THESIS TITLE COMPARATIVE STUDIES ON PARASITOLOGICAL AND SEROLOGICAL DIAGNOSIS OF STRONGYLOIDIASIS IN PRIMARY SCHOOL CHILDREN

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ABSTRACT

Strongyloidiasis is an important intestinal nematode infection which deserves special attention, since fatal complications may occur in infected individuals under immunosuppressed conditions. Parasitological diagnosis of *Strongyloides* often faces difficulties, especially in individuals with low intensity of infections, thus the genuine infection is frequently not diagnosed. To minimize the risk of serious complications from the infection, an accurate and reliable diagnosis is obviously needed for proper drug treatment.

In an attempt to evaluate the efficacy of currently available diagnostic methods, both parasitological and serological diagnosis of strongyloidiasis were compared in children attending a primary school in Nampong District, Khon Kaen Province, at two time points; October 1994 and January 1995. The rates of parasitic infections in the first (n=195) and second (n=187) surveys were 40.15 % and 33.16%,respectively. *Strongyloides stercoralis* was the leading parasite infection with the prevalence of 23.08 and 17.11%.

Strongyloidiasis was more common in males than females and positively correlated with ages of the pupils ($p < 0.05$).

From both surveys (n=114), the serodiagnosis using the enzyme-linked immunosorbent assay (ELISA), detecting parasite-specific IgG gave the positive rates of 28.07% and 28.95%, and these rates were significantly greater than coprodiagnosis using agar plate culture technique (APCT) (17.32% and 15.74%) and modified formalin-ethyl acetate concentration technique (MFECT) (6.30% and 7.87%) ($p < 0.01$). With reference to parasitological diagnosis, the efficacy of the ELISA calculated from both time points gave the sensitivity of 80.00 - 100.00%, the specificity of 82.88 - 87.68 % and the false positive rate of 12.32 - 17.11%. Concurrent parasitic infection, i.e Hookworm, *Opisthorchis viverrini*, minute intestinal fluke and *Giardia lamblia*, did not seem to interfere with the ELISA.

S.stercoralis specific IgG1 was the IgG subclass that showed similarity with the total IgG. Although the level of IgG measured by the ELISA did not correlated with the intensity of *S. stercoralis*, the high sensitivity and reliability of the ELISA test indicated that it may serve as a promising tool not only for screening of strongyloidiasis but also for assesement of chemotherapy.