, Japan, for the Presence of Anti-*Toxoplasma gondii* Antibodies by Enzyme-Linked Immunosorbent Assay**

ELJI KONISHI<sup>1)</sup>, JUNKO TAKAHASHI<sup>1)</sup>, RYOHEI SATO<sup>2)</sup>, TOSHIHARU TAKAO<sup>2)</sup>  
AND SHOSHIN ANADA<sup>2)</sup>

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A number of reports on epidemiology of *Toxoplasma gondii* have indicated the higher seropositivity in persons who have frequent contacts with animals or meat (Remington and Desmonts, 1982). Kobayashi (1977) reviewed the prevalence of *Toxoplasma* infections in Japan, where 59 to 78% of the abattoir workers had the antibody while 21.7% of age-matched general population were seropositive. Swine and cattle, the main animals slaughtered in abattoirs, were seropositive at 24% and 8%, respectively, with the demonstration of *Toxoplasma* in the muscle of 5 to 20% of swine. He also mentioned that somewhat more frequent occurrence of ocular toxoplasmosis in clinically infected butchers or meat inspectors led some prefectural authorities to recognize toxoplasmosis as an occupational disease. The present small survey among meat inspectors was designed in a series of our studies to reveal the present status of the prevalence of *Toxoplasma* infections in Hyogo Prefecture (Takahashi *et al.*, 1985).

Eleven serum samples were collected from meat inspectors of the Meat Inspection Office of Kobe City. Six, 9 and 8 sera were kindly supplied from the meat inspection offices of

Hanshin, Higashiharima and Nishiharima, respectively. Those 34 inspectors were male veterinarians at ages from 24 to 59 years with a mean age of 39.1. These sera were examined for the presence of antibody to *Toxoplasma* by an enzyme-linked immunosorbent assay (ELISA) system as previously described (Konishi and Takahashi, 1983).

As seropositivities were not significantly different among 4 abattoirs, combined data are shown in Table 1. The positive rate varied depending on age, and the overall prevalence rate was 23.5% which was similar to the rate among male patients in our hospital (22.3%: Takahashi *et al.*, 1985) and also of male farmers in Miki City (16.4%: Konishi and Takahashi, in press). Although 50% positivity in an age group of 50–59 years was far higher than 26.7% in the patient population and 28.2% in the farming population, significance of the difference was not evaluated by the Chi square test with the Yates correction factor ( $P > 0.05$ ). Distribution of antibody levels ranging from 0.00 to 1.19 in ELISA value was also consistent with those of the previous studies.

No difference observed in antibody prevalence between meat inspectors and other populations is partly attributed to those inspectors who know how to prevent themselves from the infection and who do not have actual contacts with meat so frequently as butchers. Moreover,

<sup>1)</sup>Department of Medical Zoology, Kobe University School of Medicine, Kobe 650, Japan.

<sup>2)</sup>Meat Inspection Office of Kobe City, Kobe 653, Japan.

Table 1 Prevalence of *Toxoplasma* antibody among meat inspectors of abattoirs and other human populations in Hyogo Prefecture

Age (years)	Prevalence rate (%)				
	Meat inspectors		Male patients*		Male farmers†
24–29	0.0	(0/4)‡	8.1	( 3/37)	1.6 ( 1/61)
30–39	22.2	(4/18)	19.7	(12/61)	12.7 (19/150)
40–49	16.7	(1/6)	26.0	(13/50)	21.7 (39/180)
50–59	50.0	(3/6)	26.7	(24/90)	28.2 (75/266)
Total	23.5	(8/34)	22.3	§	16.4 §

\* Data from Takahashi *et al.* (1985).

† Data from Konihi and Takahashi (in press).

‡ No. positive/no. tested.

§ Prevalence adjusted with a mean age of 39.1 years in meat inspectors.

it must be another possible cause that the present prevalence rates in swine and cattle were extremely low; 0.17% (1 of 599) and 1.0% (6 of 600, unpublished observations), respectively. The dramatic decrease of the prevalence among such farm animals is probably due to the improvement of sanitary environments in breeding sites, as was pointed out in a survey in the Netherlands (Knapen *et al.*, 1982). Further studies on a survey of butchers will be needed to elucidate those problems on *Toxoplasma* infections.

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## 短 報

## 兵庫県の食肉検査員を対象とした酵素抗体法によるトキソプラズマ抗体保有調査

小西英二<sup>1)</sup> 高橋純子<sup>1)</sup> 佐藤良平<sup>2)</sup> 高尾稔治<sup>2)</sup> 穴田勝進<sup>2)</sup>( <sup>1)</sup> 神戸大学医学部医動物学教室, <sup>2)</sup> 神戸食肉衛生検査所)

現在の兵庫県におけるトキソプラズマ抗体保有状況を調査する一環として、4地区の食肉衛生検査所の食肉検査員34名を対象として酵素抗体法による抗体測定を行った。抗体陽性率は全体で23.5%であり

検査所間に有意の差は認められなかった。生肉との接触機会に富むにも拘らず、これは年齢補正した他の対照集団の陽性率とほぼ同等であった。