

EDITORIAL

Dysphagia, the great unknown for critical care nurses



La disfagia, la gran desconocida para las enfermeras de cuidados críticos

The role of the critical care nurse is increasingly relevant in multi-professional and multidisciplinary healthcare, inside and outside intensive care units (ICU). The survival of patients admitted with a critical illness is increasing, due, on the one hand, to greater scientific knowledge and, on the other, to the availability of better care resources and life support measures.¹ The ability of critical care professionals to adapt to the new realities of care has led to a change in approach, not only focussing on survival but also highlighting issues related to the physical, psychological and social situation of patients after their stay in an ICU.² Consequently, a patient's stay in an ICU entails a series of clinical conditions that will involve difficulties, to a greater or lesser extent, in performing basic activities of daily living (ADLs) and which fall within what is known as the Post-ICU Syndrome.³

Muscle weakness is one of the components included in the Post-ICU Syndrome, and its management requires professional care by nurses. Patients experiencing muscle weakness have been shown to have poorer care outcomes and higher mortality rates.^{4,5} Therefore, nurses in these areas have a responsibility to implement measures to ensure that the specific needs and care required by these patients are met.⁶

Currently, it has been observed that swallowing disorders are gaining relevance in the ICU. Dysphagia is a disorder that may initially go unnoticed; however, it can affect a significant percentage of patients admitted to the ICU, according to studies run, ranging from 3% to 62% of the population.^{7,8}

Dysphagia is characterised by the partial or complete inability to swallow liquid or solid food, or even saliva, effectively.⁷ The causes are multifactorial, including muscle weakness, side effects of the medication used and the presence of devices in the airway.⁹ Several authors have demonstrated the association of dysphagia with the post-extubation process,^{10,11} severity of illness (APACHE II and SAPS II), respiratory disease, presence of tracheostomy,

duration of mechanical ventilation, prolonged stay in ICU and hospitalisation; and how these factors increase the risk of developing dysphagia.^{8,12,13} There is therefore a need for healthcare professionals themselves to be familiar with the risk factors identified in the current literature.^{7,13,14}

The presence of dysphagia leads to various complications, such as increased risk of aspiration, aspiration pneumonia, delayed initiation of oral feeding, malnutrition, prolonged hospital stay and increased mortality and morbidity.^{7,9,14} Some studies have shown that mortality increases at 28 and 90 days after ICU admission in patients with a positive dysphagia test during their ICU stay, compared to patients with a negative test, further highlighting the importance of proper detection and management.⁸

In the critically ill patient, it has been shown that maintaining adequate digestive feeding is critical to recovering health. Therefore, ensuring a safe airway and correct food handling must be a key element in our daily work. To achieve this, it is necessary to use the available scientific evidence and resources at our disposal to prevent complications.^{3,15} In this regard, two fundamental elements are required. Firstly, raising awareness among professionals of the importance of dysphagia and its early detection. Secondly, the implementation of consensual screening measures in the different units to confirm or rule out the presence of dysphagia in patients.

To increase the awareness of professionals as regards the detection and attitude towards dysphagia, Nielsen et al. mention that there must be interprofessional collaboration with the aim of avoiding aspiration and moving towards swallowing rehabilitation in the safest possible way.¹⁶ However, in the study by Santana-Cabrera et al. despite the fact that participants considered dysphagia to be an important problem, only 26% of the ICUs analysed had a standardised procedure for dysphagia care and in less than 10% it was applied systematically to all patients.¹⁷

As for screening methods to detect this problem, the literature identifies several different models: Functional Oral Intake Scale (FOIS score),¹⁸ Modified Viscosity Volume

Swallowing Test (mV-VST)¹⁹ or the Volume-Viscosity clinical screening method (MECV-V).²⁰ These tests require training the healthcare professional running them and are based on the International Dysphagia Diet Standardisation Initiative (IDDSI) criteria, which were updated in 2017²¹ and which divide drinking and eating into eight levels (0–7), both focussing on levels of ease of swallowing, from light liquid items (level 0) to normal food (level 7). These tests cover different elements that assess the functionality of the swallowing process. To this end, strategies must be implemented in the respective units to unify criteria, where nurses are the professionals who carry out these assessments prior to the start of the oral diet. To this end, they should receive prior training in this respect.^{22,23}

The lack of knowledge of critical care nurses about dysphagia, and failure to follow a regulated screening methodology can lead to great variability in care, which can increase the risk of aspiration.²⁴ Both elements, knowledge and use of validated tests, allow nurses to reassure patients when restarting an oral diet.

