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DYING FOR A DRINK: DEHYDRATION IN RESIDENTIAL AGED CARE FACILITIES

Following sensational newspaper reports on the ‘scandal of dehydrated elderly rushed to hospital’ from residential aged care facilities (RACF) in England¹ and with the release of the NHS England document *2015-2018 Guidance - commissioning excellent nutrition and hydration*,² last year, the spotlight has been placed very firmly on residential aged care facilities (RACF) and hydration.

Dehydration is defined as: ‘a state in which a relative deficiency of fluid causes adverse effects on function and clinical outcome’. In the elderly, being short of fluid is far more common resulting from limited fluid intake, and is reflected in raised osmolality.²

Dehydration in elderly people is particularly problematic and can lead to poor health outcomes such as constipation, poor oral hygiene, increased rate of infection, falls, medication toxicity and more frequent hospitalisation. Dehydration in older people is preventable and can have a significant impact on quality of life. Many frail older people are not drinking sufficient fluid to maintain adequate hydration. As a result, the risk of dehydration is increased in residents living in aged care facilities.³ In a recent UK study⁴ involving 21,610 subjects, it was found that the odds of dehydration being diagnosed at hospital admission from RACF were 10 times greater than in elderly subjects being admitted to hospital from their own homes. Residents in RACF with dementia, diabetes and kidney problems are at most risk of dehydration.⁵

Although inadequate hydration, along with malnutrition, is one of the most longstanding and pressing problems in nursing homes, there is little research on the prevalence either of borderline or overt dehydration.⁶ The current scope of dehydration in RACF in the United Kingdom is unknown, however, one recent study conducted in a single NHS

Trust in 2015 found that one in five residents was clinically dehydrated.⁵

AT RISK ELDERLY

Adequate intake of ‘total water’ comes from the combined intake from drinking water, other beverages and food sources. Approximately 60% of total water intake comes from fluids, 30% comes from moist foods and the remaining 10% is produced by the body’s metabolism.⁷ Optimal daily fluid intake depends on various factors, including weight, health status and energy expenditure, therefore; there is no single recommended daily intake (RDI) for adults.⁸ Some current guidelines suggest a minimum of 1,500ml of fluid daily for an older person.³

Elderly people are more at risk of suffering from dehydration for a number of reasons. These vary depending on each case. Age-related changes and problems put older people at increased risk of not drinking sufficient fluid to meet their daily requirements. With age, body water content decreases and with this decrease, the body becomes more susceptible to dehydration from the loss of a small amount of body water. There is also less renal mass with age, reflecting glomerular sclerosis and glomerular loss, with a consequent reduced ability to control the balance of both sodium and water, resulting in an increased incidence of dehydration.⁹

Fluid losses through diarrhoea, vomiting, diuretics, fever, sweating, heat and humidity can also contribute.

Table 1: Early signs of dehydration

Dry mouth
Thirst
Confusion
Headaches
Darker urine
Reduced urinary output
Hypotension and dizziness
Falls
Weakness
Urinary tract infections
Cramps
Dry skin and loss of skin recoil time
Irritability
Fever
Malaise
Constipation

Limitations in oral intake can be due to reduced thirst sensation, dysphagia, (requiring modified fluids or food), reluctance to drink to manage incontinence, reduced cognition, poor mobility and reduced functional capacity, limited access to fluids and reliance on staff to assist with oral intake. Residents who must be fed are at particularly high risk. Medications and polypharmacy can also contribute to dehydration risk.

Early recognition of dehydration is a priority and the key to a speedy recovery. Mild to moderate dehydration in elderly people can be easily missed. Often dehydration is not diagnosed in the elderly until they are admitted to hospital.⁵

In the older adult, dehydration often causes atypical symptoms which contribute to delayed recognition. Early (or mild to moderate) signs include dry mouth, thirst, confusion, headaches, darker urine, reduced urinary output, hypotension and dizziness, falls, weakness, fatigue, urinary tract infections, cramps, dry skin and loss of skin recoil time, fever, irritability, malaise and constipation. Confusion, constipation and falls are part of the very frequently occurring ‘geriatric giants’ and, therefore, their specificity as a single parameter is far too low to be useful in diagnosing dehydration.¹⁰ Classical signs of dehydration such as loss of skin recoil time, increased thirst and orthostatic hypotension, have a low sensitivity in older adults (60-75%).¹¹

Table 2: Consequences of dehydration in residents

Increased hospitalisation
Increased mortality
Constipation
Reduced cognition function
Falls
Poor wound healing
UTIs
Hyperthermia
Orthostatic hypotension

