

# Javljanje sumanutosti u bolesnika s demencijom – pregled literature

## */ Occurrence of Delusions in Patients with Dementia – Literature Review*

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*Cilj:* Pregled literature koja se odnosi na javljanje različitih tipova sumanutosti u osoba s demencijom i njihovo liječenje. *Metode:* Literatura je pretraživana korištenjem PubMed-a. *Pregled literature:* Kod starijih osoba s demencijom često se javljaju psihotični simptomi kao što su sumanutosti, ali sadržaj sumanutosti u starijih osoba razlikuje se od sumanutosti kod mlađih pojedinaca. Analiza sumanutosti i halucinacija treba ispitati alternativne etiologije, uključujući pogrešnu dijagnozu i nesporazum, pogrešno tumačenje stvarnosti zbog kognitivnih gubitaka, osjetilne deprivacije i gubitka vida, neodređenih senzacija, delirija i medicinskih uzroka. Nefarmakološki tretmani učestalo proizlaze iz etiologije kao što su poboljšanje osjetilnih funkcija putem slušnih pomagala ili naočala, provođenje stimulacije, mijenjanje ranijih situacija kod kojih postoji sklonost pogrešnom tumačenju (npr. odrazi u prozorima), ili izbjegavanje pogrešnog tumačenja (npr. osiguravanjem da je odgovarajući objekt dostupan te da nema osjećaja gubitka ili pokradenosti). *Zaključci:* Podatci iz literature pokazali su da se kod osoba s demencijom često javljaju psihotični simptomi kao što su sumanutosti, ali su također pokazali razlike u učestalosti različitih tipova deluzija u demenciji. Osim farmakoterapije, bolje razumijevanje etiologije pogrešnog tumačenja stvarnosti (zbog kognitivnih gubitaka, osjetilne deprivacije i gubitka vida, itd.) pokazuje važnost nefarmakoloških oblika liječenja koji često proizlaze izravno iz etiologije ovakvih simptoma. Daljnja istraživanja potrebna su za stjecanje boljeg razumijevanja etiologije sumanutosti u osoba s demencijom, te za pronalaženje učinkovitog liječenja.

*/ Aim: to review literature regarding the occurrence of different types of delusions in dementia and their treatment. Methods: The literature search was conducted using PubMed. Review of literature: The elderly with dementing illnesses often present with psychotic symptoms such as delusions, but the thematic content of delusions in the elderly differs from that of delusions expressed by younger individuals. An analysis of delusions and hallucinations must examine alternative etiologies, including misdiagnosis and misunderstanding, the misinterpretation of reality due to cognitive losses, sensory deprivation and vision loss, ambiguous sensations, and delirium and medical causes. Nonpharmacologic treatments frequently follow directly from etiology, such as improving sensory function via hearing aids or eyeglasses, providing stimulation, changing situations prone to misinterpretation (e.g. reflections in windows), or circumventing misinterpretations (e.g. ensuring that an equivalent object is available so there is no sense of loss or theft). Conclusions: The data from literature showed that people with dementia often present with psychotic symptoms such as delusions but also revealed differences in frequencies of different types of delusions in dementia. Apart from pharmacological treatment, a better understanding of the etiology of misinterpretation of reality (due to cognitive losses, sensory deprivation, vision loss, etc.) reveals the importance of nonpharmacologic treatments that frequently follow directly from the etiology of such symptoms. Further studies are necessary for a better understanding of the etiology of delusions in people with dementia, as well as finding effective treatment.*

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Alzheimerova bolest (AB) povezana je s kognitivnim i funkcionalnim oštećenjem, kao i s neuropsihijatrijskim posljedicama, uključujući psihotične simptome kao što su sumanutosti i halucinacije. Čvrsti dokazi podržavaju potrebu za istraživanjem sumanutosti odvojeno od halucinacija (1). Psihoza u AB ukazuje na ozbiljniji fenotip, s bržim kognitivnim propadanjem koje počinje čak i prije javljanja psihoze (2). Sumanutosti su uobičajene, onesposobljavajuće i perzistentne u tijeku demencije (3). Dok sumanutosti u AB odgovaraju fenotipu različitom od AB bez sumanutosti, podtipovi sumanutosti mogu također definirati daljnje razlike kliničkih entiteta. Persekutorne sumanutosti mogu se javiti ranije tijekom bolesti i imaju značajniju genetsku komponentu nego sumanutosti pogrešnog prepoznavanja, koje su povezane s rastućim kognitivnim oštećenjem i uznapređovalom demencijom (1). Psihotični simptomi, koji se sastoje od sumanutosti i halucinacija javljaju se u oko polovice pojedinaca s AB (AB sa psihozom, AB+P) i takvi pojedinci imaju izraženiju agitiranost, agresivnost, depresiju, funkcionalno oštećenje i mortalitet nego pojedinci bez psihoze (AB-P) (4). Rezultati pregleda istraživanja objavljenih od 1990. do 2001. godine, koja se bave epidemiologijom, fenomenologijom, tijekom, etiologijom, procjenom i liječenjem sumanutosti i halucinacija u AB pokazali su prevalenciju sumanutosti u pacijenata s AB u rasponu od 16 do 70 % u

