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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.

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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.

References

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Watch the 9 minute conference talk with Dr. Noemí Tomsen and hear about EFFECT OF A NOVEL LIQUID THICKENER ON HYDRATION STATUS IN PATIENTS WITH OROPHARYNGEAL DYSPHAGIA

https://youtu.be/SHic4Cu6PS8

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