DEADLY CONSEQUENCES

Dehydration in the elderly can result in poor health outcomes. If not identified and treated, the health consequences are significant, even life-threatening. Several studies support that dehydration is associated with increased mortality rates among hospitalised older adults.³ In older adults with multiple comorbidities, dehydration can lead to more frequent hospitalisations.¹² Dehydration can also result in comorbidities including urinary tract infections, constipation, impaired cognitive function, falling, orthostatic hypotension and poor wound healing.¹³

Over half of all nursing home residents are thought to be affected by urinary incontinence. Many older people limit their fluid intake in an attempt to prevent urinary incontinence or the need to go to the toilet overnight, known as nocturia. This strategy has little or no effect on these bladder symptoms and may worsen for some individuals.¹⁴ Reduced urine flow from inadequate fluid intake is one factor that puts the older person at greater risk of developing urinary tract infections.

Constipation is common in the long-term care setting because of limitations on patient mobility and food and fluid consumption.¹⁵ Constipation can be an indication of functional dehydration, an issue for elderly patients whose food and fluid consumption tends to be limited and for those who limit fluid intake to control urinary incontinence.

Hydration status and cognitive function in the elderly is an area which warrants more research. In healthy adults, being dehydrated by just 2% impairs performance in tasks that require attention, psychomotor and immediate memory and working memory tasks, as well as assessment of the subjective state.⁹ In the

elderly, dehydration has been associated with cognitive problems (i.e. confusion and impaired cognition)⁶

Falls can be associated with dehydration associated with resulting confusion and disorientation and/or postural hypotension. Dehydration has been identified as a causative factor in fragility factors.¹⁶

Dehydration renders elderly skin vulnerable to infection or wounding resulting from trauma. Dehydrated skin is less elastic, more fragile and more susceptible to breakdown. Dehydration can also contribute to delayed wound healing due to poor oxygen perfusion, essential nutrients not being delivered to the wound surface and draining inefficiency.

It has been shown that rehydration, has demonstrated a beneficial effect on conditions such as poor wound healing and hypotension.¹⁷

ADDRESSING THE PROBLEM OF DEHYDRATION

Prevention is key when managing dehydration in RACF. Adequate screening and training programs should be in place to assist early identification. Practical strategies should also be employed in RACF to ensure hydration targets are met.

The NHS England document *2015-2018 Guidance - commissioning excellent nutrition and hydration*,² recommends a strategy for commissioners for tackling the nutrition and hydration needs of the population which includes developing quality frameworks to support provider organisations in putting nutrition and hydration at the heart of care.

The reference (or gold) standard measurement for hydration is serum osmolality, assessed using blood samples.¹⁴ This method is considered invasive and costly. Dehydration in older people could be accurately identified as part of routine blood testing, according to a study from the University of East Anglia (UEA).⁵ Results from this study suggest that routine blood tests for sodium, potassium, urea and glucose could be used to screen for dehydration by putting the results of these tests through an 'osmolality equation'. Current screening for dehydration in RACF remains largely observational. RACF staff should be familiar with the recommendations outlined in the Francis report (2013),¹⁸ which

highlights the need for proper records to be kept of the food and drink supplied and consumed by older patients. Residents should be routinely monitored for signs of dehydration. A fluid balance chart should be started for all patients who are acutely unwell or considered at risk of dehydration.

Development of hydration policies in individual RACFs is a crucial component of interventions to prevent dehydration. These policies should be put in place with accompanying education and awareness programs for staff, residents and families.

Strategies which may be employed to reduce dehydration risk include:

- Offer and encourage water and preferred fluids at each mealtime.
 - When giving medicines, give with slightly larger volumes of water (or use standardised amounts).
 - Encourage small sips through the day; individual pre-measured fluid targets can be useful.
 - Provide hot drinks and consider drink variety (e.g. water and lemon), for residents who prefer hot drinks.
 - Encourage morning fluid consumption for residents who are afraid of late night toilet visits.
 - Use fluid intake tools - electronic and paper based records.
 - Educate care givers and family regarding the importance of hydration.
 - Ensure functional issues are catered for - e.g. glasses not too heavy, adapted cups, straws
- Provide physical assistance as needed - adequate staffing levels and time allocated to achieve this.
- Provide drinks during group and social activities.
 - Encourage recognition and communication of dehydration symptoms.

Adequate hydration for residents in RACF should be considered a safeguarding issue. Ensuring adequate hydration for the elderly requires the involvement of the entire interdisciplinary team. The dietitian not only has a key role in developing malnutrition screening tools, local policies and education, but also in doing so for hydration in RACF.