

DYSPHAGIA 2017

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LA DISFAGIA NELLE DEMENZE


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- Malattia di Alzheimer
- Demenze Fronto-Temporali
- Demenze vascolari


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Review

Evaluation and management of oropharyngeal dysphagia in different types of dementia: A systematic review

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ARTICLE INFO	ABSTRACT
<p>Article history: Received 9 January 2012 Received in revised form 26 April 2012 Accepted 27 April 2012 Available online 19 May 2012</p> <p>Keywords: Dysphagia Swallowing disorders Dementia Tube feeding Thickened fluids</p>	<p>Introduction: Dysphagia, or swallowing impairment, is a growing concern in dementia and can lead to malnutrition, dehydration, weight loss, functional decline, and fear of eating and drinking as well as a decrease in quality of life (QOL).</p> <p>Objective: The aim of this article is to do a systematic review of the literature to determine the patterns of swallowing deficits in different types of dementia and to look at the usefulness of different diagnostic and management strategies.</p> <p>Methods: An electronic literature search was done using five electronic databases from 1990 to 2011. One thousand and ten records were identified and 19 research articles met the inclusion criteria. These studies were heterogeneous in design and methodology, type of assessment and outcomes, so only descriptive analysis (narrative reporting) was possible.</p> <p>Results: Prevalence of swallowing difficulties in patients with dementia ranged from 13 to 57%. Dysphagia developed during the late stages of frontotemporal dementia (FTD), but it was seen during the early stage of Alzheimer's dementia (AD). Limited evidence was available on the usefulness of diagnostic tests, effect of postural changes, modification of fluid and diet consistency, behavioral management and the possible use of medications. Use of Percutaneous Endoscopic Gastrostomy (PEG) tubes in advanced dementia, did not show benefit with regards to survival, improvement in QOL, or reduction in aspiration pneumonia. Significant gaps exist regarding the evidence for the evaluation and management of dysphagia in dementia.</p>

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Review

Diagnostic Assessment and Management of Dysphagia in Patients with Alzheimer's Disease

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Come si modifica la deglutizione nell'invecchiamento

- Ridotta sensibilità del faringe
- Edentulia (ridotta capacità di manipolare il bolo)
- Ridotta salivazione
- Minor forza della lingua
- Rallentamento del transito oro-faringeo
- Ritardo nell'innescare del riflesso faringeo
- Necessità di un aumento del volume del bolo

Disfagia nelle demenze I

- Risultato delle alterazioni età-relate e di quelle legate alla malattia.
- Si presenta generalmente come complicanza tardiva.
- Contribuisce allo scadimento delle condizioni generali (malnutrizione, disidratazione, perdita di peso), peggiora il declino funzionale e la qualità di vita, è fra le principali cause di morte (polmonite ab ingestis).
- Dati epidemiologici non certi (13-57%) e probabilmente sottostimati, più frequente nei pazienti istituzionalizzati (intorno al 45%, dati USA) e nei pazienti che non sono più in grado di alimentarsi da soli.

Disfagia nelle demenze II

- Si correla alla severità della demenza.
- Esistono tuttavia differenze fra i diversi tipi di demenza in termini di frequenza, caratteristiche e modalità di presentazione e più in generale per quanto riguarda la condotta alimentare.
- Alterazioni sub-cliniche possono essere comunque presenti prima delle manifestazioni cliniche conclamate.
- Già nelle fasi iniziali sono identificabili alterazioni a livello dell'olfatto e del gusto.

Brain Res. Author manuscript; available in PMC 2012 December 06.

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Olfactory Deficit Detected by fMRI in Early Alzheimer's Disease

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Abstract

Alzheimer's disease (AD) is accompanied by smell dysfunction, as measured by psychophysical tests. Currently it is unknown whether AD-related alterations in central olfactory system neural activity, as measured by functional magnetic resonance imaging (fMRI), are detectable beyond those observed in healthy elderly. Moreover, it is not known whether such changes are correlated with indices of odor perception and dementia. To investigate these issues, twelve early stage AD patients and thirteen non-demented controls underwent fMRI while being exposed to each of three concentrations of lavender oil odorant. All participants were administered the University of Pennsylvania Smell Identification Test (UPSIT), the Mini-Mental State Examination (MMSE), the Mattis Dementia Rating Scale-2 (DRS-2), and the Clinical Dementia Rating Scale (CDR). The Blood oxygen level-dependent (BOLD) signal at primary olfactory cortex (POC) was weaker in AD than in HC subjects. At the lowest odorant concentration, the BOLD signals within POC, hippocampus, and insula were significantly correlated with UPSIT, MMSE, DRS-2, and CDR scores. The BOLD signal intensity and activation volume within the POC increased significantly

Fondazione "Istituto Neurologico" x Zimbra: Cestino x Smell identification function: x

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Curr Opin Psychiatry, 2015 Mar;28(2):173-9. doi: 10.1097/YCO.0000000000000146.

