

## Letters to the Editor

### Clinical Profile of Bell's Palsy in the Qassim Region

*To the Editor:* Bell's palsy is frequently observed in the Qassim region, both as isolated cases throughout the year, and in apparent clusters in the winter; in healthy individuals, as well as in diabetic and hypertensive; and in aged patients as well as in pregnant females.

As is often observed, the time taken for total recovery is relatively prolonged and in a few patients recovery is incomplete. The objective of this study was to determine the factors relating to Bell's palsy in our region, with particular reference to factors affecting the recovery period.

One hundred and twenty cases of Bell's palsy seen in medical clinics of Al Rass General Hospital over a period of two-and-a-half years, between January 1995 and July 1997, were studied and analyzed. All cases of facial asymmetry and weakness were pooled into the author's clinic, and only isolated, LMN VII nerve palsies of idiopathic nature were sorted out. History and clinical symptoms and signs were all documented. ENT consultation was obtained to rule out middle ear pathology and stapedia involvement. Fasting and postprandial blood sugar, lipid profile, skull, cervical spine and chest x-ray were carried out in each case. Due to non-availability, neurophysiological studies could not be considered. All those patients who presented within a week of onset received a short rapidly tapered high dose of prednisolone, along with a course of neurotropic vitamins, unless absolutely contraindicated. Preventive measures for exposure keratitis were advocated in those with incomplete palpebral closure and absent Bell's phenomenon by ophthalmic consultation, along with three weekly sessions of physiotherapy in the hospital. Diabetic and hypertensive patients received additional appropriate medications. All patients were closely followed by reviewing them on the 10th, 15th, 30th, 60th, and 90th day, and their recovery was documented as clinically observed in the regaining of facial muscular function in percentages.

There was an incidence of 24.9% (47 cases), 36.5% (56 cases), and 30.7% (17 cases) per 100,000 outpatient cases in 1995, 1996, 1997, respectively, with an average of 30.4 cases of Bell's palsy per 100,000 outpatient cases per year. The disease was seen in all ages from 13 to 100 years, with a mean age of 39.6. Approximately 86 of the patients (72%) were male and 34 (28%) were female. About 55.8% of the cases (67) were rural residents, while 44.2% (53) were urban residents. About 55.8% of the cases (67) had left-sided palsy, while 44.2% (53) had right-sided palsy. Five of the cases (4.2%) had recurrent palsy on the same or alternating sides. A majority of the patients (85.8%, 103 cases) reported to the hospital within 48 hours, while the

TABLE 1. *Symptoms and signs.*

Symptoms	No. of patients (%)
Facial asymmetry	119 (99.2)
Drooling	90 (75)
Incomplete palpebral closure with excessive lacrimation	90 (74)
Retroauricular pain	67 (55.8)
Hyperacusis	7 (5.8)
Ageusia	7 (5.8)

TABLE 2. *Bell's Palsy and associated conditions.*

Associated conditions	No. of cases (%)
Diabetes mellitus	25 (20.8)
Hypertension	10 (8.3)
Younger age group (<65 years), including 22 diabetics	107 (89.2)
Elderly age group (>65 years), including 3 diabetics	13 (10.8)
Pregnancy	1 (0.8)
Postpartum	1 (0.8)

remaining (14.6%, 17 cases) delayed their initial presentation from seven to 25 days from the day of onset. All cases had completion of palsy within 48 hours. The cases averaged from seven per month during the peak winter season to three to four per month during the rest of the year. The symptoms and signs on presentation have been summarized in Table 1.

