SYMPOSIUM ABSTRACT BOOK

WATER IS LIFE!
Help your patients with dysphagia stay safely hydrated

Satellite Symposium

12th Annual Congress of the European Society for Swallowing Disorders (ESSD)

15 SEP. 2022

FOR HEALTHCARE PROFESSIONALS ONLY

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Prof. Dr. Antonio Schindler.

Head of Phoniatrics Unit, Department of Biomedical and Clinical Sciences "L. Sacco", University of Milan, Italy

Introduction & Welcome

Prof Dr. Antonio Schindler is Head of the Bachelor of Speech Pathology at the University of Milan and Head of the Phoniatric Unit at Sacco Hospital in Milan, Italy.

Specialized in Phoniatrics in 2001 and in Otorhinolaryngology in 2005. He became Assistant Professor in 2006, Associate Professor in 2013, and Full Professor in 2021 at the Milan University Medical School. At Milan University he teaches Phoniatrics for Medical Students, Speech Pathology Students, and residents of Otorhinolaryngology, Audiology, and Phoniatrics, Physical Medicine, and Rehabilitation.

He is a Board Member of the European Society for Swallowing Disorders. He has been President of the Italian Society of Logopedics and Phoniatrics, Vice-President of the Union of the European Phoniatricians, and Board Member of the International Association of Logopedics and Phoniatrics (IALP).

His main clinical activities are child language (assessment and rehabilitation planning), voice disorders (assessment, rehabilitation planning, and surgical management), and swallowing disorders (assessment and rehabilitation planning). He has published over 160 papers indexed in Scopus, and his H-index is 27.

Dr. Lee Hooper, RDN.

Reader in Research Synthesis, Nutrition & Hydration
Norwich Medical School University of East Anglia
England, UK

Assessing (de)hydration in dysphagic patients: Review of current guidelines

Speaker biography

Dr. Lee Hooper's research focuses on supporting older people to eat and drink well, and she is a dietitian, nutritionist and systematic reviewer. Her current research (initiated during her National Institute for Health Research Career Development Fellowship) is on preventing and identifying dehydration in older people living in residential (long-term) care. As well as being a Cochrane editor, Lee is a member of the World Health Organization Nutrition Guidance Expert Advisory Group (NUGAG) on Diet and Health, which has recently produced guidance on sodium and potassium intakes. Lee is a Reader in Research Synthesis, Nutrition & Hydration in the Norwich Medical School at the University of East Anglia and has a BSc in Biochemistry, PhD (University of Manchester) and current dietetic registration.

Abstract

Older adults have an increased risk of low-intake dehydration and this appears to be exacerbated in those with dysphagia. Dehydration can be due to insufficient drinking or excess sweating (low-intake or intracellular dehydration) or the loss of fluid and salts, due to diarrhoea or blood loss (hypovolaemia, extracellular or salt-loss dehydration). These two conditions are very different – with different causes, different effects on the body and different treatments. In older adults the most common form of dehydration is low-intake dehydration, the topic of this talk. The prevalence of low intake dehydration in older adults is being explored in an ongoing systematic review[1], but individual studies suggest a prevalence of ~20% in older adults living in long term care[2], 38% of assisted living memory care residents within a quality improvement project in the United States[3], 18% of community-dwelling older adults in the US[4], and 45% in Sweden[5]. Hospital-based studies have reported prevalence from 20% to 52% amongst hospitalised older adults[6-9].

To understand the relationship between low-intake dehydration and dysphagia in our patients we need to be able to identify low-intake dehydration. Whilst serum osmolality is the gold standard measurement for diagnosing low-intake dehydration, it takes time and requires costly invasive blood samples and processing, so serum osmolality is rarely measured in clinical practice[10-12]. Other methods of identifying low-intake dehydration include calculated osmolarity, salivary or tear osmolarity, bioelectrical impedance, and a plethora of signs and symptoms. A Cochrane review[13] examined sixty-seven tests for diagnostic accuracy. When examined as stand-alone tests, expressing fatigue, missing drinks between meals, and Bioelectrical Impedance Analysis (BIA) resistance at 50kHz were all found to have some ability to identify dehydration, but need further assessment. A post-hoc ROC found that drinks intake, urine osmolality and axillial moisture have limited accuracy.

A prospective diagnostic accuracy study[14] investigated forty-nine signs of dehydration compared with serum-osmolality in 188 older long term care residents, finding no useful signs for accurately identifying dehydration. Measures considered included: skin turgor; mouth, skin, and axillary dryness; capillary refill; sunken eyes; blood pressure on resting and after standing; body temperature; pulse rate; and self-reported feelings of thirst and well-being. Studies in older adults have examined the connection between urinary measures and serum osmolality and found a lack of correlation despite these measures appearing useful in young healthy adults[15,16]. A narrative review graded signs of dehydration, noting that using serum osmolality as a first choice and calculated osmolality (using the Khajuria Krahn equation only[17]) as a second choice were grade B (Should be used), whilst BIA, simple signs and tests, shall not be used[18].