Smell identification function and Alzheimer's disease: a selective review.

Velayudhan L¹.

Author Information

Abstract

PURPOSE OF REVIEW: To provide an update of the recent studies on the olfactory function in Alzheimer's disease, with a focus on the olfactory identification function.

RECENT FINDINGS: The studies reviewed here confirm previous reports on the poor olfactory function in Alzheimer's disease compared to healthy normal controls and also as a marker for conversion from mild cognitive impairment to Alzheimer's disease. Olfactory identification function has been associated with severity of illness, non-cognitive neuropsychiatric symptoms, and structural and functional MRI measures. There is a possible interaction of apolipoprotein E genotype with olfactory performance in Alzheimer's disease patients and those at risk for Alzheimer's disease. Usefulness of smell identification function in differentiating Alzheimer's disease patients from other types of dementia needs to be established.

SUMMARY: The need for simple, inexpensive and non-invasive procedures for aiding in the diagnosis and understanding of Alzheimer's disease has led to theories and procedures examining the role of olfactory functions in Alzheimer's disease. Although there is increasing evidence for olfactory dysfunction in general and impaired odour identification in particular in Alzheimer's disease, additional larger and methodologically sound research is needed for testing its clinical utility in day-to-day clinical practice for early, accurate and differential diagnosis of Alzheimer's disease.

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Early deficits in cortical control of swallowing in Alzheimer's disease

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Abstract

The goal of this study was to determine whether functional changes in cortical control of swallowing are evident in early Alzheimer's disease (AD), before dysphagia (swallowing impairment) is evident. Cortical function was compared between an early AD group and a group of age-matched controls during swallowing. Swallowing oropharyngeal biomechanics examined from videofluoroscopic recordings were also obtained to more comprehensively characterize changes in swallowing associated with early AD. Our neuroimaging results show that the AD group had significantly lower BOLD response in many cortical areas that are traditionally involved in normal swallowing (i.e. pre and postcentral gyri, Rolandic and frontal opercula). There were no regions where the AD group recruited more brain activity than the healthy controls during swallowing and only 13% of all active voxels were unique to the AD group, even at this early stage. This suggests that the AD group is not recruiting new regions, nor are they compensating within regions that are active during swallowing. In videofluoroscopic measures, the AD group had significantly reduced hyo-laryngeal elevation than the controls. Although swallowing

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Disfagia nella malattia di Alzheimer

Nelle fasi moderate-severe:

- Alterazioni della vigilanza/attenzione con marcata distraibilità
- Disturbi della memoria (il pz. si dimentica di aver mangiato)
- Agnosia per il cibo
- Aprassia di alimentazione (incapacità ad utilizzare oggetti come posate, bicchieri, etc)
- Aprassia bucco-facciale (ad es. mancata prensione labiale del bicchiere)
- Aumento dei tempi di transito orale

Disfagia nella malattia di Alzheimer

Nelle fasi più avanzate:

- Difficoltà nella preparazione orale del bolo
- Alterata clearance faringea
- Difficoltà nell'apertura dello sfintere esofageo
- Quindi aspirazione

Vascular dementia: Pathophysiological classification (NINDS-AIREN criteria)

- Multi-infarct dementia
- Strategic single-infarct dementia
- Small-vessel disease with dementia
- Hypoperfusion
- Hemorrhagic dementia
- Other mechanisms

DYSPHAGIA IN PATIENTS WITH DEMENTIA: ALZHEIMER VERSUS VASCULAR

Suh, Kim and Na, Alzheimer Dis Assoc Disord 2009

AD

Transito esofageo più rallentato
Compromissione delle vie sensoriali correlata alle alterazioni nelle aree temporo-parietali

VaD

Maggiormente compromessi formazione del bolo e masticazione, inversione dell'epiglottide, escursione io-laringea, aspirazione silente
Compromissione motoria dovuta alla disconnessione del tratto cortico-bulbare

Disorders of «taste cognition» are associated with insular involvement in patients with Alzheimer's disease and vascular dementia; «memory of food is impaired in dementia and responsible for poor diet»

Suto et al, Int Psychogeriatr 2014

Entrambi i gruppi presentavano una compromissione nel riconoscimento dei gusti inversamente correlata al punteggio al MMSE.