Substantial clinical recovery (75%) in the initial one-month period was observed in 54.2% (65) of cases, with 27.5% of cases regaining under 75% of facial muscular functions in the same period. An estimated 8.3% of the cases (22) were lost to follow-up before the end of the first four weeks. Those deemed to have a good recovery due only to reversible conduction block showed a 50% improvement in regaining the muscular function in the initial 10 days of follow-up, with graded improvement in subsequent visits. At the end of three months, they had 95% recovery with no residual palsy. The second group (33 cases), with supposedly less axonal degeneration with destined partial and delayed recovery, showed only 0%-15% return of muscle function in the initial 10 days, and about 2/3 of them (23 cases) progressed to about 50% recovery in one month. About half of these (11 cases) progressed to regain 75% muscle function. Three cases did not show any progress beyond 60% at the end of three months. The progress of the remaining seven cases remained arrested at 0%-15% of recovery with residual paresis and asymmetry. The analysis of 120 cases of Bell's palsy with associated conditions is tabulated in Table 2.

At the end of four years of follow-up, the elderly age group of over 65 years (13 cases), of whom three were diabetics, showed an equal recovery rate of 66% as that of

a relatively younger age group of under 65 years (107 cases), with 22 diabetics. Overall, diabetic patients (25 cases), irrespective of age, regained an average 50.4% of facial muscular function, as compared to 87.7% in non-diabetics at the end of 30 days. Six of these non-diabetics regained nearly 90.8% of function, while 16 cases had poor outcome, with less than 53.7% of improvement, and three could not be followed after three months. Of the 10 hypertensive patients with Bell's palsy, eight (80%) averaged a 70% response at the end of four weeks.

Twenty-seven cases had altered lipid profile, with average cholesterol levels of >5.2 mmol/L and triglyceride of >1.8 mmol/L. No radiological abnormality was observed in skull, cervical spine and chest x-ray. None of those with poor recovery showed any synkinetic or dyskinetic movements, and those with <50% recovery of residual asymmetry only obvious on emotional facial movements remained satisfied with it. No facial myokymia or contractures were seen in any of the patients as sequelae.

This was a hospital-based study rather than the population-based study which has been the basis of most other reports. The rate of prevalence of Bell's palsy in Al Rass, Qassim, averaged 30.43 cases per 100,000 OPD cases per year, while the other larger studies have reported 23 cases per 100,000 population per year.<sup>1</sup> As mentioned earlier, there was an apparent clustering during the winter season, which authors like Leibowitz<sup>2</sup> and Vassalo and Galea-Debono<sup>3</sup> have attributed to an epidemic of infective etiology. However, others like Adour and Wingerd have disputed this theory.<sup>4</sup> The incidence of the disease is reported to be twice as much in males as in females (no male to female ratio was available in local hospital statistics during 1975-1977), while others reported an equal distribution. In our study, the left side was more commonly affected than the right. While the prevalence of diabetes in the Central Province is reported to be 12.3% in males and 11.3% in females, its association with Bell's palsy in the present study is 20.8% and 10%-14% in population-based studies in other regions.<sup>1</sup> The same authors have reported the association of hypertension with the Bell's palsy to an extent of 8%. In the present study, the incidence was 8.3%, whereas the incidence of hypertension in the region is 8.6%. The lone case in the third trimester of pregnancy, and the other on the fifth postpartum day, did not provide significant enough data, even though the incidence of Bell's palsy in the last trimester of pregnancy is well known.

While incomplete Bell's palsies in the Qassim region are reported to be about 54.2% and complete palsies about 27.5% of cases in the present series, others have reported a good 80% and 20% of cases, respectively, in large control studies.<sup>6</sup> Cases of incomplete palsies showed complete recovery in about three months, whereas in complete palsies, the majority have a partial and delayed recovery,

about a quarter of them with residual paresis. Not only do diabetics have increased association with Bell's palsy, but the outcome is poor and delayed. Young patients with diabetes did not fare better than the elderly, suggesting that diabetes influences the outcome, irrespective of age. Recovery in hypertension is nearly the same as in normal individuals.

Whether these common associations are the only factors, or hitherto unknown factors, such as *Herpes simplex* involvement in the etiology, points to the need to evaluate the immunological profile of the local population. The screening for *Herpes simplex*, and early electrophysiological studies, may definitely throw some light on these unanswered questions.

