

Short Communication

Artificial nutrition and prevention of pressure injuries for the management of fragile patients: A multidisciplinary integrated approach

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INTRODUCTION

Increased life expectancy, due to both improved socio-economic conditions and the use of increasingly effective and technologically advanced patient care, represents a significant challenge for health care services. They need to be restructured in order to manage the increased care burden for chronic degenerative diseases due to epidemiological transition.^[1,2] Therefore, the goal for health care organisations faced with an ageing population is not limited to reducing mortality and morbidity, but also needs to give priority to improving quality of life. In fact, older patients are often affected by several chronic conditions at the same time, which, if not treated correctly, can affect their quality of life, personal independence and mental health.^[3] The data from a survey conducted in Italy between 2017 and 2020 are in line with the above. Twelve per cent of over 65s and 21.9% of over 85s have a negative view of their health, with higher percentages in women, people with a lower level of education, those with greater financial difficulties and those who live alone.^[4] Approximately 60.8% of the over 65s interviewed had at least one chronic condition, while 25.7% had at least two, and 12.8% showed symptoms of depression.^[4] Furthermore, older patients are often fragile; *i.e.* they are more vulnerable to adverse events and suffer a progressive reduction in their intrinsic capacity.^[5] This condition has a prevalence of 18%, with discrepancies in the different care settings considered: approximately half of inpatients and outpatients are fragile, with a frequency almost four times higher than in individuals living at home.^[6,7]

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To suitably manage the care of older patients, which is more complex because of their numerous clinical conditions, it is necessary to consider patients on a holistic basis, analysing both their physical and mental condition, and overcoming the compartmentalisation of knowledge that has led to the hyper-specialisation of medicine in recent years. From this viewpoint, the principal tool is integration of the social environment with the health care setting and between different health care professionals, in order to bring patients and their needs back into the spotlight, using a holistic approach.^[8] Moreover, it is necessary to overcome the paradigm of waiting for acute diseases, combining the principle of preventive medicine that does not wait for a chronic and invalidating disease to manifest its most serious consequences, but rather acts precociously, making a timely diagnosis based on risk stratification and applying, whenever possible, appropriate preventive interventions and therapies, actively involving citizens and caregivers.^[8] In order to meet these needs completely, the azienda sanitaria unica regionale (ASUR, in English single regional health authority) has adopted two documents targeting health care professionals and aimed at implementing a correct management of certain conditions, which could seriously affect quality of life and worsen the health of patients, and that are strictly interconnected: pressure ulcers and artificial nutrition.

GOALS

The aim of this article is to describe the activities introduced by ASUR for improving the management of older patients in relation to two care-related problems that frequently arise both on at community level and in hospitals: pressure injuries and artificial nutrition. Correct management of these issues is a

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fundamental tool for guaranteeing maintenance of self-sufficiency and improvement of the quality of life of older patients, while minimising the principal risk factors and promoting suitable life-styles for all ages.

DISCUSSION

ASUR mission is to safeguard the health of citizens residing within the territory of the Marche, a region in central Italy, which has approximately 1.5 million inhabitants. On the one hand, the regional dimension of the ASUR facilitates homogeneity and access to the services offered, and on the other, integration between hospital and community-level care, also by using management procedures that are shared between the different levels of care. As the winning strategy in the challenge presented by chronic degenerative diseases in geriatric patients involves the

integration of health care professionals,^[9] ASUR has sponsored a multidisciplinary and inter-institutional working table to respond appropriately to health care needs. An inter-institutional document has therefore been created by experts on the prevention and treatment of pressure injuries, with the help of major regional experts on the matter.

The inter-institutional document aims to harmonise the knowledge and behaviours of operators, provide indications for the prevention and treatment of ulcers based on scientific evidence and adopt a single operational model in hospitals, nursing homes, rehabilitation centres and in the home care system to facilitate continuity of care between the different care levels.^[9] The incidence of pressure injuries is increasing due to the ageing population, the increasing spread of chronic degenerative diseases and the increased survival following acute events that result in invalidating clinical situations, but also because of poor health care when evaluating the risk and not adopting behaviours that could prevent their onset.^[10] The document identifies interventions that should be implemented in order to achieve the objectives, the level of evidence, the strength of the recommendations and the health care providers assigned to their implementation. The objectives and interventions are summarised in (Table 1).

