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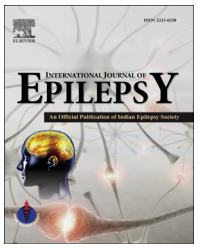

Original Article

Knowledge about, attitudes towards, practices regarding *Taenia solium* cysticercosis among people attending an epilepsy clinic in India

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ABSTRACT

Background: Taenia solium cysticercosis is one of the commonest, but potentially eradicable, causes of seizures in India. Eradication and appropriate control should incorporate educational interventions regarding the infestation and this requires an assessment of knowledge about, attitudes towards and practices (KAP) regarding the disorder.

Aim: We undertook a KAP survey regarding ***T. solium*** cysticercosis in a hospital-based population with seizures in order to determine the existing knowledge and attitudes regarding the disorder and practices regarding its prevention and treatment.

Methods: One hundred and eighty two people attending an epilepsy clinic were administered a validated 16-item KAP questionnaire, the responses of which were assessed against responses obtained from experienced neurologists.

Results: Of the 182 respondents, 22 (12%) believed that a worm was responsible for their seizures, while 94 (52%) were aware of the link between worms and epilepsy in general. Despite this 150 (82%) were unsure about the name and nature of the worm. In fact 89 (49%) believed that the worm was acquired by eating cabbages rather than by consuming pork and by poor personal hygiene. Only 14 (8%) had ever consumed pork. Of note, 56 (31%) admitted visiting unqualified quacks who sucked out the worm through the nose.

Conclusions: In conclusion although the population was highly sensitized to the association between worms and epilepsy they did not appreciate its mode of transmission. Moreover the practice of visiting quacks to remove worms was quite prevalent.

1. Introduction

The parasitic infestation of human brain, neurocysticercosis (NCC), caused by the larval stage of the pork tapeworm, *Taenia solium*, is endemic in most parts of India and much of South and Central America, and parts of sub-Saharan Africa.[1] Only recently, few community-based studies have documented transmission of the parasite and the high prevalence of its infestation in selected locations within India.[2–4]

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The International Task Force for Disease Eradication has recognized ***T. solium*** cysticercosis as one of the six disorders that are potentially eradicable.[5] The control or eradication of any infectious disorder requires an assessment not only of the prevalence of infection in the community but also of knowledge about, attitudes towards and practices regarding (KAP) the disorder among members of the community. Control can be effectively implemented when the attitude of the community is scientifically appropriate and community members are supportive of the measures taken towards control or eradication. Hence, we undertook a knowledge, attitudes, and practices (KAP) survey that specifically addressed issues related to *T. solium* cysticercosis among people with epilepsy attending a specialized epilepsy clinic in a hospital in Northwest India in order to determine aspects of prevention that need to be stressed in health education campaigns.

2. Material and methods

2.1. Study sample

The study sample comprised 182 consecutive people with epilepsy attending the adult epilepsy clinic of Dayanand Medical College, Ludhiana, India between 1st January 2007 and 30th June 2007. Informed consent was obtained from all study subjects. The project was approved by the Institutional Ethics Committee.

2.2. Design and administration of questionnaire

Questions and their answers were formulated by two neurologists with experience in the care of patients with NCC. They provided 10 questions each, of which identical items were omitted, leaving behind 16 questions. The questions were oriented towards the awareness of the nature of epilepsy in the subjects, awareness about NCC and the mode of acquisition, transmission and prevention of cysticercosis, available treatment options, and risk practices and behaviors that might facilitate transmission of the parasite. All questions were provided with multiple response answers of which only one response was deemed to be correct. The questions were then administered to another neurologist in order to determine appropriate responses.

The questionnaire was administered by a student investigator in the study team in strict confidentiality in a private room away from the epilepsy clinic in either English language or Punjabi, which is the vernacular language in the state of Punjab. Responses were also recorded by the student investigator.

3. Results

3.1. Demographic characteristics of sample population

The KAP questionnaire was administered to 182 patients [125 (69%) males] [mean (±SD) age: 24 (±14 years)]. The cohort included 44 (24%) students, although, most had completed their studies with 158 (87%) being matriculate or undermatriculate (Table 1). Four of the respondents were medics or paramedics.

3.2. Epilepsy characteristics

Of the 182 respondents, 35 (19%) presented with new-onset seizures, and 147 (81%) had chronic epilepsy. Imaging (either CT or MRI) was undertaken in all patients and 31 (17%) had evidence of NCC on their imaging studies.

3.3. Knowledge about relationship between helminths and epilepsy and transmission of cysticercosis

Regardless of presumed etiology of their epilepsy, 22 (12.1%) respondents believed that a worm was responsible for their epilepsy (Table 2). However, 88 (48%) were unsure regarding the cause of their epilepsy and considered hereditary factors (n = 10; 6%), accidents (n = 25; 14%) and stress (n = 37; 20%) to be causally linked to their infirmity. Ninety four (52%) respondents were aware that worms might be responsible for epilepsy. The majority (150; 82%) were however unsure about the name or nature of the worm (i.e. tapeworm). Eighty nine (49%) believed that the worm was found in cabbages and therefore could be acquired by eating raw cabbages. Only 14 respondents (8%) held the view that the tapeworm could be acquired by consuming pork and 28 respondents (15%) believed that infestation was associated with poor personal hygiene. According to 57 (31.2%) respondents, the infestation could be diagnosed using a computerised tomographic scan (Tables 3, 4).

3.4. Attitudes towards and knowledge about prevention of cysticercosis (Table 5)

In all, 122 (67%) respondents were willing to participate in a community program for screening or controlling *T. solium* infestation. In the views of 68 respondents (37%), good

Table 1 – Demographic characteristics of the study sample.

Demographic Characteristics	Responses
Gender	
Male	125 (69%)
Female	57 (31%)
Age (in years) (Mean ± SD)	24 ± 14
Educational qualification	
Under-matriculate	73 (40%)
Matriculate	85 (47%)
Graduate	17 (9%)
Post graduate	3 (2%)
Higher	3 (2%)
Profession	
Medical/paramedical	4 (2%)
Teacher	1 (1%)
Business	31 (17%)
Student	44 (24%)
Professional	6 (3%)
Farmer	15 (8%)
House wife	28 (15%)
Others	53 (29%)