

An Evaluation of Cases with Delirium in a Training Hospital

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ABSTRACT

An evaluation of cases with delirium in a training hospital

Objective: Clinical practices have shown that delirium generally confers more risk in patients who receive treatment in internal medicine and surgery clinics, and particularly in the elderly with central nervous system insufficiency. We, therefore, intended to investigate the frequency of delirium patients and treatment approaches among patients who requested psychiatric consultation in our hospital.

Method: This study was conducted through a retrospective assessment of database and consultation forms of psychiatric consultations performed. Consultation forms prepared by the Department of Psychiatry included questions about socio-demographic characteristics of the patients, their current medical diagnosis and treatment, objective of the consultation request, psychiatric history, mental examination findings, and diagnosis and treatment follow-up plan. All patients were evaluated for the development and persistence of delirium on a daily basis by psychiatry specialist with expertise in delirium assessment, using the Diagnostic Statistical Manual IV (DSM-IV) criteria of the American Psychiatric Association, the reference standard for delirium ratings.

Results: During the study period (1 July 2009 to 30 June 2010), a total of 29410 patients were hospitalized in the Rize Training and Research Hospital. Within the same period, a psychiatric consultation was requested for 405 patients, among them, 106 diagnosed with delirium. Patients with delirium for whom psychiatric consultation was requested made only 0.36% of all hospitalized patients.

Conclusions: 0.36% is a very low rate for delirium diagnosis, which is reportedly observed in 11 to 41% of the general hospital populations, and it may be said that psychiatric consultation requests for delirium are very limited. Our findings necessitate that consultation-liaison psychiatry should be made effective and a multidisciplinary treatment approach should be adopted in general hospitals as soon as possible.

Key words: Delirium, psychiatric consultation, general hospitals

ÖZET

Bir eğitim hastanesinde deliryumlu olguların değerlendirilmesi

Amaç: Deliryumun, dahili ve cerrahi dallarda tedavi gören hastalarda ve özellikle de merkezi sinir sistemi bozukluğu olan yaşlılarda daha fazla risk taşıdığı klinik uygulamalarda gösterilmiştir. Biz de bu nedenle, hastanemizde psikiyatri konsültasyonları içinde deliryumlu olguların görülme sıklığı ve tedavi yaklaşımını değerlendirmeyi amaçladık.

Yöntem: Bu çalışma hastalara uygulanan psikiyatri konsültasyonlarına ait veritabanı ve konsültasyon formlarının geriye dönük olarak değerlendirilmesi ile gerçekleştirildi. İlgili konsültasyon formları, Psikiyatri Anabilim Dalı tarafından hazırlanan ve hastaların sosyodemografik özellikleri, mevcut tıbbi tanı ve tedavisi, konsültasyon isteme amacı, önceki psikiyatrik öyküsü, ruhsal muayene bulguları, tanı ve tedavi-izlem planını içeren sorulardan oluşmakta olup, araştırmacılar tarafından konsültasyon sırasında hastalara uygulanmıştır. DSM-IV'e göre deliryum tanısı alan olgular çalışmaya dahil edilmiştir.

Bulgular: Çalışmanın gerçekleştirildiği 1 Temmuz 2009 - 30 Haziran 2010 tarihleri arasındaki dönemde, Rize Eğitim ve Araştırma Hastanesi'nde yatarak tedavi gören toplam hasta sayısı 29 410 idi. Aynı dönem içinde, psikiyatri konsültasyonu istenen toplam 405 hastadan 106'sına deliryum tanısı konduğu saptandı. Psikiyatri konsültasyonu istenen deliryumlu olgular hastanede yatan tüm hastaların sadece %0.36'nı oluşturmaktaydı.

Sonuç: Genel hastane popülasyonu içerisinde %11-41 gibi oranlarda olduğu bildirilen deliryum için hastanemizdeki %0.36'lık oranın çok düşük olup deliryum tanısı nedeni ile psikiyatri konsültasyonu isteminin çok yetersiz olduğu anlaşılmaktadır. Bu nedenle, genel hastanelerde konsültasyon-iyezon psikiyatrisinin hızla etkin hale getirilmesi ve multidisipliner tedavi yaklaşımlarının benimsenmesi gereklidir.