The current reality is that functional swallowing tests using imaging tests are the most effective in detecting dysphagia, although tests based on the IDDSI criteria are the most widely used.²¹ However, neither of these tests and sequential approaches, after obtaining positive test results, are widely used in clinical practice.¹⁷ These findings should make us reflect on the fact that dysphagia is a problem that hinders patients' recovery and may generate health care needs due to associated complications. In a prospective research project by Huang et al. it was observed that patients diagnosed with dysphagia and stratified according to the Dysphagia Severity Scale (DDS) and video fluoroscopy had a statistically significant increased risk of developing pneumonias in the severe dysphagia group as compared to the mild dysphagia group at 3, 6 and 20 months after recruitment to the study. At the 20-month measurement, the risk was five times higher in the severe dysphagia group (OR=5.12; 95% CI = [1.70–15.37]; p = .002).²⁵

Given the problems identified, both during hospitalisation and in the weeks and months after discharge, it is essential to implement evidence-based measures to ensure safe feeding. This begins with the appropriate detection of cases, which will enable corrective or supportive measures to be implemented as early as possible, with the aim of minimising the time without adequate care tailored to the needs of these patients. As in other settings, nurses in Spanish ICUs should develop clinical practice guidelines or standardised procedures to address this circumstance, as has been observed in other studies.^{16,26}

As critical care nurses, it is essential to recognise the importance of our role in both oral and enteral nutrition, ensuring safety and efficacy throughout the feeding process. We must be aware of the risk of potential complications that could be triggered by initiating oral tolerance in all critically ill patients without first assessing their ability to swallow adequately. Therefore, it is essential to undertake a thorough assessment of swallowing function before initiating oral feeding in these patients.

References

1. Mart MF, Pun BT, Pandharipande P, Jackson JC, Ely EW. ICU survivorship - The relationship of delirium, sedation, dementia, and acquired weakness. *Crit Care Med*. 2021;0000000000005125, <http://dx.doi.org/10.1097/CCM.0000000000000955>.
2. Boelens YFN, Melchers M, van Zanten ARH. Poor physical recovery after critical illness: incidence, features, risk factors, pathophysiology, and evidence-based therapies. *Curr Opin Crit Care*. 2022;28:409–16, <http://dx.doi.org/10.1097/MCC.0000000000000955>.
3. Rousseau AF, Prescott HC, Brett SJ, Weiss B, Azoulay E, Creteur J, et al. Long-term outcomes after critical illness: recent insights. *Crit Care*. 2021;25:1–7, <http://dx.doi.org/10.1186/s13054-021-03535-3>.
4. Saccheri C, Morawiec E, Delemazure J, Mayaux J, Dubé B-P, Similowski T, et al. ICU-acquired weakness, diaphragm dysfunction and long-term outcomes of critically ill patients. *Ann Intensive Care*. 2020;10:1, <http://dx.doi.org/10.1186/s13613-019-0618-4>.
5. van Wagenberg L, Witteveen E, Wieske L, Horn J. Causes of mortality in ICU-acquired weakness. *J Intensive Care Med*. 2020;35:293–6 <http://dx.doi.org/10.1177/0885066617745818>.
6. Raurell-Torredà M, Arias-Rivera S, Martí JD, Frade-Mera MJ, Zaragoza-García I, Gallart E, et al. Grado de implementación de las estrategias preventivas del síndrome post-UCI: estudio observacional multicéntrico en España. *Enferm Intensiva*. 2019;30:59–71, <http://dx.doi.org/10.1016/j.enfi.2018.04.004>.
7. Zuercher P, Moret CS, Dziewas R, Schefold JC. Dysphagia in the intensive care unit: epidemiology, mechanisms, and clinical management. *Crit Care*. 2019;23:1–11, <http://dx.doi.org/10.1186/s13054-019-2400-2>.
8. Schefold JC, Berger D, Zürcher P, Lensch M, Perren A, Jakob SM, et al. Dysphagia in mechanically ventilated ICU patients (DYNAMICS). *Crit Care Med*. 2017;45:2061–9, <http://dx.doi.org/10.1097/CCM.0000000000002765>.
9. Brodsky MB, Nollet JL, Spronk PE, González-Fernández M. Prevalence, pathophysiology diagnostic modalities, and treatment options for dysphagia in critically ill patients. *Am J Phys Med Rehabil*. 2020;99:1164–70, <http://dx.doi.org/10.1097/PHM.0000000000001440>.
10. Fernando SM, Seely AJE. Post-extubation dysphagia. *Chest*. 2020;158:1806–7, <http://dx.doi.org/10.1016/j.chest.2020.08.2049>.
11. Brodsky MB, Pandian V, Needham DM. Post-extubation dysphagia: a problem needing multidisciplinary efforts. *Intensive Care Med*. 2020;46:93–6, <http://dx.doi.org/10.1007/s00134-019-05865-x>.
12. Zuercher P, Schenk NV, Moret C, Berger D, Abegglen R, Schefold JC. Risk factors for dysphagia in ICU patients after invasive mechanical ventilation. *Chest*. 2020;158:1983–91, <http://dx.doi.org/10.1016/j.chest.2020.05.576>.
13. Armas-Navarro LP, Santana-Padilla YG, Mendoza-Segura L, Ramos-Díaz M, Santana-López BN, Alcaraz-Jiménez JA, et al. La disfagia en cuidados intensivos, un problema real: análisis de factores de riesgo. *Enferm Intensiva*. 2022, <http://dx.doi.org/10.1016/j.enfi.2022.08.001>.
14. Zielske J, Bohne S, Brunkhorst FM, Axer H, Guntinas-Lichius O. Acute and long-term dysphagia in critically ill patients with severe sepsis: results of a prospective controlled observational study. *Eur Arch Oto-Rhino-Laryngology*. 2014;271:3085–93, <http://dx.doi.org/10.1007/s00405-014-3148-6>.

