

## Uzroci i dinamika tjelesnih komplikacija/neželjenih događaja tijekom hospitalizacije bolesnika s demencijom

### */ The Frequency and Causes of Physical Complications/ Adverse Events During the Hospitalization of Patients with Dementia*

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*Uvod:* Osobe s demencijom osjetljivije su na razvoj različitih komplikacija/neželjenih događaja u odnosu na osobe iste dobne skupine bez demencije. Češće se zaprimaju u bolnicu, gdje imaju veću prevalenciju komplikacija i povećanu smrtnost. *Cilj:* ispitati učestalost hitnih premještaja bolesnika s demencijom zbog tjelesnih komplikacija iz Klinike za psihijatriju Vrapče na somatske odjele drugih bolnica. *Metode:* U ovom retrospektivnom istraživanju analizirali smo podatke bolesnika s demencijom koji su liječeni od 1. siječnja do 31. kolovoza 2019. godine na Odjelu psihogerijatrije u Klinici za psihijatriju Vrapče s naglaskom na vrijeme trajanja hospitalizacije i razloge otpusta koji su doveli do premještaja s Odjela. *Rezultati:* Od siječnja do kraja kolovoza 2019. godine na Odjel psihogerijatrije u Klinici zaprimljeno je ukupno 256 bolesnika (67,97 % žena i 32,03 % muškaraca). Prosječna dob žena bila je 80,5, a muškaraca 76,4 godina. Premješteno na somatski odjel (bolnicu) bilo je 28 % bolesnika (40,24 % muškaraca, 23 % žena), a od toga 39 % u prvih sedam dana od dolaska u bolnicu. Pneumonija je bila vodeća somatska dijagnoza kod 19 % premještenih. Prosječno trajanje hospitalizacije među svim ispitanicima bilo je kod muškaraca 33,08 dana, a kod žena 36,47 dana. U istom je razdoblju na Odjelu preminulo 10,93 % bolesnika (12,2 % muškaraca i 10,34 % žena), od toga 25 % unutar pet dana od dolaska u bolnicu. Zbog neujednačenosti pisanja redoslijeda otpusnih dijagnoza, za detaljniju analizu razloga premještaja, bit će potrebno detaljnije ispitivanje. *Zaključak:* Najteža tjelesna pogoršanja i smrtni ishodi javljali su se u prvih tjedan dana od dolaska u bolnicu. Rezultati ukazuju na nužnost somatske obrade i liječenja bolesnika s demencijom prije nego budu hospitalizirani na psihijatrijskom odjelu.

*/ Introduction: Patients with dementia are more susceptible to the development of various complications/adverse events than people of the same age group without dementia. They are more often admitted to hospitals, where they have a higher prevalence of complications and higher mortality. Aim: To examine the frequency of physical complications that require emergency transfers of patients with dementia from the psychogeriatric ward of the University Psychiatric Hospital Vrapče (UPHV) to somatic wards of other hospitals. Patients and methods: In this retrospective study we analysed the data of patients with dementia who received medical treatment at the psychogeriatric ward of the University Psychiatric Hospital Vrapče between 1 January and 31 August 2019, with special emphasis on the treatment length and reasons for discharge due to compromised medical condition. Results: 256 patients (67.97% female, 32.03% male) were admitted to the psychogeriatric ward of the UPHV. The average age was 80.5 years for female and 76.4 years for male patients. 28% of patients (23% of all female and 40.24% of all male patients) were transferred to somatic wards of other hospitals. 39% of all transferred patients were transferred within the first seven days after the admission to the UPHV. Pneumonia was*

the main somatic diagnosis among 19% of all transferred patients. The mean duration of hospitalization was 36.47 days for female patients and 33.08 days for male patients. 10.93% of all admitted patients (10.34% of all female and 12.2% of all male patients) died at the psychogeriatric ward, 25% of whom died within the first five days after the admission to the UPHV. Due to a lack of uniform order of registering diagnoses, a more detailed examination of reasons for transfers will be required. Conclusion: The most severe deteriorations in the physical condition and fatal outcomes occurred within the first week after the admission to the UPHV. The results indicate the necessity of somatic treatment of dementia patients before admission to a psychiatric ward.

