

FASCIOLIASIS IN VIETNAM

Tran Vinh Hien¹, Tran Thi Kim Dung², Nguyen Huu Chi¹,
Phan Huu Danh¹ and Pham Thi Hanh¹

¹Center for Tropical Diseases, Ho Chi Minh City, Vietnam;

²Department of Parasitology, Faculty of Medicine, Ho Chi Minh City, Vietnam

Abstract. A confirmed diagnosis of human fascioliasis was rare in Vietnam until 1978 when two cases were reported in humans. Since 1997, we have confirmed 500 cases of human fascioliasis. The majority of cases come from the central provinces of Vietnam: Da Nang, Quang Ngai, Binh Dinh, Phu Yen and Khanh Hoa. Patients were treated in hospitals in Ho Chi Minh City. All had high peripheral blood eosinophilic counts (16–70%) and positive serology with *Fasciola gigantica* antigen with positive titers of 1/1,600 to 1/12,800. We are unsure whether this represents an endemic pattern of disease or whether improved specific laboratory tools now facilitate better diagnosis. It is also possible that with changes in environmental factors and in the number and breeds of herbivorous domestic animals, *Fasciola* is increasing in frequency and easily contaminates the food.

INTRODUCTION

During the last 100 years in Vietnam, fascioliasis in human has been rarely reported. Only 2 cases were reported in 1978. Since 1991 the number of reported cases have increased year by year. From 1997 until now, this disease has exploded with more than 500 cases.

MATERIALS AND METHODS

We studied 500 cases that were diagnosed by ELISA in three years: from 1997 until the beginning of 2000. The patients came from the central to the south of Vietnam. Some, after having the positive serodiagnosis, returned to their provinces. The rest were treated in hospitals in Ho Chi Minh City. With these cases, we have studied the distribution, clinical manifestations and laboratory findings of fascioliasis.

RESULTS

Distribution

The geographical distribution of 393 patients in order of frequency was as follows: Khanh Hoa (97), Binh Dinh (87), Quang Ngai (77), Phu Yen (54), Da Nang (33), Lam Dong (25), Dac Lac (10) and other southern provinces (10).

Sex and age

Females accounted for 2/3 of the patients. The majority of patients (85%) were 21-50 years old.

Reasons for hospitalization

Irregular fever was the major reason for hospitalization of 230 (57.0%) out of 404 patients.

Other reasons for being admitted to the hospital were: right upper quadrant pain (207/404 cases or 51.2%), abdominal pain (153/404 cases or 37.9%), lack of appetite; malabsorption (98/404 cases or 24.2%), vomiting (46/404 cases or 11.4%) and fatigue (26/404 cases or 6.4%).

The duration of illness before patients were hospitalized ranged from within one month (152/370 cases, 49%) to over 5 months (8/307 cases, 2.6%) (Fig 1).

Laboratory findings

Prior to treatment, percentages of eosinophilia were studied in 373 patients. They were divided into 6 classes and the percentage of patients in each class was summarized in Fig 2.

Serodiagnosis

Serodiagnosis of 500 cases was performed using ELISA technique the results of which were summarized in Fig 3. The dilution at 1/800 showed cross reaction with other parasitic infections.

Ultrasound examination

For ultrasound method, 354/364 (97.2%) patients have abnormal liver findings, particularly in the structure of the right lobe (67.8%).

Stool examination

Direct examination of the stool samples for *Fasciola* eggs was positive in only 14/285 cases.

Treatment and following-up findings

The patients were treated with dehydro-emetine. One hundred and eighty-six patients were followed-up. Among them, 43 patients tolerated two

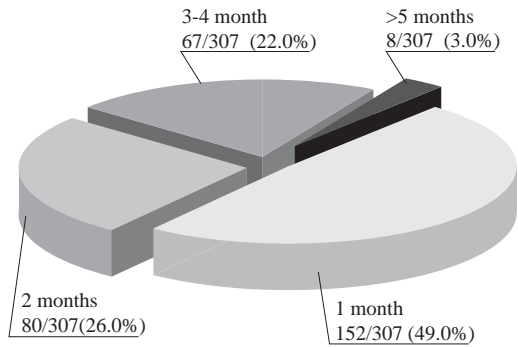


Fig 1- Duration of illness before hospitalization.

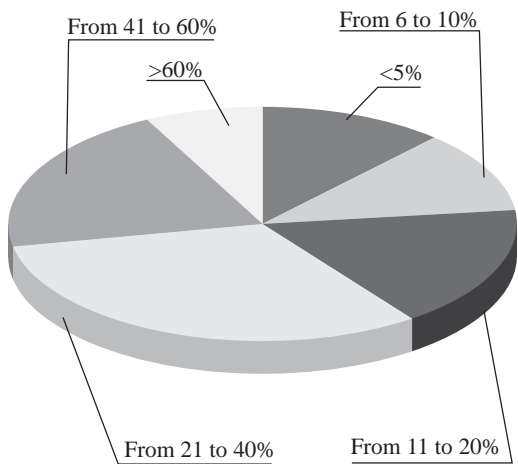


Fig 2- Percent of patients having eosinophil counts in difference classes before treatment.