15. Zaragoza-García I, Arrogante O. Alimentación por sonda pospilórica versus sonda gástrica para la prevención de la neumonía y la mejora de los resultados nutricionales en adultos en estado crítico. *Enferm Intensiva*. 2020;31:96–8, <http://dx.doi.org/10.1016/j.enfi.2020.02.001>.
16. Nielsen AH, Kaldan G, Nielsen BH, Kristensen GJ, Shiv L. Egerod Intensive care professionals' perspectives on dysphagia management: a focus group study. *Aust Crit Care*. 2023;36:528–35, <http://dx.doi.org/10.1016/j.aucc.2022.04.004>.
17. Santana-Cabrera L, Rico Rodríguez J, Simón Bautista D, Santana-López BN, Alcaraz Jiménez J, Martín González JC. Perception of dysphagia in the ICU of Spain, diagnostic and therapeutic management. *Med Intensiva*. 2021, <http://dx.doi.org/10.1016/j.medin.2021.06.003>.
18. Crary MA, Mann GDC, Groher ME. Initial psychometric assessment of a functional oral intake scale for dysphagia in stroke patients. *Arch Phys Med Rehabil*. 2005;86:1516–20, <http://dx.doi.org/10.1016/j.apmr.2004.11.049>.
19. Dong Y, Hu B, Huang S, Ye T, Dong Q. The modified volume-viscosity swallow test as a predictor of aspiration pneumonia after acute ischemic stroke. *Clin Neurol Neurosurg*. 2021;200:106351, <http://dx.doi.org/10.1016/j.clineuro.2020.106351>.
20. Clavé P, Terré R, Kraa M, Serra de M. Approaching oropharyngeal dysphagia. *Rev Española Enfermedades Dig*. 2004;96:119–31, <http://dx.doi.org/10.4321/S1130-01082004000200005>.
21. Cichero JAY, Lam P, Steele CM, Hanson B, Chen J, Dantas RO, et al. Development of international terminology and definitions for texture-modified foods and thickened fluids used in dysphagia management: the IDDSI framework. *Dysphagia*. 2017;32:293–314, <http://dx.doi.org/10.1007/s00455-016-9758-y>.
22. Christensen M, Trapl M. Development of a modified swallowing screening tool to manage post-extubation dysphagia. *Nurs Crit Care*. 2018;23:102–7, <http://dx.doi.org/10.1111/nicc.12333>.
23. Omura K, Komine A, Yanagigawa M, Chiba N, Osada M. Frequency and outcome of post-extubation dysphagia using nurse-performed swallowing screening protocol. *Nurs Crit Care*. 2019;24:70–5, <http://dx.doi.org/10.1111/nicc.12359>.
24. Dallal York J, Miller S, Chapin J, Gore S, Jeng EI, Plowman EK. Swallowing screening practice patterns for nurses in the cardiac surgery intensive care unit. *J Clin Nurs*. 2020;29(23–24):4573–82, <http://dx.doi.org/10.1111/jocn.15490>.
25. Huang P, Hsu Y-C, Li C-H, Hsieh S-W, Lee K-W, Wu K-H, et al. Videofluoroscopy dysphagia severity scale is predictive of subsequent remote pneumonia in dysphagia patients. *Int J Med Sci*. 2023;20:429–36, <http://dx.doi.org/10.7150/ijms.76448>.
26. Miles A, Lee YY, McLellan N, Gillham M. Implementing a systematic care pathway for management of dysphagia after cardiothoracic surgery. *Intensive Crit Care Nurs*. 2022;70(November 2021):103224, <http://dx.doi.org/10.1016/j.iccn.2022.103224>.

Y.G. Santana-Padilla*, L. Santana-Cabrera
Complejo Hospitalario Universitario Insular
Materno-Infantil, Las Palmas de Gran Canaria, Canary
Islands. Spain

* Corresponding author.

E-mail address: yeraysantana@celp.es
(Y.G. Santana-Padilla).