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## UVOD

Zbog starenja pučanstva, raste i udio starije populacije u bolnicama. Uz stariju dobnu skupinu gotovo redovito je vezan i veći broj kroničnih somatskih bolesti. Kod osoba s demencijom, u odnosu na istu dobnu skupinu bez demencije, još je veća učestalost komorbiditeta (1,2).

Kod osoba s demencijom početak somatske dekompenzacije može dovesti do psihičkog pogoršanja (npr. delirantnog stanja) i rezultirati hospitalizacijom na akutnom psihijatrijskom odjelu (3,4). S obzirom da kod osoba s demencijom somatska dekompenzacija može imati atipičnu kliničku sliku (npr. pneumonija bez febriliteta) i razvijati se vrlo brzo, neophodno je na vrijeme prepoznati problem (5). Potrebno je naglasiti da kod ovih bolesnika, čak i diskretna promjena u okruženju, a osobito dolazak na akutni odjel, može dodatno nepovoljno utjecati na psihičko i somatsko stanje bolesnika, uzrokovati komplikacije, intenzivno somatsko liječenje, dužu hospitalizaciju i veće troškove (1,2,6).

## INTRODUCTION

Due to the aging of the population, the proportion of the elderly in hospitals is increasing. The elderly population is also often associated with a greater number of chronic somatic diseases, especially for patients suffering from dementia (1,2). For dementia patients, the onset of somatic decompensation may lead to mental decompensation (e.g. delirious conditions) and result in hospitalization in an acute psychiatric ward (3,4). Having in mind that somatic decompensations of dementia patients can have an atypical clinical presentation (e.g. pneumonia without febrility) and can develop very quickly, it is necessary to identify the condition timely (5). It should be emphasized that in these patients, even a discrete environmental change, and especially admission to the acute ward, can additionally adversely affect the mental and somatic condition of the patient, causing somatic complications requiring intensive somatic treatment, longer hospitalization, and higher costs (1,2,6).

## BOLESNIC I METODE

U ovom retrospektivnom istraživanju analizirali smo podatke o bolesnicima s demencijom koji su liječeni na Odjelu psihogerijatrije Klinike za psihijatriju Vrapče od 1. siječnja do 31. kolovoza 2019. godine, s posebnim naglaskom na razlog pogoršanog somatskog stanja koje je zahtijevalo premještaj. Iz medicinske dokumentacije se evidentirala dob, spol, trajanje aktualne hospitalizacije, ishod liječenja. Koristila se deskriptivna statistička metoda.

## REZULTATI

Od početka siječnja do kraja kolovoza 2019. godine na Odjel psihogerijatrije Zavoda za biologijsku psihijatriju Klinike za psihijatriju Vrapče zaprimljeno je ukupno 256 bolesnika: 174 žene (67,97 %) i 82 muškarca (32,03 %). Prosječna dob žena bila je 80,5 godina (od 55 do 97 godina), a muškaraca 76,4 godina (od 56 do 95 godina).

Zbog dekompenziranih tjelesnih stanja koja su zahtijevala premještaj na somatski odjel (druhu bolnicu) u promatranom je razdoblju premješteno 28 % svih bolesnika (40,2 % muškaraca i 23 % žena), a od toga 39 % u prvih sedam dana od dolaska u bolnicu. Prosječno trajanje hospitalizacije u slučaju premještaja u somatsku bolnicu bilo je kod muškaraca 13,7 dana (događalo se od 1. do 60. dana), a kod žena 18,85 dana (događalo se od 1. do 67. dana). Prosječno trajanje hospitalizacije kod svih bolesnika na Odjelu psihogerijatrije u tom je razdoblju bilo kod muškaraca 33,08 dana, a kod žena 36,47 dana.

U istom je razdoblju na Odjelu zbog posljedica komorbiditeta sa somatskim bolestima preminulo ukupno 28 bolesnika (10,93 %; od toga 12,2 % muškaraca i 10,34 % žena). Od toga je u prvih pet dana od dolaska u bolnicu preminulo 25 %.