Anahtar kelimeler: Deliryum, psikiyatrik konsültasyon, genel hastaneler

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INTRODUCTION

Delirium is a syndrome known for more than two thousand years. Its basic characteristics were

identified by Hippocrates for the first time and Celcus distinguished delirium from mania and depression. Galen was the first to make explanations on the causes of delirium (1). Today, the literature includes many

epidemiologic studies on delirium, which is reportedly very common in general hospitals (2-5). These studies indicate that the incidence of delirium, which is a clinical syndrome characterized by sudden impairment of cognitive functions and attention, is 11-41% among patients hospitalized due to a medical disease (6-8). Differences in delirium incidences between the studies result from the selection of patient groups and methodological problems (4,9). However, all studies on this subject emphasize that these rates are much higher in some clinical populations (10-12). Delirium, with a number of organic reasons involved in its etiology is more common following cardiac and hip fracture operations and in patients treated in burn units or due to impairment of central nervous system. In a study conducted on 47 patients who underwent cardiac surgery, 36.2% of the patients developed delirium; they needed more transfusions and the metabolic imbalances were compensated in a much more difficult manner (10). In two studies assessing the risk factors for development of delirium following cardiac surgery, incidence rates of 11.4% and 13.5% were reported for delirium in the advanced age group which forms the significant risk group (11,12). Delirium incidence was reported to be 32% in a prospective study in terminal cancer patients (13). Advanced age, dementia and the high number of concurrent medical diagnoses are among the most emphasized risk factors (14-17). Studies on this field frequently state that delirium picture has significant effects on medical morbidity, hospitalization time, and post-discharge course (16,18). Delirium is therefore a clinical diagnosis that requires emergent medical care and treatment and it may be fatal if not treated. Rize Training and Research Hospital with its 400 beds and wide-ranging equipment is a regional hospital, which offers service to 2 cities (total population: 1.5 million) since 2005 in the Eastern Black Sea Region. Our hospital has cardiovascular intensive care, internal intensive care, angiography units, eleven operating rooms and open heart surgery is performed. We intended to evaluate treatment approaches and the incidence of delirium among psychiatric consultations in hospitalized patients in Rize Training and Research Hospital that has an occupancy rate of 80-90% during almost every month of the year.

MATERIALS AND METHODS

This study was conducted through a retrospective assessment of database and consultation forms of psychiatric consultations performed between July 1st of 2009 to June 30th of 2010 in the Rize Training and Research Hospital. Consultation forms prepared by the department of psychiatry include questions about socio-demographic characteristics of the patients, present medical diagnosis and treatment, objective of the consultation request, psychiatric history, mental examination findings and diagnosis treatment follow-up plan. The forms were administered to patients by the investigators during the consultations. Cases diagnosed with delirium according to the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) were included for the study. Cases with insufficient data and with no definite diagnosis during the consultation were excluded.

RESULTS

During the study period, there was a total of 29410 hospitalized patients in Rize Training and Research Hospital. Within the same period, psychiatric consultation was requested for 405 patients. Of these 405 patients, 106 were diagnosed with delirium. Patients with delirium for whom psychiatric consultation was requested constituted only 0.36% of all hospitalized patients. Delirium diagnoses made 26.17% (n= 106) of

Table 1: Socio-demographic characteristics of cases with delirium

	n	%
Gender		
Male	44	41.6
Female	62	58.4
Education		
Illiterate	32	30.2
Literate	38	35.9
Primary school	29	27.4
High school	5	4.7
University	2	1.8
Marital status		
Married	78	73.6
Single	4	3.8
Widow	24	22.6

psychiatric consultation results. Of the 106 cases diagnosed with delirium according to DSM-IV, 44 (41.6%) were male, and 62 were (58.4%) female. The mean age was 60.5±17.2 (min: 23, max:98). Some socio-demographic characteristics of the cases were presented in table 1 (Table 1).

Internal medicine, neurosurgery and coronary intensive care units were the first three clinics which requested maximum number of consultations for cases with delirium. Distribution of the delirium cases according to the clinics in which they received treatment was presented in table 2 (Table 2).

Table 2: Distribution of the cases with delirium according to the clinics in which they received treatment

Clinics	n	%
Internal Medicine	44	41.5
Breast Diseases	21	19.8
Surgical Intensive Care	9	8.4
Coronary Intensive Care	8	7.5
Orthopedics and Traumatology	7	6.6
General Surgery	5	4.7
Neurology	5	4.7
Neurosurgery	3	2.8
Infectious Diseases	3	2.8
Ear-Nose-Throat Diseases	1	0.9

Table 3: Distribution of the cases with delirium according to their present medical conditions

Medical condition	n	%
Intracerebral events	31	29.3
Cardiovascular disease	19	17.9
Pulmonary disease	18	16.9
Cancer	13	12.5
Endocrinal problems	10	9.5
Renal insufficiency	9	8.4
Gastrointestinal problems	4	3.7
Whole body trauma	2	1.8

An evaluation of the current medical conditions of the delirium patients showed that intracerebral events, cardiovascular diseases, and general body trauma were the three most common events. Distribution of the delirium cases according to their present medical conditions was presented in table 3 (Table 3).

