

## Seasonal Fluctuation in the Incidence of Duodenal Ulcer

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### ABSTRACT :

#### BACKGROUND :

The aim of this study is to investigate and explain the distribution of patients with symptomatic duodenal ulcer " DU " along the months and seasons of the year and to show whether there is a seasonal fluctuation or not .

#### PATIENTS AND METHOD :

The reports of all endoscopically proved DU patients residing in Babylon , Iraq during five years period starting from January 1998 to December 2003. The results were plotted on curves month by month and season by season and then the data were analysed to show their distribution along the seasons of the year and whether there is fluctuation or not.

#### RESULTS :

Out of 4006 patients endoscoped , 1846 showed DU in a form of : ulcer , deformity , and stenosis . The highest incidence of DU was observed during winter 607 (32.88%) patients and spring 537 (29.08%) patients , progressively diminishing throughout summer 380 (20.58 ) patients and Autumn 322 ( 17.44% ) patients.

#### CONCLUSION:

There is a highly statistical significance "  $P < 0.01$  " of seasonal variation in the activity of duodenal ulcer with maximum incidence during Winter and Spring and lower during summer and Autumn .

**KEY WORDS:** Duodenal ulcer , Seasons.

### INTRODUCTION:

Duodenal ulcer is a common disease with heterogeneous behaviour with some fluctuation in its incidence among the seasons of the year for unclear reasons ( 1 , 2 , 3 ) . There are a lot of controversies about this fluctuation in regard to its time of highest and lowest incidence during the year and its explanation . The aim of this study is to show the distribution of patients with DU along the year and whether there is seasonal fluctuation or not.

#### PATIENTS AND METHODS :

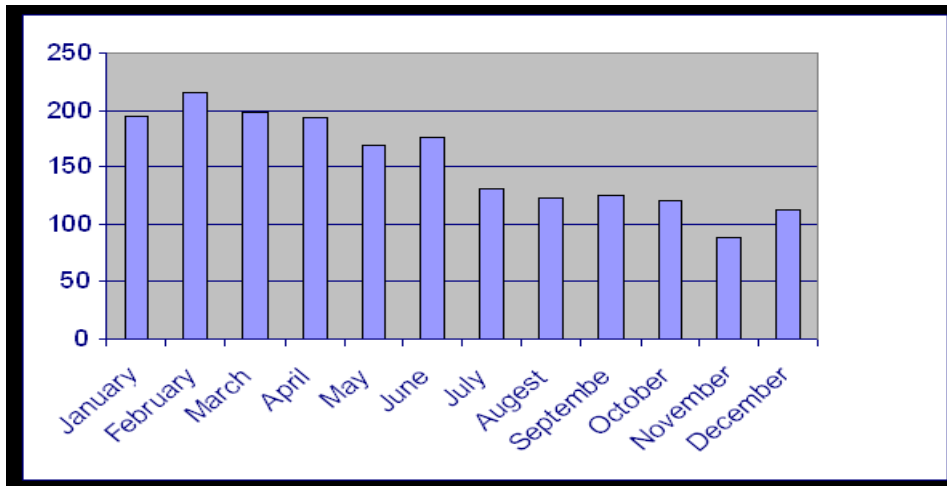
The study included a retrospective analysis of the endoscopy records of all patients with proved DU in the endoscopy unit in Hilla General Teaching Hospital , Babylon , Iraq during six years period starting from January 1998 to December 2003. All endoscopically proved DU patients were evaluated and plotted on block and curve , month by month and season by season in regards to their distribution along the year and the results are analysed.

### RESULTS :

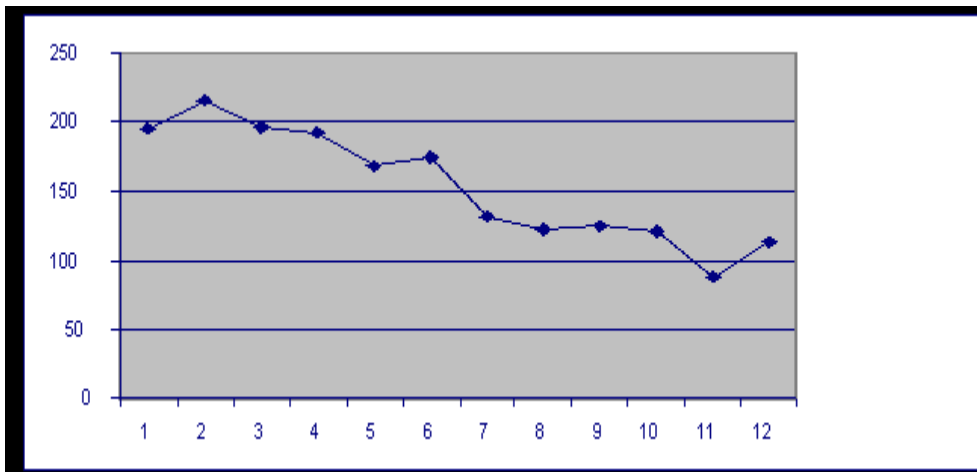
Out of 4006 patients endoscoped , 1846 showed DU , ages ranged between 24 and 76 years with a mean of 46 years, 1327 males and 519 females . The endoscopic findings were the followings : 1742 ulcer , 83 deformity , 21 stenosis . The distribution of patients along the months of the year are shown in figure ( 1 ) and Fig. ( 2 ) .

were observed during winter months (January , February and March ) and 537 (29,08%) patients in spring months ( April , May and June ) , 380 (20.58%) patients in summer months ( July , August and September ) and 322 (17.44%) patients in Autumn ( October , November and December ) . These results showed that the distribution during the cold seasons was higher than during the hot seasons