**INTRODUCTION**

Alzheimer's disease (AD) is associated with cognitive and functional impairment as well as neuropsychiatric sequelae, including psychotic symptoms such as delusions and hallucinations. Strong evidence supports the need to study delusions separate from hallucinations (1). Psychosis in AD indicates a more severe phenotype, with more rapid cognitive decline beginning even before psychosis onset (2). Delusions are common, disabling, and persistent in the course of dementia (3). While delusions in AD correspond to a phenotype distinct from AD without delusions, subtypes of delusions may also define further distinct clinical entities. Persecutory delusions may occur earlier in the illness and have a more significant genetic component than misidentification delusions, which are associated with increased cognitive impairment and advanced dementia (1). Psychotic symptoms, comprised of delusions and hallucinations, occur in about half of individuals with Alzheimer's disease (AD with psychosis, AD+P), and these individuals have greater agitation, aggression, depression, functional impairment, and mortality than individuals without psychosis (AD-P) (4). The results of a review of studies published from 1990 to 2001 that address the epidemiology, phenomenology, course, etiology, assessment, and treatment of delusions and hallucinations in Alzheimer's disease showed the prevalence of delusions in Alzheimer's disease patients

pregledanim radovima, i prevalenciju halucinacija u rasponu od 4 do 76 %. Sumanutosti i halucinacije imali su sklonost perzistiranju tijekom vremena te čestom ponavljanju u tijeku AB (5). Premda je točna etiopatogeneza AB+P nejasna, polje genomike koje se brzo razvija nastavlja širiti naše razumijevanje ove bolesti. Nekoliko neovisnih istraživanja pokazalo je obiteljsku agregaciju i nasljednost AB+P (4). Neuroslikovna istraživanja (*neuroimaging*) ukazuju da osobe s AB+P pokazuju veća kortikalna sinaptička oštećenja nego osobe s AB bez psihoze, što se odražava u obliku reduciranog volumena sive tvari, reduciranog regionalnog protoka krvi i reduciranog regionalnog metabolizma glukoze; *neuroimaging* i dostupni post mortem dokazi dodatno ukazuju da su oštećenja kod AB+P, u odnosu na pojedince s AB bez psihoze, lokalizirana u neokorteksu, prije nego u medijalnom temporalnom režnju, dok neuropatološka istraživanja pružaju konzistentne dokaze o ubrzanom nakupljanju hiperfosforiliranog s mikrotubulima povezanog tau proteina u AB+P (2).

Cilj ovog članka je pregled literature koja se odnosi na javljanje različitih tipova sumanutosti u demenciji i njihovo liječenje.

## METODE

Literatura je pretraživana korištenjem PubMed-a.

## PREGLED LITERATURE

Sumanute ideje su česte među bolesnicima s AB i mogu se konceptualno povezati s deficitima pamćenja (ne može se sjetiti točnog podatka što dovodi do netočnog vjerovanja) ili lošeg uvida (ne može shvatiti nelogičnost vjerovanja). Sumanutosti u AB su povezane s disfunkcijom u specifičnim frontalnim i temporalnim kortikalnim regijama (6).

ranging from 16 to 70% in the reviewed reports, and the prevalence of hallucinations ranging from 4 to 76%. Delusions and hallucinations tended to persist over time and recur often during the course of Alzheimer's disease (5). Although the exact etiopathogenesis of AD+P is unclear, the rapidly developing field of genomics continues to expand our understanding of this disease. Several independent studies have demonstrated familial aggregation and heritability of AD+P (4).