The most common reasons for consultation requests for the delirium patients were agitation, sleeplessness,

Table 4: Distribution of the reasons for consultation requests for cases with delirium

The reason for consultation request	n	%
Agitation	71	66.9
Incompliance with the treatment	16	15.1
Sleeplessness	10	9.6
Dullness, to be withdrawn	7	6.6
Disturbances of consciousness	2	1.8

Table 5: Distribution of treatments recommended for the cases with delirium

Recommended treatment	n	%
Drug	89	83.9
Drug + follow-up	97	90.6
Follow-up	9	8.3

rejection of and incompliance with the treatment. The reasons for consultation requests were presented in table 4 (Table 4).

The recommended treatment approaches for the result of the consultation can be classified as general follow-up consisting of pharmacological, environmental and psychosocial measures [Providing orientation (clock, calendar) control of stimuli, education of family, providing participation in treatment, ensuring adequate fluid and nutrition, etc.].

The treatment options recommended for cases with delirium in the consultations were drug plus follow-up, drug alone and follow-up alone respectively. It was found that the major psychotropic drugs recommended in these patients were antipsychotics (83.9%, n= 89), and haloperidol (80.8%, n= 72) and atypical antipsychotics (19.1%, n= 17) and lorazepam was recommended in eight patients (8.9%), in addition to antipsychotic drugs. Among atypical antipsychotic drugs; risperidone (41.1%, n= 7), olanzapine (29.4%, n= 5) and quetiapine (29.4%, n= 5) has been preferred. Oral and parenteral administration rates of the drugs were 69.7% (n= 62) and 30.3% (n= 27), respectively. It was found that drop was the preferred oral administration form. 19.8% (n= 21) of the delirium cases had a previous psychiatric disease history. Distribution of the treatments recommended for the delirium cases was presented in table 5 (Table 5).

DISCUSSION

Our study which used a cross-sectional method, determined that during this period, psychiatric consultation was requested for 405 patients, of these patients 106 were diagnosed with delirium and patients with delirium for whom psychiatric consultation was requested constituted only 0.36% of all hospitalized patients. This result was contradictory to the literature. In the studies mentioned in the literature, different results related to the incidence of delirium are due to the selection of patient groups and methodological problems (4,9). The ratios obtained from most of the studies in this area were found to be much higher than the ratios in our study. These results show that clinicians do not recognize delirium and symptoms of delirium. Delirium, which remains etiologically unexplained, is a significant neuropsychiatric morbidity, closely related with current treatments and medical conditions of hospitalized patients in general hospitals, especially geriatric patients. Delirium, reported very frequently in general hospitals may be fatal if not diagnosed and treated on time and may lead to prolonged hospitalization (16). Although epidemiologic data of many psychiatric diseases are exactly known, epidemiologic data of delirium has not yet been fully explained (18). Although contradictory results were obtained due to the methodological differences between these studies, it was reported that delirium risk increases with the advanced age and delirium is more common in patients above 55 years of age (19). Similarly, in our study, the mean age of the subjects was 60.5 years. Review of other epidemiologic data (gender, education level and marital status) on delirium cases indicated that there are no significant differences, but there is a need for further studies to be conducted on larger populations (3,4). In a study with 359 cases carried out by Mc Cusker et al. (16), it was concluded that delirium was more common among widow patients staying in a nursing house. In our study, male/female ratio and marital status were relatively similar and the majority of the cases were primary school graduates and literate. These results (even though the limited number of the patients in our study makes any interpretation difficult) are consistent with the low level of education in our region.

Delirium is reported to be observed especially in internal medicine and surgery clinics of general hospitals (1,2); among internal medicine clinics, endocrinology, nephrology, cardiology, breast diseases and neurology, and among surgery clinics, orthopedics and traumatology and neurosurgery. In related studies, it was interesting to note that patients with the highest delirium incidence were among geriatric patients hospitalized in geriatrics services and therefore, studies were performed rather in these services (8,14). In our country, geriatric studies are relatively new and a limited number of geriatric units is servicing. In our study, as consistent with the literature, delirium was observed most commonly in internal medicine, but except for the neurosurgery, no sufficient number of consultations was requested by the surgery clinics, especially by the orthopedics and cardiovascular surgery clinics which were reported to carry high risk for delirium. This may be attributed to the fact that delirium is not known sufficiently by the related branches and the hospital's psychiatric liaison activities are insufficient. It was emphasized that not only big operations but also small operations for cataract and urologic problems carry risk for delirium, especially in geriatric patients with dementia or cognitive dysfunctions and that it should be taken into consideration (7,20). In our study no consultation for delirium was requested by the related services.

