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Geographical Pathology of Gastroduodenal Ulcer Disease in Ambah Town, Madhya Pradesh

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ABSTRACT The study is based upon a sample survey which was conducted during the period from August, 1989 to July, 1990 in Ambah town. In the paper, emphasis is placed on the causal intervention of the emotional factors perhaps responsible, in part, for a more elevated secretory level of the stomach. In the same way, the food habits, diet, the use of alcohol and tobacco exert also striking influences towards a favourable evolution of the disease. It is shown that the influence of climate is also partially responsible for the emergence of ulcer disease in the town. Besides, it is also revealed that the possible associated diseases with ulcer were like-severe liver insufficiency, amoebiasis and infection of tonisls. Not only so, the etiologic hierarchy of all of the factors is discussed and found to consist of a plurality of physiopathologic mechanisms involved in the production of ulcer disease. The control measures are discussed here.

INTRODUCTION

In this study, an attempt is made to analyse the geography of gastroduodenal ulcer disease in Ambah town. The study is based upon a sample survey of 1117 households of Ambah town. These households consisted of about 50 per cent population (13485 persons) of the town (1990). Each patient of these households was interviewed during the survey and thus the information of 215 incidence of disease (170 males and 45 females) was traced out in the period from August, 1989 to July, 1990. It was calculated that about 1.59 per cent of the total population was suffering from the disease.

In fact, the epidemiology of ulcer is not extremely different from epidemiology of typhoid. Just as typhoid is the product of a biological system that includes man and the *Salmonella typhi*, so ulcer is the product of a social system that includes social environment society, population stress, urban stress, poverty stress, family conflicts, personal habits and so on.

This pitiless ecosystem of man has plagued his life with difficulties and tensions imposing acute crises effecting his moral standard and exerting a noxious influence on the organism. May not function derangements so produced lead to organic lesions such as ulcer ?

Actually, gastroduodenal ulcer is an ulcerated or eroded area of the mucous membrane that lines all the digestive organs. It occurs most frequently in the lower end of the stomach, first part of the duodenum or lower end of the oesophagus.

"The most outstanding symptom of an ulcer is pain. It is usually sharp and severe. In a few cases there is also a steady aching or gnaving sensation in the upper abdomen. The patient can always put his finger on the sore spot. In duodenal ulcers the pain comes on when the patient is hungry, it may even be severe enough to awaken him at night. In many cases the pain is relieved by taking food; but is made worse by taking alcohol, condiments and coffee. Patients with stomach ulcers may feel worse after taking food" (Anderson, 1971).

Table 1 : Incidences of ulcer disease in occupational groups (1990)

Occupational groups	*Gastric ulcer*		*Duodenal ulcer*	
	Cases	*Per cent*	*Cases*	*Per cent*
Administrators, Businessmen and Bus drivers	40	37.04	60	56.06
House wives	14	12.96	15	14.02
Labourers	40	37.04	15	14.02
Cultivators	8	7.41	5	4.68
Others	6	5.55	12	11.22
Total	108	100.00	107	100.00

STUDY TOWN

Ambah town is located in the plain of the lower Chambal basin, district Morena - Madhya Pradesh. It is a part of tropical semi-dry zone of central India. Geometrically, it is situated from 26° 28' N to 26° 32' N latitudes and from 78° 12' E to 78° 15' E longitudes. Due to the tropical semidry conditions of the climate and the impact of the Chambal ravines, geographically the landscape of the town is not aesthetic and stimulating. The total population of the town is 27224 (1990).

GEOGRAPHICAL FACTORS RESPONSIBLE FOR EVOLUTION OF THE DISEASE

1. Climate

The general experience is that the season change has marked effects on the activity of ulcer. The greater incidence of ulcer activity is in the beginning of hot-dry season (at an average temperature of 28° C with 40 per cent of atmospheric humidity, and in the end of hot wet season (at an average temperature of 30° C with 67 per cent of atmospheric humidity).

2. Genetic Factor

As regards the genetic factor, one kind of evidence *i.e.* familial incidence is presented. The familial incidence or hereditary incidence of peptic ulcer were 10 per cent of the total ulcer cases. It was also noted that the total familial gastric cases were 6 per cent of the total ulcer cases of the town. While the familial duodenal cases were 4 per cent of the total incidence.

3. Factors of Infections Diseases

The majority of patients had one or more focal infections either tonsils, or teeth or both. Generally, the oral hygiene of the patients in the town was very bad. It is very important to note that the high percentage (20 per cent) of the patients were with focal infections.