Neuroimaging studies suggest that AD+P subjects demonstrate greater cortical synaptic impairments than AD subjects without psychosis, which is reflected in reduced grey matter volume, reduced regional blood flow, and reduced regional glucose metabolism; neuroimaging and available post-mortem evidence further indicate that the impairments in AD+P, relative to AD subjects without psychosis, are localized to the neocortex rather than the medial temporal lobe, while neuropathologic studies provide consistent evidence of accelerated accumulation of hyperphosphorylated microtubule associated protein tau in AD+P (2).

The aim of this article is to review literature regarding the occurrence of different types of delusions in dementia and their treatment.

## METHODS

The literature search was conducted using PubMed.

## REVIEW OF LITERATURE

Delusional thoughts are common among patients with Alzheimer's disease (AD) and may be conceptually linked to memory deficits (inability to recall accurate information, which leads to inaccurate beliefs) and poor insight (inability to appreciate the illogic of beliefs). Delusions in AD are associated with dysfunc-

Sumanutosti mogu komplicirati praktično sve moždane poremećaje. One mogu biti dramatične i bizarne. Primjer je takozvana sumanutost trudnoće. Pojava psihoze poput sumanutosti trudnoće može u nekim slučajevima biti obilježje demencije (7). Kod starijih osoba s demencijom često se javljaju psihotični simptomi kao što su sumanutosti, ali sadržaj sumanutosti u starijih osoba razlikuje se od sumanutosti kod mlađih pojedinaca (8).

U novijem pregledu literature u vezi sa sumanutošću krađe, najprevalentnije sumanutosti u starijih osoba, autor je naveo da razumijevanje podrijetla sumanutosti krađe – višestruki gubitci, pokušaji da se ti gubitci pripišu vanjskom izvoru, pokušaji ponovnog proživljavanja sretnije prošlosti – pomaže u osmišljavanju odgovora koji su utješni za pacijenta, a obraćanje pažnje podražajima koji potiču sumanutost pomaže u ograničavanju njenog javljanja; također, distres koji često prati sumanutost da je osoba pokradena može biti smanjen unaprjeđivanjem domova za starije osobe u pogledu rukovanja osobnim stvarima, korekcijom osjetilnih deficita i provođenjem aktivnosti koji skreću pažnju od usamljenosti i, nadalje, razumijevanje kako sumanuto mišljenje može nastati iz osjetilnih i kognitivnih deficita kritično je za empatično provođenje skrbi te također za smanjenje opterećenja skrbnika (8).

Istraživanja podržavaju da sumanutosti u AB i shizofreniji dijele etiologiju. Egzekutivni/frontalni deficiti su česti u oba poremećaja i nagovještaju nastanak simptoma.

Persekutorne sumanutosti javljaju se rano tijekom bolesti i povezane su s neurokemijskim i neuropatološkim promjenama u frontostriatnim krugovima, dok su sumanutosti pogrešnog prepoznavanja povezane s većim globalnim kognitivnim deficitom i uznapredovalom limbičkom patologijom. Nejasno je jesu li ova dva podtipa fenomenološki i biološki različita ili su dio kontinuuma pri čemu

tion in specific frontal and temporal cortical regions (6).

Delusions can complicate practically all brain disorders. They may be dramatic and bizarre. One example is the so-called delusion of pregnancy. Psychotic phenomena such as delusion of pregnancy may be a feature in some cases of dementia (7). The elderly with dementing illnesses often present with psychotic symptoms such as delusions, but the thematic content of delusions in the elderly differs from that of delusions expressed by younger individuals (8).

In a recently published literature review on the delusion of theft, the most prevalent delusion in the elderly, the author stated that understanding the origins of the delusion of theft - multiple losses, attempts at attributing such losses to an outside source, attempts at reliving a happier past - helps in devising responses that are comforting to the patient, and attention to stimuli that trigger the delusion helps to limit its occurrence; also, the distress that often accompanies the delusion of having been robbed can be decreased by nursing home improvements in the handling of personal possessions, by the correction of sensory deficits, and by the provision of activities that distract from loneliness. Furthermore, understanding that delusional thinking can arise from sensory and cognitive deficits is critical to empathic caregiving and the lessening of caregiver burden (8).

