Impact of the economic sanctions on duodenal ulcer in Iraq

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تأثير القيود الاقتصادية على قرحات الإثنا عشري في العراق

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خلاصة : أجريت مقارنة بين حالات قرحات الاثنا عشري التي أدخلت للمعالجة بالمستشفى العام بالبصرة خلال عام كامل قبل فرض القيود الاقتصادية وبين الحالات التي أدخلت خلال سنة في ظل هذه القيود . وشملت عناصر المقارنة ، عدد المرضى والفئات العمرية وعوامل الاختطار (احتمال الخطر) والمضاعفات ، والتشخيص والمعالجة ومعدلات الوفاة . فتبين أن عدد الحالات (138) قد ارتفع أكثر من ضعفين في ظل القيود . وكانت هناك زيادة كبيرة في ممارسة التدخين بين المصابين بقرحات الإثنا عشري خلال فترة فرض القيود . ولوحظت كذلك اختلافات أخرى بين الفترتين ، وتناقش هذه المقالة أسباب تلك الاختلافات .

ABSTRACT Cases of duodenal ulcer admitted to Basra General Hospital for a one-year period prior to economic sanctions were compared with cases admitted in a one-year period during sanctions. The number of patients, age ranges, risk factors, complications, diagnosis, treatment and mortality rates were compared. The number of cases more than doubled during the period of sanctions. There was a significant increase in smoking among duodenal ulcer patients during sanctions. Other differences between the two periods were observed and reasons for these differences are discussed.

Impact des sanctions économiques sur les cas d'ulcère duodénal en Iraq

RESUME Les cas d'ulcère duodénal admis à l'Hôpital général de Bassora sur une période d'un an avant l'adoption des sanctions économiques ont été comparés avec les cas admis sur la même période après l'adoption de ces sanctions. Le nombre de patients, les groupes d'âge, les facteurs de risque, les complications, le diagnostic, le traitement et les taux de mortalité ont été comparés. Le nombre de cas a plus que doublé durant la période des sanctions. Il y a eu une augmentation importante du tabagisme chez les patients atteints d'ulcère duodénal pendant la période des sanctions. D'autres différences entre les deux périodes ont été observées et les raisons de ces différences ont été examinées.

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Introduction

Chronic duodenal ulcer (DU) is a major problem of modern society. It is a chronic condition characterized by repeated episodes of ulceration [*1*]. The disease may occur at any age with the highest incidence between 20 and 40 years. Men are affected more than women. Diagnosis is best made by endoscopy, and in about 90% of patients the ulcer is situated in the first part of the duodenum, within two centimetres of the pylorus [*2*].

It has been reported that nearly 40 000 DU patients are admitted to hospital every year in the United Kingdom, while more than 4500 people die from the disease annually [*3*]. The annual death rate from DU has steadily increased since 1970, especially among women and old people (over 74 years). Smoking, stress, diet and familial susceptibility are the main predisposing factors for the occurrence of DU. All these factors can increase peptic activity and result in hypersecretion of gastric acid [*4–6*].

Economic sanctions imposed on Iraq have had a significant effect on these factors, particularly stress and diet, and have increased the chances of occurrence of DU and probably accentuated its course resulting in a higher rate of complications. The aim of the present study was to assess the impact of the economic sanctions on DU.

Patients and methodology

The cases of DU admitted to the surgical wards at Basra General Hospital (the largest hospital in Basra, Iraq) for a one-year period from 1 July 1989 to 30 June 1990 (before sanctions) were collected and compared with the cases of DU admitted to the same hospital from 1 January 1993 to 31 December 1993 (during sanctions). The period before sanctions is referred to as the first period, while the period during sanctions is the second period. The information was collected from the case sheet reports of the patients. Diagnosis of DU was made mainly by gastro-oesophageal endoscopy and sometimes by barium study or clinical observation. Endoscopy was done for all patients undergoing elective operations but some patients admitted as emergency cases or as complications of DU refused endoscopic examination, or the patient's general condition was too serious to carry out endoscopy. Perforation was diagnosed clinically and radiologically.

Statistical analysis was made for the proportion by means of a statistical package *Microstate*. A P value of less than 0.05 was considered statistically significant.

Results and discussion

The total number of DU patients was 54 in the first period (44 males and 10 females) and 138 in the second period (111 males and 27 females).

Although it was the same city, the same hospital and the same surgeons working in the hospital, the number of DU patients in the second period (138) was more than twice the number in the first period (54). This reflects the increase in the stress of life, changes in nutritional state and diet and also reflects the shortage of drugs and the increased price of therapy. It is generally believed that DU predominantly afflicts males rather than females, which is what we observed in both periods.