L'insula sembra associata alla «taste cognition»:

- in un sottogruppo AD sottoposto a FDG-PET è stato riscontrato un più basso metabolismo a livello dell'insula dx. nei pts con maggior compromissione della «taste cognition»
- i pts con VaD e lesioni a livello dell'insula mostravano una maggiore compromissione

DEMENZE FRONTO-TEMPORALI

- Variante COMPORTAMENTALE (bvFTD). E' la forma più comune, esordisce con disturbi affettivo/ comportamentali di vario tipo cui seguono disturbi del linguaggio
- AFASIA PROGRESSIVA NON FLUENTE (PNFA) (in passato: Afasia Primaria Progressiva). Il disturbo d'esordio e principale riguarda la sfera del linguaggio, soprattutto espressivo.
- DEMENZA SEMANTICA (SD). Disturbo del linguaggio di tipo fluente (logorrea, deficit di comunicazione e di comprensione) associato a disturbi affettivo/ comportamentali
- PARALISI SOPRANUCLEARE PROGRESSIVA
- DEGENERAZIONE CORTICO-BASALE

ALS and FTD clinical continuum



Zago et al, 2011

PAPER

Changes in appetite, food preference, and eating habits in frontotemporal dementia and Alzheimer's disease

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See Editorial Commentary, page 358

J Neural Neurosurg Psychiatry 2002;73:371-376

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Background: Despite numerous reports of changes in satiety, food preference, and eating habits in patients with frontotemporal dementia, there have been few systematic studies.

Objectives: To investigate the frequency of changes in eating behaviours and the sequence of development of eating behaviours in frontotemporal dementia and Alzheimer's disease, using a caregiver questionnaire.

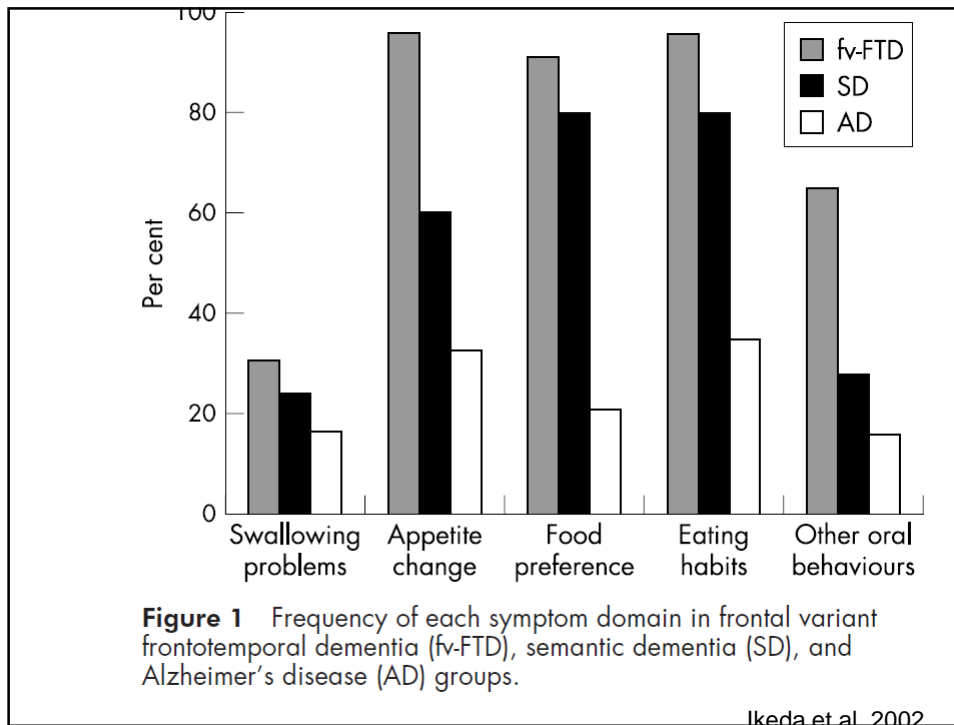
Methods: Three groups of patients were studied: frontal variant frontotemporal dementia (fv-FTD) (n = 23), semantic dementia (n = 25), and Alzheimer's disease (n = 43). Level of education and dementia severity was similar in the three groups. The questionnaire consisted of 36 questions investigating five domains: swallowing problems, appetite change, food preference, eating habits, and other oral behaviours.

Results: The frequencies of symptoms in all five domains, except swallowing problems, were higher in fv-FTD than in Alzheimer's disease, and changes in food preference and eating habits were greater in semantic dementia than in Alzheimer's disease. In semantic dementia, the developmental pattern was very clear: a change in food preference developed initially, followed by appetite increase and altered eating habits, other oral behaviours, and finally swallowing problems. In fv-FTD, the first symptom was altered eating habits or appetite increase. In Alzheimer's disease, the pattern was not clear although swallowing problems developed in relatively early stages.

Conclusions: Change in eating behaviour was significantly more common in both of the frontotemporal dementia groups than in Alzheimer's disease. It is likely that the changing in eating behaviours reflects the involvement of a common network in both variants of frontotemporal dementia—namely, the ventral [orbitobasal] frontal lobe, temporal pole, and amygdala.