Research supports a shared aetiology for delusions in Alzheimer's disease (AD) and schizophrenia. Executive/frontal deficits are common to both disorders and predict emergent symptoms. Persecutory delusions occur early in the disease and are associated with neurochemical and neuropathological changes in frontostriatal circuits, while misidentification delusions are associated with greater global cognitive deficits and advanced limbic pathology. It is unclear whether the two subtypes are phenomenologically and biologically

se sumanutosti pogrešnog prepoznavanja sve izraženije manifestiraju kako se patološki proces nastavlja (9). O slučajevima *folie à deux*, psihotičnog poremećaja u kojem dva blisko povezana pojedinca dijele sličan sumanuti sustav, kod bolesnika s demencijom izvještava se vrlo rijetko (10). Erotomanija (također poznata kao Clerambaultov sindrom), poremećaj kod kojeg osoba ima sumanuto uvjerenje da je osoba višeg društvenog statusa zaljubljena u nju/njega, rijetko je opisan u starijih ljudi i premda su pogrešne interpretacije događaja česte u moždanih bolestima, osobito kod difuznih multifokalnih poremećaja, o erotomaniji se rijetko izvještava kod demencije (11). Otelov sindrom je psihotični poremećaj karakteriziran sumanutošću nevjere ili ljubomore. Uvjerenja o partnerovoj nevjeri mogu stvoriti sadržaj psihopatološkog fenomena kao što je sumanutost. Sumanuta ljubomora je čest problem kod demencije (12). Kapgrasov sindrom je rijedak psihijatrijski poremećaj. U početku je Kapgrasov sindrom opisan u paranoidnoj shizofreniji i shizoafektivnim poremećajima, ali je opisan i u neurodegenerativnim bolestima kao što su AB i Lewy body demencija (13).

Brojni psihijatrijski fenomeni kompliciraju demenciju (14). Psihoza u AB je česta i problematična; utjecaj na kvalitetu života u pacijenata kao i u skrbnika je visok te je izražena zabrinutost u pogledu učinkovitosti i sigurnosti tretmana lijekovima. Stoga je identificiranje rizičnih čimbenika koji imaju važnu ulogu u nastanku psihoze obvezno za prevenciju ovog kliničkog stanja. Novi dokazi ukazuju da kolinerški sustav može biti povezan ne samo s pojavom kognitivnog oštećenja, već i s nastankom simptoma psihoze (15). Otprilike 60 - 90 % bolesnika s AB razvije neuropsihijatrijske simptome (NPS) (kao što su halucinacije, sumanutosti, agitacija/agresivnost, disforija/depresija, anksioznost, iritabilnost, dezinhibicija, euforija, apatija, aberantno motoričko

distinct or are part of a continuum, in which misidentification delusions manifest increasingly as the pathological process extends (9). Cases of Folie à deux, a psychotic disorder in which two closely associated individuals share a similar delusional system, involving patients with dementia, are reported quite infrequently (10). Erotomania (also known as de Clerambault's syndrome), a disorder in which an individual has a delusional belief that a person of a socially higher standing falls in love with them, has rarely been described in older people, and although misinterpretation of events is common in brain disease, especially with diffuse or multifocal disorders, erotomania has rarely been reported in dementia (11). Othello syndrome is a psychotic disorder characterized by a delusion of infidelity or jealousy. Convictions about the partner's infidelities may form the content of psychopathological phenomena, such as delusions. Delusional jealousy is a frequent problem in dementia (12).

The Capgras syndrome (CS) is a rare psychiatric disorder. Initially, CS was described in paranoid schizophrenia and schizoaffective disorders, but has also been reported in neurodegenerative diseases such as AD and Lewy body dementia (13).

A number of psychiatric phenomena complicate dementia (14). Psychosis in AD is common and troublesome; the impact on the quality of life of both patients and caregivers is high and drug treatments raise concern in terms of both efficacy and safety. Therefore, identifying the risk factors that play an important role in the onset of psychosis is mandatory for the prevention of this clinical condition. New evidence suggests that the cholinergic system may be connected not only with the onset of cognitive impairment, but even with the genesis of psychosis symptoms (15). Approximately 60-90% of patients with AD develop neuropsychiatric symptoms (NPS) (such as hallucinations, delusions, agitation/aggres-



ponašanje, poremećaji spavanja, promjene apetita i hranjenja ili promijenjeno seksualno ponašanje) te se smatra da su ove nekognitivne promjene u ponašanju izazvane anatomskim i biokemijskim promjenama u mozgu i povezane su, djelomično, s kolinergičkom deficiencijom; inhibitori kolinesteraze mogu smanjiti pojavu NPS-a i imaju ulogu u njihovom liječenju – ovi lijekovi mogu odgoditi započinjanje ili smanjiti potrebu za drugim lijekovima kao što su antipsihotici (16). Sumanutosti su često susretani simptomi u pacijenata s AB i mogu dovesti do značajnog morbiditeta. U članku o kliničkim istraživanjima s fokusom na tretman sumanutosti u bolesnika s AB da bi se utvrdila razina dokaza za tretman, identificirane su tri glavne kategorije tretmana: atipični antipsihotici, inhibitori kolinesteraze i ostali različiti tretmani. Zaključeno je da su svi oblici tretmana bili učinkoviti, premda je najveća težina dokaza postojala za risperidon i donepezil.