Two surveys were conducted on the incidence of pressure injuries to assess the implementation and efficacy of the interventions listed in the inter-institutional document.^[11,12] In 2018 the total prevalence was 16.38% (95% CI 14.11%–18.89%) in the hospital setting and 29.84% (95% CI 25.69%–34.46%) at community level. Excluding lesions that were present at the time of admission to hospital, the prevalence was 8.10% (95% CI 6.53%–9.92%) in the hospital setting and 9.68% (95% CI 7.38%–12.45%) at community level, with no statistically significant difference. This survey made it possible to measure the phenomenon at time zero, when the recommendations made in the 2017 inter-institutional document had not yet been put into clinical practice.^[11] A specific training programme was therefore created with the aim of divulging and implementing an inter-institutional protocol and a second prevalence survey was conducted 12 months after the first one, to check the efficacy of the training imparted. The 2019 survey showed that patients classified as high or very high risk according to the Braden scale presented with a lower risk of developing a new lesion during their stay in hospital. This result confirms what is reported in the literature, *i.e.* that the high degree of care provided by the Braden scale can help to prevent the onset of new lesions, underlining the crucial importance of care-giving with regard to the individual patient's characteristics, and also the importance of promoting the assessment scales among health care staff.^[12,13] This approach of measuring the outcomes of the care-giving interventions has made it possible to assess the efficacy of the actions introduced with the implementation of the inter-institutional protocol. It is, nonetheless, important to highlight that the care-giving activities that are fundamental for the prevention of pressure injuries are not limited to hygiene and protecting the skin, but also include educating people on how to eat properly,

Table 1. Objectives and corresponding interventions listed in the inter-institutional document

Objective: to identify patients at risk of developing pressure injuries
Interventions:
<ul style="list-style-type: none"> • To assess the risk of developing pressure injuries using the Braden scale within six hours of admission to hospital; • To record all risk assessments and make them available to all the operators involved in treating the person; • To use the scales as a memory aid and not as a replacement of clinical judgement; • To periodically reassess the risk of pressure injuries and, if at the initial assessment the patient was considered not at risk, only repeat the assessment if there is a change in their clinical condition; • To eliminate or limit any pressure and friction that contribute to tissue damage; • To assess hydration and moisture of the skin (urinary and faecal incontinence and loss of biological substances from wounds can irritate the skin).
Objective: to maintain and improve the degree of tolerance of the tissue towards pressure in order to avoid injury
Interventions:
<ul style="list-style-type: none"> • Inspecting the skin of all patients at risk at least once a day, paying particular attention to bony protrusions and recording the inspections; • Reducing humidity and exposure to the cold to a minimum and treating dry skin with moisturising products, such as creams; • Not massaging the skin around bony protrusions; • Cleaning the skin as soon as it is soiled at regular intervals using delicate detergents; • Changing adult nappies often in cases of incontinence or sweating; • Recording any changes in the skin.
Objective: to position patients correctly. Mobilisation is the most important therapeutic action for preventing pressure ulcers and it must also be performed using anti-decubitus articles.
Objective: to reduce the incidence of pressure ulcers by using education programmes targeting operators
Interventions:
<ul style="list-style-type: none"> • Organising educational programmes for the prevention of pressure injuries; • Reporting on aetiology, risk factors and pressure injuries; • Teaching how to use risk assessment tools and how to apply them; • Training how to assess the skin; • Training on how to choose and use support systems; • Developing and implementing a tailor-made skin treatment programme; • Illustrating positioning techniques to reduce the risk of pressure injuries; • Instructing on the need to record the relevant data.