## PATIENTS AND METHODS

In this retrospective study, we analysed the data of the patients with dementia hospitalized on the psychogeriatric ward of the University Psychiatric Hospital Vrapče between 1 January and 31 August 2019, with special emphasis on the reason for the deterioration of the somatic condition which required transfer to somatic wards of other hospitals. The following variables were extracted from the patients' medical notes: age, sex, length of the current hospitalization, and the outcome of treatment. A descriptive statistical method was used.

## RESULTS

Between 1 January and 31 August 2019, a total of 256 patients were admitted to the psychogeriatric ward at the UPHV. 174 were female (67.97%) and 83 male (32.03%). The average age was 80.5 years (55 to 97 years) for female patients and 76.4 years (56 to 95 years) for male patients.

28% of all admitted patients (40.2% of all male and 23% of all female patients) were transferred to somatic wards in other hospitals due to the decompensated physical condition, and 39% of those transfers occurred within the first seven days after the admission to the UPHV. The average hospitalization duration of transferred patients before the transfer was 13.7 days for male patients (the shortest was 1 day and the longest was 60 days) and 18.85 days for female patients (the shortest was 1 day and the longest was 67 days). The average duration of hospitalization for all patients in the observed period at the psychogeriatric ward was 33.08 days for male and 36.47 for female patients.

In the same period, a total of 28 patients (10.93%) died at the psychogeriatric ward (10.34% of all female patients and 12.2% of all male patients) as a result of the deterioration of the physical condition, 25% of whom died within the first five days after the admission to the UPHV.

Prema trenutačnim podacima upala pluća bila je uzrok premještaja u somatsku bolnicu u 19 % slučajeva.

According to current data, pneumonia was the main reason for patient transfer in 19% of all transferred patients.

## DISKUSIJA

Ovim smo istraživanjem ustanovili da se na Odjel psihogerijatrije zaprimi više žena s demencijom u odnosu na muškarce (čak dvostruko) što je bilo za očekivati s obzirom na njihovu duži životni vijek i veću učestalost demencije (7,8). To je potvrdila i nešto veća prosječna dob ispitivanih žena, iako se dobni raspon nije bitno razlikovao među spolovima.

Kod muških bolesnika s demencijom, zbog komorbiditeta i razvijenih somatskih komplikacija bila je dvostruko veća učestalost upućivanja u somatske bolnice i nešto veći broj preminulih u odnosu na žene. To, međutim, ne znači da se kod žena javljalo manje somatskih komplikacija, već da je ishod liječenja bio bolji. Chen i sur. navode da su komplikacije i smrtnost kod hospitaliziranih muškaraca s demencijom 2,9 puta veći u odnosu na žene. Osim muškog spola, ostali čimbenici koji povećavaju smrtnost bolesnika s demencijom nakon njihovog dolaska u bolnicu su starija dob, delirantni simptomi i deluzije, a najčešći uzrok smrti je pneumonija (9).

U promatranom razdoblju, zbog pogoršanja tjelesnog stanja koje je bilo toliko značajno da je zahtijevalo premještaj u somatsku bolnicu, premješteno je 28 % bolesnika, od toga čak 39 % u prvih sedam dana od početka hospitalizacije, a preminulo je 10,9 % bolesnika, od toga 25 % unutar prvih pet dana od početka hospitalizacije. Ovi podatci potvrđuju da je vrlo često u podlozi delirantnih stanja, koja su najčešća indikacija za prijam dementnih bolesnika na psihijatrijski odjel, somatska dekompenzacija koja u ovoj populaciji može imati atipičnu kliničku sliku i brzi razvoj. U literaturi se navodi da bolesnici s demencijom koji su podvrgnuti operaciji imaju više postoperacijskih komplikacija koje je posebno teško prepoznati u ra-

## DISCUSSION

The study showed that more women with dementia than men (more than twice) were admitted to the psychogeriatric ward, which was expected due to their longer life expectancy and higher incidence of dementia (7,8). This was also confirmed by the slightly higher average age among female patients, although the age span did not significantly differ between the sexes.

Male dementia patients were twice more likely to be transferred to somatic wards of other hospitals due to the comorbidities and somatic complications and also had a higher number of deaths than female dementia patients. However, female patients did not have fewer somatic complications, but the outcome of treatment seemed to be better. Chen et al. state that the complications and mortality of hospitalized male dementia patients were 2.9 times higher than those of female patients. Other factors associated with higher mortality of the dementia patients are older age, delirious symptoms and delusions, and pneumonia as the most common cause of death (9).