Nuspojave su zabilježene kod svih oblika tretmana i uključivale su somnolenciju i ekstrapiramidne učinke za antipsihotike, dok su gastrointestinalni učinci imali veću prevalenciju u istraživanjima koja su uključivala inhibitore kolinesteraze (17).

Analiza sumanutosti i halucinacija treba ispitati alternativne etiologije, uključujući pogrešnu dijagnozu i nesporazum, pogrešno tumačenje stvarnosti zbog kognitivnih gubitaka, osjetilne deprivacije i gubitak vida, neodređenih senzacija, delirija i medicinskih uzroka.

Nefarmakološki tretmani učestalo proizlaze iz etiologije kao što su poboljšanje osjetilnih funkcija putem slušnih pomagala ili naočala, provođenje stimulacije, mijenjanje ranijih situacija kod kojih postoji sklonost pogrešnom tumačenju (npr. odrazi u prozorima), ili izbjegavanje pogrešnog tumačenja (npr. osiguravanje da je odgovarajući objekt dostupan te da nema osjećaja gubitka ili pokradenosti) (18).

sion, dysphoria/depression, anxiety, irritability, disinhibition, euphoria, apathy, aberrant motor behaviour, sleep disturbances, appetite and eating changes, or altered sexual behaviour) and these noncognitive behavioural changes are thought to result from anatomical and biochemical changes within the brain, and have been linked, in part, to cholinergic deficiency; cholinesterase inhibitors may reduce the emergence of NPS and have a role in their treatment - these agents may delay initiation of, or reduce the need for, other drugs such as antipsychotics (16). Delusions are commonly encountered symptoms in patients with AD and may lead to significant morbidity. In an article that reviewed clinical trials focusing on the management of delusions in patients with AD to determine the level of evidence for treatment, three main categories of treatment were identified: atypical antipsychotics, cholinesterase inhibitors, and other miscellaneous treatments. It was concluded that all forms of treatment were effective although the greatest burden of evidence existed for risperidone and donepezil. Side effects were noted in all forms of treatment and included somnolence and extrapyramidal effects for antipsychotic medications, whereas gastrointestinal effects were more prevalent in studies involving cholinesterase inhibitors (17). An analysis of delusions and hallucinations must examine alternative etiologies, including misdiagnosis and misunderstanding, the misinterpretation of reality due to cognitive losses, sensory deprivation and vision loss, ambiguous sensations, and delirium and medical causes. Nonpharmacologic treatments frequently follow directly from etiology, such as improving the sensory function via hearing aids or eyeglasses, providing stimulation, changing previous situations prone to misinterpretation (e.g. reflections in windows), or avoiding misinterpretations (e.g. ensuring that an equivalent object is available so there is no sense of loss or theft) (18).

## ZAKLJUČCI

Podatci iz literature pokazali su da se kod osoba s demencijom često javljaju psihotični simptomi kao što su sumanutosti, ali su također pokazali razlike u učestalosti različitih tipova deluzija u demenciji. Osim farmakoterapije, bolje razumijevanje etiologije pogrešnog tumačenja stvarnosti (zbog kognitivnih gubitaka, osjetilne deprivacije i gubitka vida, itd.) pokazuje važnost nefarmakoloških oblika liječenja koji često proizlaze izravno iz etiologije ovakvih simptoma. Daljnja istraživanja potrebna su za stjecanje boljeg razumijevanja etiologije sumanutosti u osoba s demencijom te za pronalaženje učinkovitog liječenja.

## CONCLUSIONS

The findings of the literature review showed that people with dementia often present with psychotic symptoms such as delusions but also revealed differences in frequencies of different types of delusions in dementia. Apart from pharmacological treatment, a better understanding of the etiology of misinterpretation of reality (due to cognitive losses, sensory deprivation, and vision loss, etc.) reveals the importance of nonpharmacologic treatments that frequently follow directly from the etiology of such symptoms. Further investigations are necessary for a better understanding of the etiology of delusions in people with dementia, as well as finding effective treatment.

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