

Ascariasis and Asthma*

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The association between bronchial asthma and ascariasis has occasionally been described in the medical literature.¹⁻³ A study done by Tullis gave a special emphasis to this co-existence.⁴ Among his group of 201 asthmatic patients, over 90% had ascaris, 12 patients had strongyloidiasis and two had *Necator Americanus*. None of the control subjects had any of these parasites.

Working in a University hospital that serves the majority of Eastern Turkey, we are encountering a great deal of parasitic infestations, even in those patients who have unrelated problems. However, bronchial asthma is seen very rarely in this cold and mountainous region.

These facts, and the controversial comments by others^{5,6}, prompted us to start a study on ascariasis and related systemic symptoms.

Materials and Method

Stool specimens were obtained from 162 healthy female students in Ataturk University Medical Faculty Nursing School. Their ages varied from 15 to 19 years, the average being 16.2. They were mainly from Eastern Turkish towns except for two from the Black Sea Coast and seven from the Western and Central parts of Turkey. The social backgrounds of the subjects were similar. The majority came from a middle class home milieu and a few came from poor villages.

Fresh stools were examined by the Direct Fecal Film Method. The stools of subjects who were initially negative were re-examined on successive days. Some of the subjects who had stated before the examination that they had parasites, were also carefully examined for the identification of the ova.

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TABLE I
IDENTIFICATION OF PARASITES IN ALL SUBJECTS

	No Parasite	Ascaris Lumbri- coides	Ascaris and Trichuris Trichiura	Ascaris and Teania Saginata	Trichuris Trichiura	Teania Saginata	Teania Saginata and Trichuris Trichiura	Hymenolopis Nana
Number of Subjects	56	69	8	4	11	7	3	4
%	34	43	4	2	6	4	1	2

TABLE II
SYMPTOMS PRESENTED IN ALL SUBJECTS

	Headache	Abdominal Ache	Nausea	Prurits	Malaise	Joint Pain	Cough	Dys- pepsia	Con- stipation	Diarrhea	No Symptom	Total
Parasite	39	8	3	7	15	1	3	3	6	4	17	106
No Parasite	10	2	0	1	5	0	4	3	5	2	24	56

After obtaining a careful history by one of us, a thorough examination was given to all of the subjects. A special effort was made to diagnose any disease state related to bronchial asthma. The criteriae for the diagnosis of this disease were: A history of shortness of breath associated with wheezing; exacerbation of this syndrome with contact to pollens and animals; auscultatory findings of bilateral expiratory wheezing rates. None of the subjects were receiving any special medication, except one who was receiving monthly long lasting penicillin injections for her old history of rheumatic fever. In addition to the history and physical examination, a questionnaire that contained questions about all symptoms was given to all subjects.

Results

185 stools were examined from the 162 subjects. 106 (65.4%) of them had one or more parasites in their stools. As is shown in Table I, ascaris was found in 81 persons (76%), either alone or together with another parasite. In reviewing the questionnaire which was filled in by all the subjects, headaches were present in 39 of the parasite positive group while only 10 of the parasite free group reported this symptom. Other systemic complaints were as shown in Table 2. There was no significant difference found in the physical examination between the two groups.

Discussion

In none of the 162 subjects were we able to diagnose a case of bronchial asthma. As is shown in Table II, three and four people in each group respectively had coughs which were interpreted by us as the result of chronic bronchitis and the common cold. None of these people had the afore-mentioned criteriae for bronchial asthma. It is however striking to see the difference in the incidence of headaches between the two groups. The symptoms of abdominal aches, malaise and pruritus also show a slight difference between groups. Despite all these symptoms obtained from the questionnaire, none of the subjects had made a complaint to her school physician or to any other medical source. However, many of them admitted to taking aspirin or some other analgesics for headaches.

Our study tends to confirm the results of Van Dellen, who denies the etiological role of parasitosis in bronchial asthma.⁶ Despite seeing all types of parasitic infestations among our over 300,000 out-patient department population annually, it is our impression that bronchial

asthma is quite uncommon in this part of Turkey. On the contrary, bronchial asthma probably is seen more commonly in the Western part of Turkey where hygienic conditions are better and parasitic infestations are less.⁷

Summary

A survey of 162 healthy female nursing students in Eastern Turkey revealed ascariasis in 81 of them (either alone or together with another parasite). A study was then performed on all the students to find out whether there was any correlation between ascaris and asthma. It was found, however, that none of the subjects had symptoms or signs related to asthma. Furthermore, of the 300,000 people we see annually in our out-patient department, the incidence of asthma is exceedingly low (despite the heavy ascaris infestation in the population). Therefore we feel that the correlation between asthma and ascariasis is incidental and not related.

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