In the observed period, we found that 28% of all patients were transferred to other hospitals due to a severe deterioration of their physical condition, 39% of whom were transferred within the first seven days after the admission to the psychogeriatric ward. 10.9% of all admitted patients died, 25% of whom died within the first five days of hospitalization. These findings confirm that somatic deterioration is very often underlying delirious conditions, which are the most common indication for the admission of dementia patients to psychiatric wards. Somatic deterioration in this group of patients can have an atypical clinical presentation and rapid development, and those patients can also develop multiple postoperative complications that are particular-

nim fazama bolesti (npr. pneumonija, upala mokraćnog sustava, akutno renalno zatajenje, septikemija) (5).

Takacs i sur. u svom radu navode da je 44 % bolesnika s demencijom nakon dolaska na psihijatrijski odjel zbog tjelesnog pogoršanja moralo bilo premješteno na somatski odjel, od toga 12 % unutar prva tri dana, odnosno da je 5 % preminulo brzo nakon prijama na psihijatrijski odjel. Zaključuju da su kod ove skupine bolesnika prije prijama na psihijatrijski odjel neophodni tjelesni pregled i laboratorijska obrada (10).

Zaista, ovi podatci upozoravaju na potrebu dijagnostičke obrade i liječenja dementnih bolesnika u somatskim bolnicama prije hospitalizacije na psihijatrijskom odjelu. Sam pregled bolesnika s demencijom u hitnoj internističkoj, neurološkoj ili kirurškoj ambulanti, nažalost nije garancija da je somatsko stanje bolesnika stabilno te vrlo često bude predskazatelj nepovoljnog tijeka liječenja nakon što bolesnik bude hospitaliziran na psihijatrijskom odjelu. Iako se rutinskom laboratorijskom obradom odmah nakon dolaska na odjel, detaljnim somatskim pregledom i opservacijom bolesnika dijagnosticiraju somatska stanja, često zbog brzog razvoja kliničke slike dolazi do tjelesnih dekompenzacija.

U literaturi se također navodi da starije osobe općenito, kada su hospitalizirane, imaju povećan rizik od pojave hospitalnih komplikacija (padovi, upala pluća, upala mokraćnog sustava, delirantna stanja) (6). Komplikacije dovode do dužeg zadržavanja u bolnici, što opet povećava rizik od novih komplikacija te na kraju lošeg ishoda liječenja, ali i većih troškova. Učinak komorbiditetnih dijagnoza se zbraja, a među svim dijagnozama ključna je demencija. Bolesnici s demencijom imaju gotovo dvostruko više komplikacija u odnosu na bolesnike bez demencije (6). Također se u literaturi navodi mogući utjecaj benzodiazepina i antipsihotika na veću sklonost razvoju pneumonije kod hospitaliziranih bolesnika s demencijom, pa je

ly difficult to identify in the early stages of the disease (e.g. pneumonia, urinary tract inflammation, acute renal failure, septicaemia) (5).

Takacs et al. found that 44% of patients with dementia had to be transferred to somatic wards after being admitted to the psychiatric ward, 12% within the first three days, with 5% of them dying shortly after the admission to the psychiatric ward. They conclude that for this group of patients, physical examination and laboratory processing need to be completed before admission to psychiatric wards (10).

Indeed, these data point to the need for the diagnostic treatment and treatment of dementia patients in somatic hospitals prior to hospitalization on a psychiatric ward. Examination of patients with dementia in an emergency clinic for internal medicine, neurology, or surgery unfortunately does not guarantee that the somatic condition of the patient is stable, which is often a predictor of an unfavourable course of treatment after the patient has been hospitalized in a psychiatric ward. Although somatic conditions are diagnosed immediately upon arrival on the ward in routine laboratory processing and detailed physical examination and patient observation, physical decompensation often occurs due to the rapid development of the clinical picture. Studies have found that the elderly population, when hospitalized, is at an increased risk of hospital complications (falls, pneumonia, urinary tract infections, delirious conditions) (6). Complications lead to longer hospitalization, which again increases the risk of new complications and ultimately poor treatment outcome and higher costs. When the effects of comorbidity diagnoses are summed up, dementia is of key importance among all diagnoses. Patients with dementia have almost twice as many complications than patients without dementia (6). The potential impact of benzodiazepines and antipsychotics on the greater risk for developing pneumonia in hospitalized patients with dementia has also been reported, so it is certainly necessary to consider the cost-benefit of their use (11,12). Patients