Frontotemporal dementia is the term currently favoured to describe progressive focal atrophy involving frontal or anterior temporal lobes or both, in association with a spectrum of non-Alzheimer pathologies.^{1,2} Patients with frontotemporal dementia may present with predominantly frontal involvement (so-called frontal variant frontotemporal demen-

temporal dementia and Alzheimer's disease. The three main aims were: to investigate the frequency of changing in eating behaviours in frontotemporal dementia and Alzheimer's disease; to investigate the sequence of development of eating behaviours in frontotemporal dementia and Alzheimer's disease; and to establish whether the volume of frontotem-



Ahmed RM, Irish M, Henning E, Dermody N, Bartley L, Kiernan MC, Piguet O, Farooqi S, Hodges JR
 Assessment of Eating Behavior Disturbance and Associated Neural Networks in Frontotemporal Dementia.
 JAMA Neurol. 2016 Mar;73(3):282-90

Marked hyperphagia is restricted to bvFTD, present in all patients with this diagnosis, and supports its diagnostic value. Differing neural networks control eating behavior in patients with bvFTD and semantic dementia and are likely responsible for the differences seen, with a similar network controlling sucrose preference. These networks share structures that control cognitive-reward, autonomic, neuroendocrine, and visual modulation of eating behavior. Delineating the neural networks involved in mediating these changes in eating behavior may enable treatment of these features in patients with complex medical needs and aid in our understanding of structures that control eating behavior in patients with FTD and healthy individuals.

Ahmed RM, Irish M, Piguet O, Halliday GM, Ittner LM, Farooqi S, Hodges JR, Kiernan MC.

Amyotrophic lateral sclerosis and frontotemporal dementia: distinct and overlapping changes in eating behaviour and metabolism. *Lancet Neurol.* 2016 Mar;15(3):332-42.

Metabolic changes incorporating fluctuations in weight, insulin resistance, and cholesterol concentrations have been identified in several neurodegenerative disorders. Whether these changes result from the neurodegenerative process affecting brain regions necessary for metabolic regulation or whether they drive the degenerative process is unknown. Emerging evidence from epidemiological, clinical, pathological, and experimental studies emphasises a range of changes in eating behaviours and metabolism in amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD). In ALS, metabolic changes have been linked to disease progression and prognosis. Furthermore, **changes in eating behaviour that affect metabolism have been incorporated into the diagnostic criteria for FTD, which has some clinical and pathological overlap with ALS.** Whether the distinct and shared metabolic and eating changes represent a component of the proposed spectrum of the two diseases is an intriguing possibility. Moreover, future research should aim to unravel the complex connections between eating, metabolism, and neurodegeneration in ALS and FTD, and aim to understand the potential for targeting modifiable risk factors in disease development and progression.

La gestione della disfagia nel paziente con demenza

- necessità di un approccio particolare che tenga conto delle caratteristiche peculiari della malattia
- preliminare valutazione accurata del singolo soggetto per definire le modalità di intervento attuabili soprattutto in rapporto all'entità del deterioramento cognitivo
- obiettivo principale è fornire un adeguato apporto calorico e di liquidi in modo da evitare o quantomeno ridurre malnutrizione e disidratazione
- tecniche di tipo compensatorio
- strategie di tipo ambientale
- tecniche di stimolazione cognitiva

The role of gastrostomy tube placement in advanced dementia with dysphagia: a critical review

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Purpose: Over 4.5 million people in North America had a diagnosis of dementia in the year 2000, and more than half had advanced disease with potential aspiration risk. There is much controversy regarding the use and timing of enteral feeding support in these patients with dysphagia. The management of dysphagia is far more complex when considering quality of life, "comfort care" hand feeding, the use of percutaneous endoscopic gastrostomy tube (PEG), and associated mortality rates. This study seeks to critically review the literature that evaluates PEG placement in this population.

Methods: A systematic literature review of PubMed, from 1995–2012, was conducted to identify studies relating to PEG placement in dementia patients with dysphagia. The principal outcomes and related survival rates for this population were compared.

Results: In total, 100 articles were identified in the search. Of these, ten met the search criteria and were analyzed. There was one study with a 2b level of evidence, one with 3b, and the remainder had level 4. All studies discussed long-term survival in the PEG versus non-PEG populations. No studies showed definitive evidence to suggest long-term survival rates improved in patients who underwent PEG placement as compared to those who did not. Two studies documented median survival worse in patients over age 80 with dementia and PEG placement.

Conclusion: There is presently no evidence to suggest long-term survival rates improved in patients with advanced dementia who underwent PEG placement for dysphagia. Relevance to quality of life, need for nutrition and hydration, and ethical considerations in the decision

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Review

Diagnostic Assessment and Management of Dysphagia in Patients with Alzheimer's Disease

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