The causes of consultation requests include changes in the level of consciousness during the day, disturbance of sleeping-awakening cycles, problems especially related to visual perception, thinking and speaking disorders, sudden mood changes (irritability, agitation, aggression and anxiety) (6,18,21-25). Depressive symptoms, apathy and mutism are more remarkable in some patients. Literature indicates that the most common causes of consultation requests for delirium patients are changes in the level of consciousness; impairment of memory, attention and perception; agitation; sleeplessness, and even a higher number of consultations is requested for hyperactive delirium patients engaging in disturbing behavior in the clinic, and that no sufficient number of consultations is requested for cases with hypoactive delirium

characterized by quiet, depressive symptoms (2,15). Similarly, our study showed that sleeplessness complaints during night and agitation leading to troubles in the clinic were the two most common reasons for consultation requests. Very few cases with hypoactive delirium were reported. Therefore, it can be concluded that hypoactive delirium cases are disregarded, not sufficiently known and carry a risk with respect to treatment plus follow-up. Moreover it is also noteworthy that changes in the level of consciousness, which is one of the most fundamental clinical signs of delirium and which is among the most common reasons for consultation requests in the literature, was of the last rank in our study. This result suggests that clinical signs of delirium have not yet been sufficiently identified.

There are two fundamental principles of delirium treatment: 1) searching and explaining the organic causes of delirium; 2) approaches for the treatment of symptoms. Therefore, it was stated in the studies that delirium treatment should be multidisciplinary and the treatment team and all health care personnel besides physicians should be informed about delirium (1,2,22). Sedation may be required for delirium patients (especially hyperactive ones) against disturbances of thinking and perception and the risk of engaging in behaviors that will harm others and the patient himself. The studies emphasize that when choosing a drug for the purpose of sedation, the drug's side effects and probability of exacerbating the delirium picture and incompatibilities with the other drugs the patient is taking should be taken into consideration (2,22). It was reported that antipsychotics and benzodiazepines might be preferred especially in delirium patients who develop agitation (2). One of the most preferred antipsychotics is haloperidol, a classical antipsychotic. A lower dose of haloperidol, which has a significant effect on agitation, is recommended for the elderly (1,2,22,26). The dose of haloperidol, available for oral and parenteral administration, may be increased incrementally until agitation is taken under control. Some recent studies have indicated that atypical antipsychotics can be used safely in patients who develop delirium (2,22). Especially olanzapine,

risperidone, ziprasidone and quetiapine are notable atypical antipsychotics (27-31). Benzodiazepines are recommended for treatment of patients who develop delirium due to withdrawal of alcohol and benzodiazepine, and hepatic failure (2). Because of their negative effects on cognitive functions, use of benzodiazepines other than sedative-hypnotic withdrawal delirium is limited to the situation that appropriate doses of antipsychotics cannot be used due to their tolerance problems. Choosing of benzodiazepines that have short half-life and no active metabolite was suggested for treatment. Lorezapam and diazepam are the most widely used benzodiazepines. Similarly, low doses of lorazepam was suggested in addition to antipsychotics for eight cases in our study.

In our study, drug plus follow-up were the most common treatment approach. Antipsychotics were recommended for 89 cases; 72 cases received haloperidol and 17 received atypical antipsychotics. According to this result, the use of atypical antipsychotics for treatment of delirium, which is popular over the recent years, is not significant in our clinical practices. Similar results were obtained in other studies conducted in our country (23). With respect to drug administration, the most preferred administration route was oral administration followed by the parenteral administration, as consistent with the literature. Drop was the most preferred oral form. In the studies, it has been emphasized that drop form may be preferred for easy administration and for reduction of side effects as a result of its use in lower dosages. Recommendations for follow-up of the patients with delirium included close follow-up, monitoring of daily electrolyte changes, diet, nursing care, hospitalizing in a silent and dim room, limitation of the number of visitors, securing the patient to the bed, etc. This was also consistent with the literature (2,22).

In our study, 19.8% of the patients had a previous psychiatric disease. A review of the studies on this subject gave different results (1,2); in some studies the incidence of delirium was higher in delirium patients who had a previous history of psychiatric diseases while in others, the opposite was true (3,4). Similarly, the role

of the concurrent psycho stressor factors in the development of delirium has not yet been fully described. It can be said that there is need for further studies on larger populations with longer follow-up periods.

Consequently, 0.36% is a very low rate for delirium, which is reportedly observed in 11-41% of the general hospital populations, and the psychiatric consultation requests for delirium are very limited. This necessitates the consultation-liaison psychiatry to be made effective

and the multidisciplinary treatment approach to be adopted in general hospitals as soon as possible. Another important conclusion is that there is a need for valid and integrated scale to eliminate methodological differences and provide consensus for studies on delirium. We hope that our study which was conducted on a very limited number of patients will provide a database and shed light to the other studies conducted in the future.

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