With regard to age, the highest percentage (29.6%) of DU patients were aged 40–49 years in the first period, while in the second period the highest percentage (32.6%) of DU patients were aged 20–29 years (Table 1). Thus, the mean age of DU

patients in the second period was younger than that in the first period. This might be due to an increase in the stress of life or to changes in diet and nutrition in the second period. A study done in India showed that the prevalence of DU increased with age with a peak prevalence of 28.8% in the 40–49 year-old age group [*4*].

The risk factors associated with DU were studied (Table 2). In the second period, there was an increase in smoking among DU patients compared with the first period. The difference was statistically significant ($P = 0.03$). This could reflect a general increase in smoking among the population as a consequence of the stress of life. It may explain the increase in DU incidence in the second period since smoking is associated with increased ulcer risk due to decreased pulmonary function in DU patients [*5*].

Table 3 shows the presentation of DU patients in the two periods. We found an increased incidence of complications, such as

Table 1 **Duodenal ulcer patients in both periods according to age group**

Period	Age (years)													
	10–		20–		30–		40–		50–		60–		70+	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1st period	1	1.9	11	20.4	13	24.1	16	29.6	8	14.8	3	5.6	2	3.7
2nd period	5	3.6	45	32.6	37	26.8	29	21.0	15	10.9	5	3.6	2	1.4
P value	0.5		0.15		0.4		0.25		0.4		0.44		0.4	

Table 2 **Risk factors in duodenal ulcer patients**

Period	Smoking		Alcohol		Smoking and alcohol		No smoking nor alcohol	
	No.	%	No.	%	No.	%	No.	%
1st period	10	18.5	10	18.5	10	18.5	24	44.4
2nd period	70	50.7	15	10.9	31	22.5	22	15.9
P value	0.03*		0.3		0.4		0.02*	

**Statistically significant*

Table 3 **Presentation of duodenal ulcer patients**

Period	Pain		Haematemesis		Melena		Haematemesis and melena		Pyloric obstruction		Perforation	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1st period	35	64.8	5	9.3	5	9.3	3	5.6	1	1.9	5	9.3
2nd period	72	52.2	17	12.3	15	10.9	12	8.7	3	2.2	19	13.8
P value	0.105		0.419		0.45		0.416		0.5		0.38	

Table 4 **Method of diagnosis of duodenal ulcer**

Period	Endoscopy		Barium test		Endoscopy and barium test		Clinical	
	No.	%	No.	%	No.	%	No.	%
1st period	42	77.8	2	3.7	5	9.3	5	9.3
2nd period	120	87.0	0	–	0	–	18	13.0
P value	0.06*		–		0.409		–	

**Borderline significance*

Table 5 **Method of treatment of duodenal ulcer**

Period	Operative		Conservative	
	No.	%	No.	%
1st period	42	77.8	12	22.2
2nd period	112	81.2	26	18.8
P value	0.329		0.38	

haematemesis, melena, obstruction and perforation in the second period compared with the first period. This might be explained by the shortage of drugs and a more serious pattern of the disease because of patients neglecting their health as a result of their lowered socioeconomic status.

Table 4 shows the method of diagnosis of DU. In both periods, endoscopy was the method most commonly used in diagnosis, but there was a decrease in the use of barium studies in the second period because of shortages in X-ray films, which have made the barium studies expensive.

The methods of treatment of DU, whether conservative or operative, were studied (Table 5). There was an increase in operative treatment and a decrease in conservative treatment compared with the first period. This could be explained by a shortage of drugs and the increased cost of long-term treatment with H_2-blockers.

The mortality rate due to DU disease slightly increased in the second period, which could be explained by malnutrition, anaemia and the generally poor condition of many DU patients. In addition, it could be due to an increase in the incidence of complications, such as haematemesis, melena, obstruction and perforation, which increase morbidity and mortality rates. It is still a relatively low mortality rate (1.9% and 3.6% for the first and second periods respectively) compared with a study done by Balslev et al. who found an overall mortality rate of 10% in DU patients (0.5% in elective operations) [*6*].

Conclusions

In the second period, because of the economic sanctions, there was a change in the lifestyle of the Iraqi people, a change in their diet and nutritional status, a change in their economic status, an increase in stress and smoking as well as a shortage of drugs. All these factors adversely affected DU disease in the following way:

- The incidence of DU more than doubled.
- DU became more prevalent in those aged 20–29 years rather than 40–49 year olds.

- There was an increase in the operative treatment of DU and a decrease in conservative treatment.
- DU became a more severe disease with increased morbidity and mortality rates.

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Status of papers submitted to the EMHJ as at 31 December 1997

Category	1995	1996	1997
Received[1]	128	119	157
Accepted[2]	76	90	57
Published[2]	69	68	24
Withdrawn[2]	5	1	2
Rejected and closed files[2]	47	26	37
In process[2]	0	2	6 1

[1]During the year
[2]From the above papers, until the end of 1997