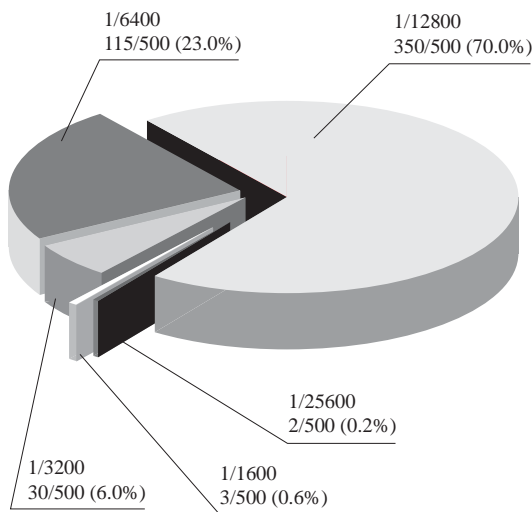


Fig 3- The positive serodiagnostic results using ELISA technic.

administrations of emetine and 3 patients received three doses. After treatment, laboratory tests were repeated at intervals: 10 days, 3, 6, 9 and 12 months. It was found that the percentage of patients in whom eosinophilia returned to under 5% increased with time after treatment (Fig 4).

ELISA titer fell below 1/1600 at 9 months after treatment in 1/24 patients and 1/12 patients at 12 months.

By ultrasound image, the abnormal liver features gradually returned to normal and percentages of patients with normal liver at time of examination were demonstrated in Fig 5.

DISCUSSION

We concluded that the disease existed in Vietnam for many years but it has increased in recent years.

This disease was found in herbivorous animals in Cao Bang, 100 years ago, then in Hanoi, Hue, Nha Trang by Trinh Van Thinh *et al* (1995).

Vietnamese have always enjoyed eating raw vegetables, such as *Herpestis monniera* (bitter vegetable), and *Enhydra fluctuans*. Why this disease has not been reported until recently? Has the diagnosis is much improved now? or was the type of *Fasciola* in Vietnam previously unable to develop in human body? Was it possible that the type that infects humans reached Vietnam through herbivorous animals imported to Vietnam?

With our patients, the disease occurred mainly in the Central of Vietnam and in the Midland provinces. In the Mekong Delta provinces with much water from the rivers, perhaps the appropriate intermediate hosts for this kind of parasite is not present.

Almost all of the patients had classic symptoms. We have not noted other manifestations such as myocarditis, neurological dysfunction or nephrotic syndrome as reported by other authors (Ayadi *et al*, 1997). We had two cases in which the parasite was in abnormal sites, one under the abdominal skin and the other in the wall of large intestine.

We found that the main reason for hospitalization of the patients was abdominal pain, especially of right upper quadrant. The onset of symptoms ranged from 1 to 3 months. The percentage of eosinophilia was high, 16 - 70%. The titer of the serodiagnosis by ELISA technic was high: 1/12,800 in 70% patients. Most patients had an abnormal structure of the liver, especially of the right lobe. This is consistent with the histopathological description of Coudert (1973). We

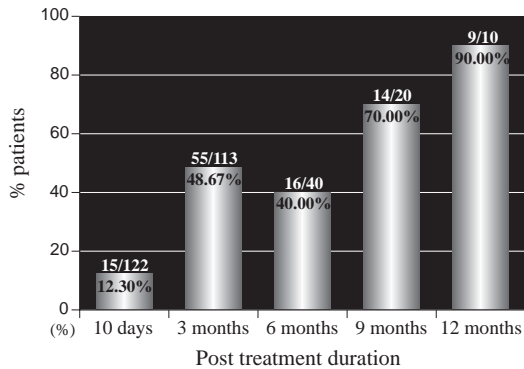


Fig 4- Percentage of patients who received the treatment and eosinophil counts returned to below 5% level during one year post treatment.

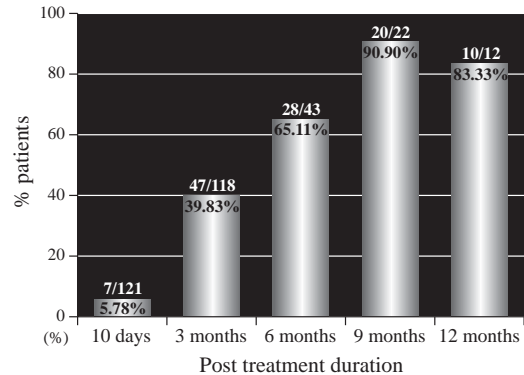


Fig 5- Percentage of patients whose liver feature returned to normal shown by ultrasound examination.

had the difficulty to find eggs by stool examination.

Patients were treated by dehydro-emetine or chlorhydrate-emetine (Chirikhtchian *et al*, 1997. These drugs have many disadvantages since patients must stay at hospital for at least 10 days. In Vietnam, other drug such as triclabendazole (Couturier *et al*, 1999) was not available.

Most patients were followed-up after treatment. We noted that the percentage of eosinophilia and structure of the liver on ultrasound returned to normal levels sooner than the titer of the serodiagnosis. By the 9th month, 70% of patients had normal percentage of eosinophilia; 90.9% of the patients have ordinary structure of the liver on ultrasound. In contrast, one year after treatment, the titer of the immunodiagnosis was still high in 91.7% patients.

Conclusion

In Vietnam, fascioliasis has increased especially in the Central provinces and Midland provinces. Because of the habit of eating raw vegetables, the environmental conditions, the breeding of cattle near cultivated areas, etc, the number of patients detected is probably much lower than found. Emetine is not a good solution for treatment because of its disadvantages. It is necessary for many sectors to

co-operate: health, agriculture, ecology and environmental services to develop a better solution to this important problem.

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