Management of dysphagia often involves ingestion of fluids thickened with starch or gum to prevent fluid aspiration, and there have been concerns that such thickeners may reduce the bioavailability of water, promoting low-intake dehydration. Indeed 2/3 of older adults with dysphagia have been identified as being dehydrated[19]. Fluid absorption from starch-thickened, gum-thickened and unthickened (pure) water was compared and found to

be identically rapid, with over 95% absorption, in rats and humans[20]. This was corroborated in a small (single human) isotopic tracer study[21]. Rather than fluids being less bioavailable when thickened it appears that people consume less thickened fluids than they would unthickened fluids. Thickened fluids have been found to be less likely to quench thirst, flavours are poorly released and texture may be impaired. This makes thickened fluid less attractive, so less is consumed, promoting low-intake dehydration[22].

This talk will examine the definition and diagnosis of low-intake dehydration in older adults, the relationship between low-intake dehydration and dysphagia, and the intersection of guidelines on prevention of dehydration and support for dysphagia[12,18,23,24].

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Prof. Dr. Sibel Eyigor.

Physical Medicine and Rehabilitation Department,
Ege University, Medical Faculty, Izmir, Turkey

Optimize (re)hydration while maintaining swallowing safety

Speaker biography

Prof Sibel Eyigör works as a medical doctor in the field of physical therapy and rehabilitation. She is the head of the dysphagia working group of the Turkish Physical Therapy and Rehabilitation Association. She is the head of the diagnosis and treatment laboratory of swallowing disorders at Ege University Faculty of Medicine.

She obtained her medical degree in the Ege University, Faculty of Medicine, and completed her residency program in Physical Therapy and Rehabilitation at the Ege University School of Medicine. She has been appointed as an Associate Professor in 2008 and a Professor in 2015 in the Department of Physical Therapy and Rehabilitation at Ege University Faculty of Medicine. She is also working in the Supportive Care Unit of the Oncology Department.

Her main research interests are dysphagia and rehabilitation, oncologic rehabilitation-lymphedema, and geriatric rehabilitation. She attended the graduate course in Normal and Disordered Swallowing at the University of Illinois at Urbana, Champaign during the spring semester of 2004. She spent extended hours observing instrumental evaluations and treatment of dysphagia at Northwestern University Medical Center in Chicago, Illinois. During this time, Prof Sibel Eyigör had the opportunity to work with Adrienne Perlman and Jeri A. Logemann. She was an observer in the Geriatric Rehabilitation program at the Toronto Rehabilitation Institute in 2007. Prof Sibel Eyigör completed International Training Programme in Medical Gerontology in Malta in 2009. She worked at the Ministry of Health National Cancer Advisory Board and was assigned to the palliative care committee. She attended the Flexible Endoscopic Evaluation of Swallowing (Hands-on) course at Wake Forest University in 2010, and also completed Swallowing Instrumentation Training in New Jersey. In 2010, she established the swallowing diagnosis and treatment laboratory at Ege University.

She is the author or co-author of numerous articles and book chapters in national and international indexed journals and also works as a reviewer for reputed professional journals. She is the editor of the first Turkish book on the diagnosis and treatment of dysphagia. She organized many courses to increase the awareness of dysphagia. She also made many presentations on the diagnosis and treatment of dysphagia for different health disciplines.

She is currently a Professor at the Ege University, Faculty of Medicine, Department of Physical Therapy and Rehabilitation in Izmir, TURKEY.

Abstract

Although dysphagia is a common problem all over the world (20-60%), unfortunately, adequate diagnosis and treatment opportunities are not available. As a result, complications of dysphagia leading to prolonged hospitalization, aspiration pneumonia, malnutrition, dehydration, and death are encountered. Our topic here is hydration, which is a complex condition that is often overlooked. However, hydration/dehydration has been found to be associated with motor and cognitive skills, dependency, morbidity, and mortality.

Despite this, the relationship between dysphagia and hydration has been less studied than the relationship between dysphagia and nutrition. There is also insufficient data and evidence regarding dysphagia and hydration. Therefore, optimizing hydration in patients with dysphagia will not be an easy task. Perhaps one of the most important reasons for this is that there is no gold standard method for assessing hydration. In addition, hydration assessment is not frequently performed in our clinical practice.

In the treatment of dysphagia, it is necessary to provide both a safe and effective nutritional method. A common treatment strategy is the use of thickeners, as thin fluids are often aspirated. Thus, both aspiration is prevented and hydration is provided.

However, there are some controversial issues regarding the use of thickeners on hydration status. Our group found in a randomized clinical trial that the use of 'xanthan gum-based liquid thickener' helped maintain intracellular water, extracellular water, and body water (measured by bioimpedance (BIA)) in patients with maxillary carcinoma undergoing total maxillectomy. These results have also been shown in a large sample of patients (n=724) demonstrating the positive therapeutic effect of thickened fluid/thickening agent therapy on hydration status in patients with dysphagia.