**Dr. Hassan A. Hamid, MD**  
Medical Specialist and Head  
Department of Medicine  
Al Rass General Hospital  
Al Rass, Al Qassim  
Saudi Arabia

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### Ruptured Hepatocellular Carcinoma

*To the Editor:* Spontaneous rupture of a hepatic malignancy is a life-threatening condition. The pathogenesis of rupture is not fully understood, but it is believed to be due to tumor invasion of the hepatic vein, with subsequent tumor venous congestion.<sup>1,2</sup> Hemorrhage within the tumor causes sudden increase in the tumor size and the pressure within it, with subsequent rupture.<sup>1,3</sup> The rupture tends to occur in large hepatocellular carcinomas (HCC), especially in males with underlying cirrhosis. Although the incidence of HCC is high in Saudi Arabia, ruptured HCC is very uncommon. We report a case of spontaneous rupture of a hepatocellular carcinoma and review the literature on this life-threatening condition.

A 45-year-old Saudi male was referred after suddenly collapsing in the medical ward, with sudden onset of severe upper abdominal pain and hypotension, while

waiting for further investigations of a left hepatic lesion. His ultrasound a week earlier showed a large lesion occupying the entire left hepatic lobe, with areas of necrosis with no free peritoneal fluid. His hepatitis B serology was positive, with mild derangements in liver function tests (LFT). CT scan was not performed, as the machine was out of order. On examination, the patient was hypotensive and had generalized abdominal tenderness with guarding and rigidity. He was aggressively resuscitated. Repeat abdominal US showed a liver mass lesion with extensive necrosis and free fluid in the peritoneal cavity. Ruptured HCC was suspected and urgent laparotomy confirmed the diagnosis. The necrotic tissues were evacuated, active bleeders within the cavity were underrun, the common hepatic artery was ligated to achieve better hemostasis after a trial clamping showed no detrimental effects on the liver, and the tumor cavity was packed with omentum. The histopathology confirmed the diagnosis of a ruptured HCC (Figure 1). The patient's postoperative recovery was uneventful and he was discharged home in good general condition with near normal LFT, and remained well for three months, but was later lost to follow-up.

HCC is responsible for one million deaths a year.<sup>4</sup> The treatment is difficult, as more than half the patients with hepatocellular carcinoma have liver cirrhosis.<sup>5</sup> The majority of these patients, therefore, die untreated. Only patients with adequate biochemical liver function may be considered good candidates for surgery. In such cases, the morbidity and mortality seem to relate to the extent of liver resection.

Spontaneous rupture of HCC is a rare complication and is indeed a life-threatening condition affecting 12% of patients with HCC.<sup>2</sup> The condition accounts for 10% of deaths in Japan,<sup>6</sup> where HCC is common. The incidence of rupture is, however, decreasing due to early detection and treatment of liver tumors.

Although the preoperative diagnosis is often difficult, the diagnosis in our case was made easy by the knowledge of the presence of a hepatic lesion on US in a patient with HBV infection. Furthermore, the presentation of our case was also typical, with sudden onset of epigastric pain and fainting. This is encountered in more than 30% of cases.<sup>6</sup> Hypovolemic shock is present in 59%-90% of cases,<sup>2</sup> and signs of peritonism or peritonitis are always present in all cases.<sup>2</sup>

Abdominal US and CT scan are valuable noninvasive modalities in establishing diagnosis. Angiography is useful in establishing the site of rupture and is also useful as a therapeutic modality by embolizing the tumor and arresting bleeding.