with weekly weight monitoring and recording of fluctuations in weight, ensuring that patients eat enough of the quality nutrients that are involved in the healing, revascularisation and tissue regeneration processes (proteins, vitamins, minerals). Moreover, if the person presents with severe dysphagia, the possibility of artificial nutrition should be considered. On the other hand, protein and calorie malnutrition is one of the main risk factors for developing pressure ulcers and nutritional screening is one of the few modifiable variables. Malnutrition is more common in more complex care-giving settings, it increases the risk of fragility and has been associated with cognitive decline, reduced ability to take care of oneself and a higher risk of becoming dependent on assistance.^[3,14] The recommendations of the literature provided in the document are:

1. Using a validated tool for assessing the nutritional status;
2. Performing nutritional assessments for all patients at risk of developing pressure ulcers or who already have pressure ulcers at start of treatment or when admitted to hospital, each time there is a change in the clinical conditions of the patient, or in case of worsening or non-improvement of pressure injury;
3. Having the nutritional team assess the nutritional status of all patients considered at risk of malnutrition.

Early detection of malnutrition using validated screening tools, such as the minimal nutritional assessment (MNA) or the malnutrition universal screening tool (MUST) also makes it possible to satisfy the nutritional requirements of patients with artificial nutrition at home, with evidently positive effects, including reintegration of patients in their family, social and work settings, reducing admissions to hospital and improving the quality of life of both the patients and their families. Given the importance of this subject, the ASUR has created a working table comprising professional experts in the sector, with the aim of defining a clear and homogeneous pathway for the hospital's entire catchment area, which will make it possible to set up and implement home artificial nutrition (HAN), particularly when patients are discharged from hospital. The working group has drawn up a technical document called "Management of home artificial nutrition", which identifies the dietetic and clinical nutrition service (DCNS) as the strategic stakeholder for providing assistance and management of patients, both on a community level and in the hospital setting. They have included a provincial dimension, in order to cater for the local organisational needs.^[15] The DCNS represents the multidisciplinary and multiprofessional unit that has the skills and human resources and materials necessary for implementing treatment with artificial nutrition. The professionals that make up the DCNS (physicians specialised in food science and dietetics, with more than five years of proven experience in artificial nutrition, dieticians and nurses) will be involved in a training programme based on the "management of home artificial nutrition" document drawn up. The pathway illustrated can be implemented both for direct management of home care and for setting up or continuing artificial nutrition following discharge from hospital. In the first case, if the patient's general practitioner suspects dysphagia or a change

in nutrition, they should request a visit with a speech-language pathologist, which will take place at home by the DCNS specialist who, in agreement with the other staff involved, will draw up the nutritional therapeutic programme, defining the objectives. If the nutritional goal is not achieved via the oral route, the physician nutrition specialist will suggest the most appropriate route for providing nutrition, based on the guidelines and in agreement with the relevant hospital specialists, such as endoscopists, surgeons and anaesthetists. Moreover, the DCNS monitors the patient, depending on the type of nutrition prescribed. Instead, when managing a patient who is discharged from hospital, the discharge should always be treated as a protected discharge, thereby requiring a multidimensional assessment and planning of home care. In both cases, patients or the relative/caregiver must be trained with a view to preventive medicine and citizen empowerment, including using tools such as manuals with information on handling the nutrition infusion system, the mixtures and the administration regimen as well on troubleshooting the most frequent problems. For example, in patients with dysphagia, it is very important to make the caregivers aware of the risk of aspiration pneumonia and the necessity to monitor food ingestion, reporting the warning signs and symptoms.^[16]

CONCLUSIONS

When drawing up the aforementioned documents on the prevention and treatment of pressure injuries and the management of home artificial nutrition, ASUR has adopted a multidisciplinary, multiprofessional approach aimed at overcoming inter-institutional barriers in order to provide the necessary continued care for fragile and older patients. The application of this method of professional integration, as advocated by the World Health Organization, results in continuously improving the quality of services and, above all, makes it possible to focus on the caring process for patients and their clinical complexity and fragility.

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Conflict of Interest

The authors declare no conflict of interest.

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