Nutrition and Hydration in Older Adults in Critical Care

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KEYWORDS

• Critical illness • Nutrition assessment • Enteral nutrition • Parenteral nutrition
• Hydration • Older adults

KEY POINTS

- Older adults are vulnerable to alterations in nutrition and hydration during critical illness.
- The best way to address nutrition and hydration challenges during critical illness is through a unified approach with a multidisciplinary team consisting of physicians, nurses, dietitians, pharmacists, physical therapists, speech therapists, and respiratory therapists, as well as the patient and family caregiver.
- Nurses often provide one-to-one care for critically ill older adults and are in a unique position to promote nutrition and to monitor and evaluate the effectiveness of therapy.
- As the science and practice of gerontologic nursing expands to meet the needs of the increasing critically ill aging population, further research is needed to address nutrition and hydration in critically ill older adults.

INTRODUCTION

As the number of older adults continues to increase in the United States, so will those who require critical care during the course of hospitalization.[1] Experts predict that the largest proportion of beds in intensive care units (ICUs) will be occupied by older adults,[1] and the oldest old (≥80 years) will account for in 1 in 4 admissions to the ICU.[2] Respiratory insufficiency/failure, postoperative management, ischemic heart disorder, sepsis, and heart failure are the most common reasons for ICU admissions[3] and are likely to continue as more older adults are admitted to the ICU. In order to improve outcomes of critically ill older adults, ICU nurses must address the unique needs of the older adult during critical illness.

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Nutrition and fluid balance are vital components of critical care nursing. However, meeting the nutrition and hydration needs of the critically ill older adult is often complex because of preexisting risk factors (malnutrition, unintentional weight loss, frailty, and dehydration); as well as ICU-related challenges (catabolism, eating and feeding, end-of-life care). This article highlights the challenges of managing nutrition and hydration in the critically ill older adult, reviews assessment principles, and offers strategies for optimizing nutrition and hydration.

PREEXISTING NUTRITION AND HYDRATION CHALLENGES

Malnutrition

Before even entering the ICU, older adults are at risk for malnutrition (undernutrition), because of dietary, economic, psychosocial, and physiologic factors.[4] Malnutrition is associated with increased costs, as well as adverse health outcomes, which include poor wound healing, infections, postoperative complications, increased length of stay, prolonged mechanical ventilation, and mortality.[4–8] Although 12% to 72% of hospitalized older adults have malnutrition, or are at risk for malnutrition,[6] little is known about the prevalence of malnutrition in older adults on admission to the ICU. Recently, Sheean and colleagues[9] reported the prevalence of malnutrition in older adults admitted to a medical or surgical ICU at 23% to 34% using the Mini-Nutrition Assessment (MNA), Subjective Global Assessment, and Nutrition Risk Score 2002. Older adults who are already at nutritional risk can have a rapid decline in nutritional status during an ICU stay if appropriate nutritional interventions are not implemented in a timely fashion.

UNINTENTIONAL WEIGHT LOSS

Unintentional weight loss is not a normal part of aging,[10] and can occur in isolation[11] or as a component of geriatric syndromes such as malnutrition (undernutrition),[12] frailty,[13] as well as sarcopenia,[14] cachexia,[14] and inflammatory conditions.[14] Unintentional weight loss is associated with hospital readmissions[15,16] and falls[17,18] and increases the risk for death.[19–21] The danger of weight loss in older adults is the loss of lean mass or muscle, which results in a decline in functional status.[10,22–24] A weight loss of 5% of usual body weight during 6 to 12 months is the most widely accepted definition for clinically important weight loss in noninstitutionalized older adults.[25] Interventions primarily focus on treating risk factors for unintentional weight loss, as well as optimizing nutritional intake.[26,27] Appetite stimulants may be used in older adults with unintentional weight loss in long-term care settings,[26] but there is little guidance regarding their use during the critical care phase of the illness trajectory.

Frailty

The prevalence of preexisting frailty in critically ill older adults is unknown; however, experts suggest that it will likely increase as more older adults are admitted to the ICU.[28] Frailty is defined as "a biological syndrome of decreased reserve and resistance to stressors, resulting from cumulative declines across multiple physiological systems, and causing vulnerability to adverse outcomes."[13(ppM146)] Frailty exists when at least 3 of the following symptoms are present: weakness, slow walking speed, low physical activity, unintentional weight loss, and exhaustion.[29] Older adults who present to the ICU with frailty have poor physiologic reserve and may not withstand the increased physiologic demands from the underlying critical illness. Frail older adults can have a rapid decline in their functional status, leading to disability and prolonged recovery time after critical illness. Recently, McDermid and colleagues[28]