svakako neophodno uzeti u obzir omjer koristi i štete njihove primjene (11,12). Bolesnici s demencijom su specifična psihijatrijska skupina koja zahtijeva oprezan terapijski pristup zbog njihove dobi, čestog komorbiditeta i uzimanja različitih medikamenata, većeg rizika od nuspojava i interakcije među lijekovima (2).

Zbog svega toga preporuča se ostaviti hospitalizaciju samo za slučajeve kada ambulantno liječenje ne daje rezultate, jer svaki dolazak bolesnika s demencijom u bolnicu otvara mogućnosti neželjenih događaja (2,4,13-16).

U ovom smo istraživanju planirali analizirati koja su somatska stanja zahtijevala premještanje na somatski odjel. Dosadašnjom obradom podataka upala pluća je u 19 % slučajeva bila uzrok premještanja u somatsku bolnicu. Od ostalih uzroka navodila se respiratorna insuficijencija, upala mokraćnog sustava, sepsa, renalno zatajenje... Međutim, zbog velikog broja psihijatrijskih dijagnoza koje prethode somatskim, a također i neujednačenosti upisivanja redoslijeda dijagnoza nismo uspjeli dobiti relevantni podatak zbog kakvog somatskog stanja je bolesnik premješten. Zbog toga se planira provesti iscrpnije istraživanje kojim bi se, osim detaljnije analize prve i ostalih komorbiditetnih dijagnoza, evidentirala indikacija za hospitalizaciju, zatim odakle pacijent dolazi na prijam (od kuće, iz doma, nakon pregleda ili liječenja u somatskoj bolnici), vrsta i težina demencije te vrste ordiniranih psihofarmaka tijekom hospitalizacije.

## ZAKLJUČAK

U bolesnika s demencijom se često u kratkom razdoblju od dolaska u bolnicu pojave tjelesne dekompenzacije koje zahtijevaju njihov premještanje na somatski odjel ili dovode do smrtnog ishoda. Rezultati ovog rada naglašavaju važnost specifičnog odnosa somatskih komorbiditeta kod bolesnika s demencijom u odnosu na drugu populaciju, teže prepoznavanje početka komplikacija, te značajno bržu progresiju simptoma.

with dementia are a specific psychiatric group, requiring a cautious therapeutic approach which takes into account their age, frequent comorbidities, usage of various medications, increased risk of side effects, and drug interaction (2).

Due to all these reasons, it is recommended to consider hospitalization only in cases where outpatient treatment does not produce results, as each hospital admission of patients with dementia increases the risk of adverse events (2,4,13-16).

In this study, we planned to assess which somatic conditions required transfer from psychiatric to somatic wards. Available data showed pneumonia was the cause of 19% of transfers to somatic wards of other hospitals. Other causes include respiratory failure, urinary tract infections, sepsis, renal failure, etc. However, due to the large number of psychiatric diagnoses preceding somatic ones and lack of uniform order of registering diagnoses, we were unable to obtain relevant information on the transferred patient's somatic status. Therefore, there are plans to conduct a more comprehensive study which would include a more detailed analysis of the first diagnosis and other comorbid diagnoses, indications for hospitalization, information on where the patient was referred to hospital from (home, retirement home, after examination or treatment in a somatic hospital), the type and severity of dementia, and types of psychopharmaceuticals administered during hospitalization.

## CONCLUSION

In dementia patients, physical decompensations can often occur within a short period of time after their admission to hospital, which then require the patient's transferral to a somatic ward or lead to a fatal outcome. The results of this study emphasize the importance of a specific relationship between somatic comorbidities in dementia patients when compared to other populations, more difficult detection of the onset of complications, and significantly faster progression of symptoms.

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