4. The Emotional Stress

These have a definite influence of the emotional stress on the evolution of ulcer disease and specially on the evolution of the duodenal ulcer. The type of work which involves many risks added to economic problems, (conflicts in services, family conflicts etc.) might produce a state of chronic emotional tension that would favour the formation of ulcers (Table 1). The chronic anoxia, deficient nutrition, and emotional factors, would act as 'stressor' agents and, added to the circulatory changes of the gastric mucosa, would lead to the formation of ulcers.

5. Dietary Factors

Besides the emotional factors, the ecology of peptic ulcer in India and specially in Ambah town has been largely attributed to diet. The

high content of spices should lead one to believe that gastric irritations is leading to the formation of gastric ulcer which is more frequent in older individuals. It is confirmed that the factors of undernutrition and malnutrition favour the formation of ulcer. Besides of focussing attention on malnutrition I preferred to consider the problem of the weight of the patients before the onset of the symptoms attributed to ulcer. The majority of the patients with both gastric and duodenal ulcer, had weight under normal (Table 2).

Table 2 : Weight of patients with peptic ulcer

Sex/Ulcer	*Normal weight % of the total patients in sex*	*Under weight % of the total patients in sex*
Gastric ulcer		
Male	46	53
Female	71	28
Duodenal ulcer		
Male	37	62
Female	65	34

6. Factor of Habits

Habits of individuals are also responsible for genesis of ulcers. A number of habits of individuals are prevailing in Ambah town. The major habits are in the form of smoking, the use of alcohol (specially the use of hot and inferior alcohol), the use of excessive spices, and the habit of chewing tobacco. Besides, most of the persons used to consume more sweets, tea and sugary food. The ingestion of alcohol and smoking show a certain tendency to aggravate and to complicate the evolution of patients with ulcer.

7. Variation of Ulcer Incidence in Age Structure

It was noted that the highest percentage of ulcer disease was found in the age group of fifth decade of life. The study also shows that the age group of forty to forty nine was found to have the peak incidences; with the majority beginning to have symptom at the age of 39 years (Table 3). While the lowest rate of incidence was in third decade of life. And the first, second and the post seventh decade of life were free from ulcer disease.

MEASURES TO CONTROL THE DISEASE

(1) Change in thinking and habits of living is essential to escape from the disease.

(2) Gastric irritation should be avoided by care in diet and by elemination of smoking and alcoholism.

(3) The diet and especially the intake of proteins and vitamins is to be improved.

(4) The sincere step is to be taken to remove the load of tension and stress.

(5) Success in solving the problem will not be achieved until interdisciplinary approach is

Table 3 : Incidence of ulcer disease in age and sex group (1990)

Decade of life	*Gastric ulcer*				*Duodenal ulcer*			
	Male		*Female*		*Male*		*Female*	
	Total	*%*	*Total*	*%*	*Total*	*%*	*Total*	*%*
3rd	4	5.0	1	3.58	5	5.56	1	5.88
4th	10	12.5	3	10.71	35	38.89	2	11.76
5th	40	50.0	16	57.14	40	44.44	10	58.83
6th	20	25.0	6	21.43	8	8.89	3	17.65
7th	6	7.5	2	7.14	2	2.22	1	5.88
Total	80	100.00	28	10.0	90	100.00	17	100.00

established to analyse and understand them more intensively.

Table 4 : Distribution of ulcer cases according to sex (1990)

Sex	*Gastric ulcer* %	*Duodenal ulcer* %
Male	74.74	84.11
Female	25.26	15.89
Total	100.00	100.00

Table 5 : Sexwise incidences of gastroduodenal ulcers in Ambah Town (1990)

Ulcers	*Total male patients*	*Total female patients*
Gastric ulcer	80	28
Duodenal ulcer	90	17
Total	170	45

CONCLUSION

We have already admitted the preponderance of emotional factors in the production of ulcer disease. Physical environmental factors especially climatic seasonal conditions illustrate that external factors are able to exert on the evolution of ulcer disease.

It is also admitted that the businessmen, administrators, and bus drivers presented a higher incidence of ulcer than the cultivators, clerks and labourers.

The lower incidence of ulcer disease in women is caused due to lesser amount of load of emotional tension, right eating timings, and absence of smoking and alcoholism (Tables 4 and 5). It is also confirmed that the age group of forty nine was found to have the peak incidence.

It is confirmed that rising living and social environmental standard of the people will be very helpful in controlling the disease. It is also confirmed that the tendency to have devoid excessive use of fried food, sugary foods, tobacco and alcoholism will be continued for ulcer disease to be beaten.

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