

TOXOPLASMOSIS IN PIGS IN BANGLADESH

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Summary

Blood serum was collected from 200 apparently healthy pigs of average market size and tested for toxoplasmosis. Twenty percent of samples were seropositive with antibody titres ranging from 1:256 to 1:4096. The seroprevalence of toxoplasmosis in pigs is reported first time in Bangladesh.

(Key Words: Seroprevalence, Toxoplasmosis, Pigs)

Introduction

Toxoplasmosis, a zoonotic disease, caused by the protozoa *Toxoplasma gondii*, is of considerable economic importance (Dubey, 1986b). Worldwide seroprevalence reports of natural *T. gondii* infection in pigs averaged 20.7% (Dubey, 1986a; Samad and Begum, 1990). As high as 24 to 30% of pigs in the United States and the Far East have been reported positive for toxoplasmosis (Jacobs et al., 1960; Ryu, 1973; Takada, 1973). Infection was reported to be more common in pigs fed uncooked garbage (Weinman and Chandler, 1956). Most importantly humans can be infected by ingestion of the meat of infected animals (Hortwitz and Hughes, 1976; Newman, 1984).

The seroprevalence of *T. gondii* infection in Bangladeshi cattle was reported by Samad et al. (1982). As no further work has been carried out in animals or humans in Bangladesh, this study sought to determine the incidence of toxoplasmosis in a sample of pigs in Bangladesh.

Materials and Methods

The work was done between September 1982 and August 1985. Blood samples were collected from a total of 200 apparently healthy pigs of average market age (about 8 months) from all

over the Bangladesh. The samples were taken from slaughtered pigs using filter papers strips (Nobuto's blood sampling paper). Blood oozing from the jugular vein after sticking was absorbed on the filter paper strip, labelled, air dried, and stored at room temperature for future analysis.

The dried blood was eluted from the filter paper with 0.6 ml of phosphate buffered saline. Four serial dilutions were prepared from the elute starting from 1:64, then 1:256, 1:1024 and 1:4096. An haemagglutination test (HA) was conducted according to the method of Katsube et al. (1962) and Nobuto et al. (1960). The antigen used was freeze-dried, fixed toxoplasma from sensitized erythrocytes (Pyakural, personal communication, 1982).

Results and Discussion

Of the 200 sera tested, 40 (20%) were seropositive for toxoplasmosis, 24 (12%) doubtful and 136 (68%) negative (table 1).

Results of this study reveal overwhelming evidence of toxoplasma infection among local pigs. Despite the limited number of pigs tested, the prevalence of seropositive reactor is as high (20%) as world-wide reports, although a little lower than reported by Jacobs et al. (1960) in the USA, Ryu (1973) in Taiwan, and Takada (1973) in Japan.

The fact that these toxoplasmosis seropositive pigs had been passed at postmortem inspection as food for human consumption is rather discouraging since human toxoplasma infection may result from ingestion of tissue cysts in infected

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TABLE 1. SEROPREVALENCE OF TOXOPLASMOSES IN PIGS IN BANGLADESH BY HAEMAGGLUTINATION TEST

Total number	No. of negative (%)	No. of doubtful (%)	No. of positive (%)	Titre in positive cases
200	136 (68%)	24 (12%)	40 (20%)	
			20 (50%)	1:256
			16 (40%)	1:1024
			4 (10%)	1:4096

pork (Weinman and Chandler, 1956; Dubey et al., 1984; Dubey, 1988). In Bangladesh small heads of pigs and larger piggeries are mostly dependent upon garbage feeding "because" pigs are reared mainly in and surrounding big cities where there is a scarcity of pig's feed. Pigs even graze on human excreta and a wide range of rubbish. Even pigs reared in rural areas have similar feeding habits. Also cooking methods may not be adequate and so there is a possibility of human infection from.

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