Gaps and differences between the evidence-based management of dysphagia and clinical practice and questions about these issues will be reviewed and discussed.

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Dr. Noemí Tomsen.

Gastrointestinal Physiology Laboratory, Consorci Sanitari del Maresme, Mataró, Spain

Effect of a novel liquid thickener on hydration status in patients with oropharyngeal dysphagia

Speaker biography

Dr. Noemí Tomsen works as a postdoctoral researcher in the Gastrointestinal Physiology Lab of the Hospital de Mataró, led by Prof Pere Clavé, and affiliated to the Centro de Investigación Biomédica en Red en Enfermedades Hepáticas y Digestivas (CIBERehd).

She obtained her bachelor's in Biology and Master's degree in Advanced Immunology at the Universtity of Barcelona- Barcelona Autonomous University, and her Ph.D. in Neuroscience at the Barcelona Autonomous University Spain.

Author of several indexed scientific publications and book chapters related to neurorehabilitation treatments and the evaluation of hydration status. The research line that she is in charge of aims to study the therapeutic effect of TRP channel agonists (TRPV1, TRPA1, TRPM8) on the biomechanical and neurophysiological response of swallowing in patients with oropharyngeal dysphagia.

She recently received the Best Doctoral Thesis Award from the “Filial del Maresme de l'Acadèmia de Ciències Mèdiques i de la Salut de Catalunya i Balears” in addition to being awarded for the best oral communication in different national and international congresses and with the Young Clinical and Basic Scientist Grant during the UEG week in 2019.

Abstract

Although oropharyngeal dysphagia (OD) may cause very severe complications, it is often not detected, explored, and treated. Older patients are frequently unaware of their swallowing dysfunction, which is one of the reasons why the consequences of OD, i.e. aspiration, dehydration, and malnutrition, are regularly not attributed to dysphagia. It is obvious that dysphagia directly impairs the ability to eat and drink, reduces dietary intake of energy, water, and other nutrients, and sooner or later will result in malnutrition and dehydration, if not correctly cured. Dehydration is one of the main complications of OD, but its prevalence is not well described. Some studies have shown that patients with OD have hydropenia, and reduced intracellular water and saliva volume and the evidence suggests that it is mainly due to insufficient fluid intake. In order to increase compliance and ensure patient preferences, it is suggested to have a range of thickeners that are easy (convenient preparation, simple to use, and consistent dosing), fast (accurate dosing and faster to achieve the target viscosity) and safe (improves swallowing safety, lump-free, amylase resistant and stable over time) to use. For this reason, a liquid thickener has been developed that meets these requirements: ThickenUp® GelExpress (TUGE).

Our group designed a prospective pilot study that aimed to study the acceptability, gastrointestinal (GI) tolerance, compliance and palatability, and the therapeutic effect of the 14-day intervention with thickened fluids (TF) by TUGE on hydration status in patients with OD. OD was assessed by videofluoroscopy (VFS) while swallowing 10 and 20ml of liquid (<50mPa·s) and TUGE-TF at slightly-thick (56.2±3.5mPa·s), nectar/mildly-thick (154.2±0.0mPa·s), honey/moderately-thick (407.2±11.7mPa·s), and pudding/extremely-thick (614.2±11.4mPa·s). A diary on the palatability, GI tolerance, and compliance to the thickener was recorded in accordance with the UK Advisory Committee on Borderline Substances guidance. Hydration status was assessed by monitoring daily TF intake, and analytical parameters (serum and urinalysis). 16 patients (74.4±10.2years, 37.5% women) were included, who had efficacy and safety impairments at VFS (PAS 5.5±2.2, delayed laryngeal vestibule closure time 303.5±110.7ms, and 43.8% aspirations). The TF adherence and the volume of thickened drinks were high (93-100% and 1488mL/day respectively). Acceptability was high, with a minority indicating that they disliked TUGE, distributed as qualifiers "appearance" in 1 subject (6.3%), "taste" in 1 subject (6.3%), or "texture" in 3 subjects (18.8%). Burping or flatulence was reported in 6 subjects (37.5%), without serious GI side effects. A reduction of hemoglobin (14.3±1.5g/dl vs 13.9±1.6g/dl, p=0.016), hematocrit (42.8±4.2% vs 41.8±4.3%, p=0.040), calcium (9.7±0.6mg/dl vs 9.4±0.3mg/dl, p=0.028), magnesium (2.1±0.2mg/dl vs 2.0±0.2mg/dl, p=0.006) and urea (40.6±13.1mg/dl vs 36.9±11.3mg/dl, p=0.039) was found when compared to baseline. We can conclude that this pilot study shows TUGE was well-accepted, well-tolerated and significantly improved the hydration status in patients with OD after a 14-day intervention.

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