Treatment of ruptured HCC aims at arresting bleeding immediately to avoid liver failure, restoring blood pressure and preferably, removing the tumor. One-stage hepatectomy is attractive but is hazardous, as it is often performed under unfavorable conditions in gravely ill patients. There are various methods of hemostasis directed to the site of rupture, such as suture plication, packing, argon beam coagulation, microwave coagulation, and alcohol injection. However, even these may be difficult to apply with satisfactory control of bleeding, as tissues are very friable. This was exactly what happened in our case, as underrunning of bleeding points within the tumor cavity was not enough to control bleeding, and was supplemented by hepatic artery ligation. Packing is a good temporary control, especially in ruptured HCC located underneath the diaphragm, until the patient is transferred to a specialized unit. Hepatic artery ligation is the most popular operative way of controlling bleeding, provided the portal vein is patent, as most of the remaining functioning liver parenchyma are dependent on the portal vein. This method is effective in controlling 92% of bleeding HCCs. But it does not control bleeding arising from a parasitic artery or vein, and is also associated with a high mortality rate. Furthermore, it renders future transarterial embolization impossible should bleeding recur. To avoid this high operative mortality, selective transarterial embolization is now the first line of treatment to arrest bleeding, and is associated with less hepatic damage, which is of vital importance in cirrhotic patients. It also allows stabilization of the patient and planning of future elective resection if the tumor is considered resectable. An experienced interventional radiologist is needed. This was not attempted in our patient due to the lack of facilities and expertise with this procedure at our institution.

A review of the world literature revealed that some 121

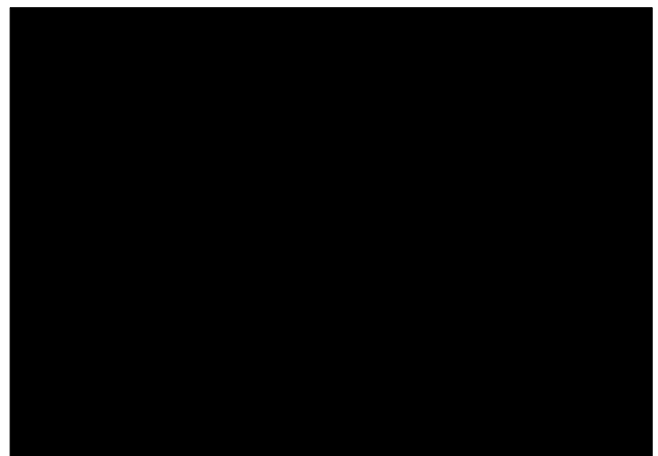


FIGURE 1. Microphotograph showing ruptured hepatocellular carcinoma. Tumor is seen amid blood clots (H&E, 100x).

patients with ruptured HCC worldwide were treated by hepatic artery ligation.<sup>3</sup> Bleeding was arrested successfully in 71 cases (58.7%), and only one patient (0.8%) was alive at one year, reflecting the advanced stage of the tumor at the time of rupture. Some presenting patients are not treated energetically, as rupture is considered a terminal manifestation of HCC in a seriously ill patient. Nevertheless, our case and the occasional long-term survival after embolization or hepatic artery ligation justify an aggressive treatment approach unless the patient is in a moribund condition. It can also be argued that conservative treatment is often associated with 100% mortality, while active treatment is associated with occasional successes.

Spontaneous rupture of HCC, although very rare, should be suspected in any patients with liver cirrhosis and HCC, presenting with acute epigastric pain, hypotension and collapse.

**Abdul-Wahed Nasir Meshikhes, FICS, FRCSI**

Consultant Surgeon

**Hamid Ullah Wani, FRCSI**

Surgical Specialist

**Mukund Tinguria, MBBS, MD(Path)**

Consultant Pathologist

Departments of Surgery and Histopathology

Dammam Central Hospital

Dammam, Eastern Province, Saudi Arabia.