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**Figure ( 1 ) : Distribution of patients along the months of the year**  
On plotting these results on a curve , it shows the results as in Fig. 2 . ;



**Figure ( 2 ) : Distribution of patients along the months of the year**

The distribution of patients along the seasons of the year were as in Fig. 3. and 4 . 607 (32.88) patients

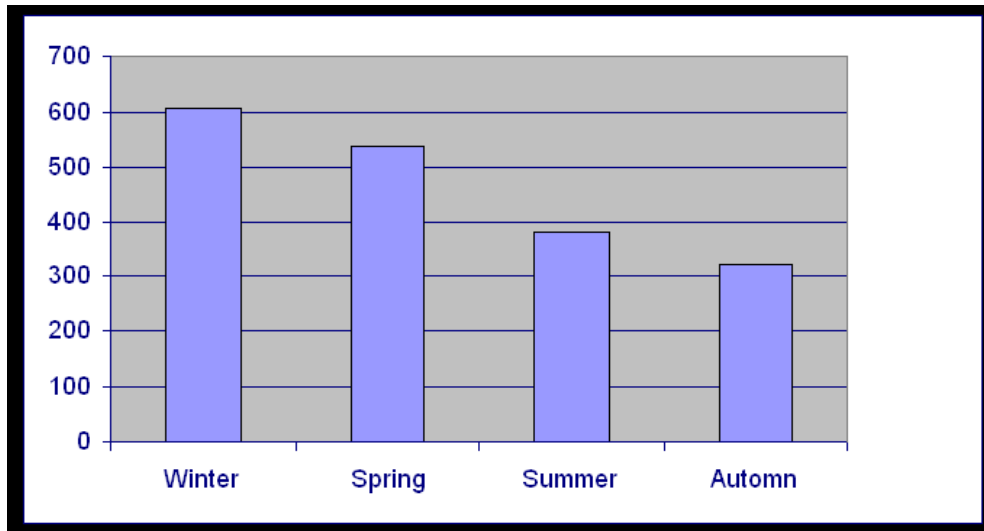


Figure ( 3 ) : Distribution of patients along the seasons of the year

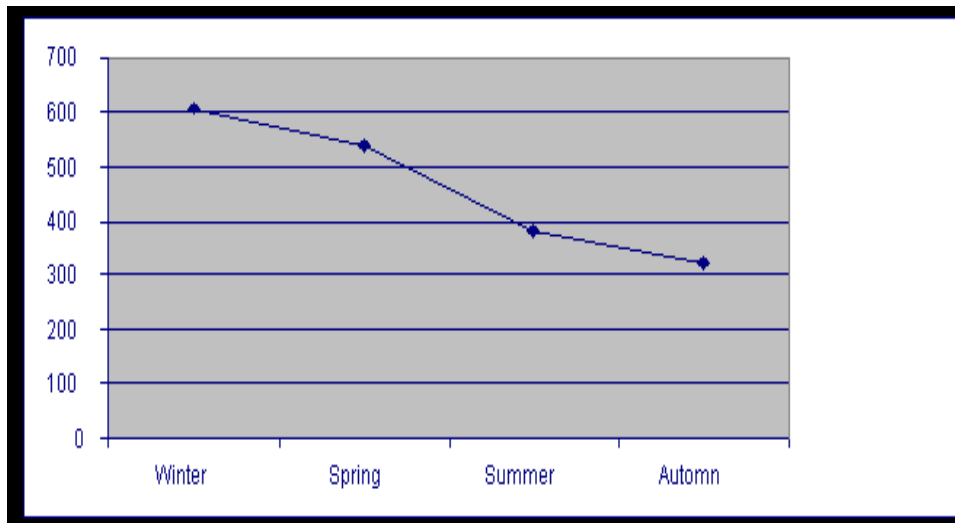


Figure ( 4 ) : Distribution of patients along the seasons of the year

**DISCUSSION:**

Numerous studies described the existence of seasonal fluctuation in the occurrence of duodenal ulcer and its complications for poorly understood reasons ( 1, 2 , 3 ) but there are differences from country to country in regards to the seasons of increased and decreased incidence , yet some denied its existence (4,5).

In this study , statistical analysis showed a highly significant increase of duodenal ulcer occurrence with ( $p < 0.01$ ) during cold and runny seasons i.e. ; winter (January- February and March) and in spring (April , May and June) compared with summer (July , August and September) and Autumn (October , November and December ) . Both females and males showed this significant seasonal variation.

The exact explanation of this is still unclear, but several studies explained it on the basis of maximum colonization of the gastric mucosa with *Helicobacter Pylori* infection 'HPI " during this period of the year similar to any other communicable infectious diseases ( 6 ). The evidence for this is that it was found that both, the frequency of *H. pylori* infection and DU were significantly increased during the winter months and decreased in the summer, ( 3, 7 ) . Unfortunately , we did not include tests for HPI in this study , so this relationship could not be demonstrated .

Some studies related it to changes in climate , social , dietary habits and stress (8, 9, 10) but these are difficult to be proved .

Few small studies relate periodicity of DU to that of periodic changes in acid secretion of the stomach but on the contrary some denied this relationship and there is no big study which proved that (2,4).

**CONCLUSION :**

The data in the current study and the review of other studies had confirmed that there is a high statistical significance with  $p$  value  $< 0.01$  for the presence of seasonal fluctuation of DU and its complications which may give a chance to the hospitals to prepare enough beds to deal with this problem or prevention of exacerbation of DU by

appropriately timed administration of prophylactic antiulcer therapy .

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