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### Anorexia Nervosa with Pancytopenia

*To the Editor:* The prevalence of anorexia nervosa (AN) in the Western world is increasing due to the association of thinness with beauty. Data from the developing countries are scarce, and until recently fatness was associated with beauty and well-being. With increasing awareness of obesity as a morbid state, and the westernization of lifestyle, thinness is becoming an objective of many

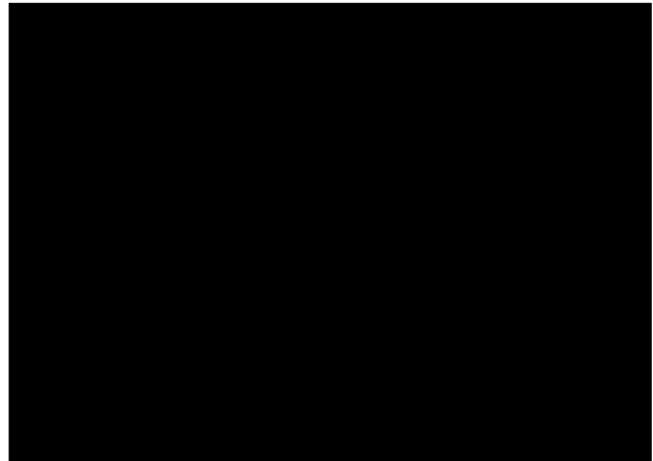


FIGURE 1A. Gelatinous bone marrow before therapy (microscopic view, 10x).

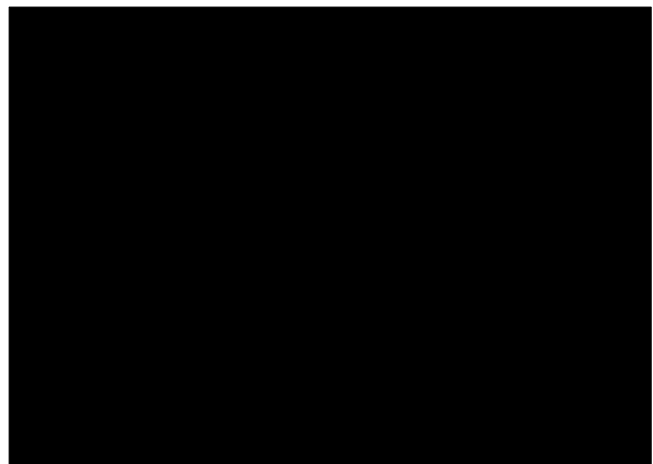


FIGURE 1B. Normal bone marrow cellularity after therapy (microscopic view, 10x).

teenagers, some of them going to the extreme of being anorectic,<sup>1</sup> and thereby developing serious complications.

Our case was a 20-year-old patient admitted to our hospital after complaining of productive cough and fever for five days. On admission, she was severely emaciated and toxic, her oral temperature was 39°C, respiratory rate was 30/min., regular pulse rate was 90/min., and blood pressure was 90/60 mm Hg supine and sitting. She had lanugo over the cheek, trunk and the forearm. Her weight was 27 kg, height was 158.5 cm, and body mass index (BMI) was 10.7.

The patient had started dieting two years prior to admission, thinking she was obese. At that time, she weighed 56 kg. She decreased her caloric intake drastically, exercised vigorously, was walking 6-8 kilometers per day and waking up in the middle of the night to jog until exhaustion. She denied any history of induced vomiting, use of laxative or enemas, or binge eating. There was a previous history of similar trial of

decreasing weight at age 16 when her weight decreased from 55 kg to 40 kg over six months, and recovered spontaneously.

Systems review was unremarkable except for a history of gnawing epigastric pain for the previous two years, aggravated by eating and not relieved by hunger. She developed massive upper gastrointestinal bleeding during hospitalization that needed rapid blood transfusion and intensive care unit admission. Gynecological history revealed that the patient had her menarche at age 13, menstrual cycles were regular every 28 days, lasting for 5-6 days with normal blood flow. She had two episodes of secondary amenorrhea, the first at age 16, with the first trial of dieting, and the second at age 18, one year prior to the second trial of dieting. Resumption of menstrual cycles occurred in both times at weights of 47 kg and 45.5 kg, respectively. Psychoanalysis revealed that two years prior to presentation, the patient finished her high school education, was accepted by a university but because of unclear social reasons the family did not allow her to go. This event affected her dramatically. She started to have an obsessive idea of being overweight, which became a morbid fear of any increase in weight. That led her to almost total fasting. She was depressed, anxious, with sleeping disturbances and had bouts of weeping but no psychotic features or cognitive deficit.

Laboratory work-up revealed pancytopenia and the blood film showed acanthocytes. The bone marrow trephine biopsy showed hypocellularity, with replacement of the marrow fatty component by amorphous ground substance, a typical appearance of gelatinous bone marrow. All three main cell lines were in normal proportions (Figure 1A). Upper gastrointestinal endoscopy showed 1×1 cm deep gastric ulcer on the greater curvature, with adherent clot and multiple small linear ulcers. As soon as weight gain was realized, rapid normalization of the hematological abnormalities and complete restoration of normal bone marrow was noticed (Figure 1B).

This was a case of pure restrictive AN.<sup>2</sup> The patient reduced her caloric intake drastically, exercised heavily without going into binge eating or purging behavior. There was an intense fear of gaining weight, she had a distorted body image, and she saw herself as too fat, despite a very low BMI. The patient's gender, social and cultural background are classic for AN.<sup>1</sup> The major event that triggered her illness was being prevented from university study. This is in accordance with the fact that 67% of anorectics have a major event during the year that precedes their illness. The prevalence of personality disorders is high in AN, compared with other types of eating disorders—feelings of ineffectiveness, interpersonal distrust and lack of interceptive awareness are all characteristics of patients with AN. A gelatinous bone marrow and acanthocytes in peripheral blood smears are

characteristic hematological abnormalities which are seen in AN and severe emaciation conditions.<sup>3,4</sup>

Delayed puberty and primary amenorrhea in premenarchic females and secondary amenorrhea in postmenarchic females are characteristics of AN.<sup>5</sup> Amenorrhea may precede, coincide or follow the onset of weight loss. The first episode of amenorrhea in our case occurred after significant weight loss and the second episode preceded the onset of weight loss by a year.

We would like to draw the attention of our colleagues to the existence of anorexia nervosa in our area, with a possible presentation with serious complications, such as pancytopenia, which may complicate this illness and make it life-threatening.

**E. Younis, MD**

**N. Jarrah, MD**

**G. Abdeen, MD**

**A. Raqqad, MD**

**M. Tarawneh, MD, FCAP**

**K. Ajlouni, MD, PhD, FACP**

National Center for Diabetes, Endocrine & Genetic Diseases, and Departments of Internal Medicine and Clinical Pathology, Faculty of Medicine, University of Jordan, Amman, Jordan.

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## Effects of Fasting During Ramadan on Compliance With Medical Treatment

*To the Editor:* Healthy adult Muslims are required to abstain from food and drink, smoking, oral and injectable drugs and sexual intercourse from dawn to sunset during Ramadan, the ninth month of the Islamic calendar. Although there are strict religious rules for dispensation from fasting during sickness, menstruation, pregnancy, breastfeeding and travel, it is a common observation that many Muslims, especially from lower social classes, do not follow these rules.

Recently, researchers have focused on the effects of fasting on healthy people and its risk to patients because of the changes in lifestyle and eating habits during Ramadan.

TABLE 1. Percentage of fasting patients using drugs regularly.

Illness	No. of fasters (%)
High blood pressure (n=24)	18 (75)
Diabetes mellitus (n=6)	1 (16.7)
Cardiac disease (n=7)	2 (28.8)
Musculoskeletal disease (n=11)	7 (63.6)
Goiter (n=19)	10 (52.7)
Peptic ulcer (n=15)	8 (53.3)
Other causes (n=6)	1 (16.7)
Multiple causes (n=10)	4 (40)
Total (n=98)	51 (52)

$P > 0.05$ .

Instead of the usual daily regimen of three meals spread throughout the day, people take two night meals during Ramadan: dinner, right after sunset, and "sahur," the meal taken just before dawn. However, in order to avoid waking up for "sahur" very early in the morning, most people tend to have this second meal just before they go to bed, and the interval between these two meals is very close in most cases. So those who usually eat their heavy meals during the day have to have two heavy meals at night.

Fasting may not negatively affect healthy people, but without doubt, it may harm sick people. Some studies have reported substantial weight loss and increased plasma concentrations of urea and uric acid, consistent with catabolism of body mass.<sup>1</sup> A trial of high carbohydrate consumption after sunset was associated with a fall in blood urea concentration.<sup>2</sup> Some studies of blood lipids have reported raised concentrations of cholesterol and triglycerides, with changes in plasma apolipoproteins.<sup>3</sup>

Fasting may affect the fasting person's treatments as well. Patients who need to take drugs regularly throughout the day should seek their doctor's advice. However, studies show that many patients do not follow this advice. According to one study, more than half of patients cannot keep to their prescribed drugs during Ramadan.<sup>4</sup> However, due to public sensitivity, very little research has been done on the effect of fasting on health.

We carried out this descriptive study in the Batykent region of Ankara, the capital of Turkey, during Ramadan of 1997. Five medical school students (interns) interviewed 346 randomly selected adults of over 15 years from a health center catchment area. There were no significant differences between the age and sex of the respondents. Of the respondents, 6.1% were illiterate and 25.4% were university graduates. With regards to their occupation, the largest group was housewives (43.4%), followed by government employees (30.1%), students (11.0%), unemployed workers (7.8%), workers (4.0%), and self-employed workers (3.8%).

The questionnaire included multiple choice and open-ended questions about sickness, drugs used, feeding habits,

attitudes on treatment, smoking and alcohol consumption. Over 50% of the people interviewed stated that they fast every day or on some days of Ramadan, and 8.1% stated that they could not fast due to the use of drugs, or because they were on a special diet. Of the respondents, 28.3% stated that they were prescribed at least one type of drug for continuous use. The majority of the respondents were over 45 years of age. The most common reasons for using drugs were high blood pressure (24.5%), goiter (19.4%), peptic ulcer (15.3%), cardiac disorders (7.1%), and diabetes mellitus (6.1%).

Of the sick respondents who had to use drugs, and who therefore should not fast, 52% stated that they do fast (Table 1). Of these people, 14% stopped using drugs, 44% took drugs at different times of the day or decreased the number of drugs they used, and 42% stated they did not need to make changes in using their drugs while fasting. Of those who changed the times of their drug taking or decreased their doses, 33.3% consulted their physicians, however, 66.7% made their decisions without consulting any health personnel. Among those who made such changes, 18.2% stated that their complaints were reactivated and they became worse. The majority of the respondents stated that they would accept medical or surgical treatment during Ramadan if they had an emergency.

Of the total people interviewed, 42 (12.1%), who were mostly over 55 years, stated that they were on a diet due to their illnesses. Of these, 21.4% were fasting and had to stop or make changes in their diet programs. One of every three respondents who made such changes stated that their symptoms were reactivated. A remarkable percentage of the respondents (37.3%) were active smokers and 25.1% stated that they drank alcohol. During Ramadan, 59.7% of the smokers and 46% of the alcohol users stated that they stopped smoking or drinking during Ramadan. When the respondents were asked if they would accept any kind of emergency medical treatment while fasting, 15 respondents, half of them over 65 years (4.3%), said they would not.

This study shows that an appreciable number of people who should not fast do fast during Ramadan. Of the 346 adults interviewed, 197 (56.9%) were fasting, but 51 of the fasting people (25.9%) were patients who were using drugs regularly and therefore should not fast. Without doubt, this problem is more evident in the rural parts where people are less educated and more traditional. The negative effects of fasting on these people can be minimized by the efforts of religious leaders, physicians and influential family members.

**Zafer Oztek, MD**  
Professor of Public Health  
**Tulay Bagci, PhD**

Nutritionist-Lecturer  
Faculty of Medicine  
Hacettepe University  
Ankara, Turkey

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