

Detecting and Preventing Dehydration in Alzheimer's Patients in Nursing Homes: A Case Study Approach

This article was published in the following Scient Open Access Journal:

Journal of Alzheimer's Parkinsonism & Dementia

Received January 10, 2018; Accepted January 23, 2018; Published January 29, 2018

Andrea Jennings Dr.PH., RN

Senior Nurse Researcher-Geriatric Research
Education and Clinical Center, Louis Stokes
Department of Veterans Affairs Medical Center
Cleveland, Ohio, USA

Introduction

Dehydration can be a serious undetected condition for Alzheimer's patients in nursing homes [1]. Dehydration is a result of loss of body fluids or insufficient fluid intake [2]. Alzheimer's patients in nursing homes with cognitive impairment may lose their ability to recognize thirst, therefore increasing their risk for dehydration [3]. Nursing staff may not be recognizing the signs or symptoms of dehydration in a timely manner or may be completely overlooking the fact that the patient is suffering from dehydration. Moreover, Alzheimer's patients may not be able to verbalize their symptoms to alert the nursing staff that dehydration is a possible problem. Nursing home patients who are dehydrated and who are left untreated may have an increased rate of hospital admissions and emergency room visits [4]. In addition, dehydration may cause a patient to have a poor quality of life as the individual may suffer from poor cognition, falls, delirium, and frailty [5,6]. The following case study highlights how dehydration can manifest in an Alzheimer's patient in a memory care unit at a nursing home.

Case Study

Mrs. Smith is an 85 year old woman of Asian descent. She is a resident of a memory care unit at a nursing home. Mrs. Smith is in the later stage of Alzheimer's disease and has been on the unit for one year. Mrs. Smith has a history of hypertension and gout. She does not have any hearing or visual impairments. She is able to ambulate independently. Her cognitive status has declined since she has been admitted to the memory care unit. She is not oriented to time or place; however she can state her name when asked. Overall, Mrs. Smith is pleasant and likes to engage with the other residents. Mrs. Smith has a daughter who lives in the same town and who visits on a regular basis. Mrs. Smith is a selective eater and she prefers to drink hot chocolate during her meals. She drinks hot chocolate from a straw that is placed in a coffee mug; however she needs assistance with keeping the straw stable. She asks her daughter for water every time she visits. In the past week, her daughter notices that Mrs. Smith is unable to follow simple commands that she could ordinarily do. She is complaining of being thirsty but is only taking tiny sips of water. The nursing staff is constantly mandating that Mrs. Smith drink fluids and they have become frustrated because Mrs. Smith is not drinking. Mrs. Smith sips small amounts of Ensure (a nutritional drink) which is given to her in a small medication cup during medication administration. Another week passes and the nurse manager contacts Mrs. Smith's daughter to tell her that her mom is not drinking and that Mrs. Smith is angry at the staff when they encourage her to drink. The daughter now notices that her mom is sleeping more and is not able to walk down the hall as she usually does. Mrs. Smith nearly falls when her daughter is taking her to the bathroom, which has never happened before. Her daughter notices that her mother's eyes are sunken, her lips are dry, and she is urinating in small amounts of dark amber urine. Mrs. Smith's daughter approaches the nurse manager on the unit and expresses her concern that she thinks her mom is dehydrated. The nurse assesses Mrs. Smith and documents a low systolic blood pressure of 96, dry mucous membranes, a capillary refill time of greater than three seconds, and sunken eyes. The physician is notified and he orders blood work. The following results indicate that Mrs. Smith is indeed dehydrated: Blood Urea Nitrogen (BUN): 30 mg/dl, Plasma Osmolality: 317 mOsm/kg, Sodium: 152 mEq/L, Potassium: 5.2 mEq/L, Chloride: 112 mEq/L, and Bicarbonate: 31

*Corresponding Author: Andrea Jennings Dr.PH.,
RN, Senior Nurse Researcher-Geriatric Research
Education and Clinical Center, Louis Stokes
Department of Veterans Affairs Medical Center, 10701
East Boulevard 111C(W), Cleveland, Ohio, USA,
Fax: 441106, Email: andrea.jennings2@va.gov

Table 1: Lab Value Ranges for Dehydration.

Sodium	135-147 mEq/L
Potassium	3.5-5.2 mEq/L
Chloride	95-107 mEq/L
Bicarbonate	19-25 mEq/L
Creatinine	0.5-1.4 mg/dl
BUN	7-20 mg/dl
Plasma Osmolality	289-308 mOsm/kg

Source: Laboratory Values. Available at website : <http://www.globalrph.com/labs.htm>

mEq/L. The physician orders intravenous fluids for three days. Mrs. Smith improves remarkably after the intravenous fluids and her symptoms of dehydration subside.

Discussion

An educational initiative directed towards the nursing staff is essential in order for them to understand the importance of hydration, recognize the signs and symptoms of dehydration readily, and to become aware of interventions that can be used to enhance one's hydration regimen. In this case, Mrs. Smith is of Asian descent and it would be important for the staff to be aware of her food and drink preferences based on her culture. Consulting her daughter about these preferences and other cultural considerations should be a priority. Mrs. Smith in this example is only offered hot chocolate on a regular basis but there should be a variety of drinks offered to her. The fact that she is asking her daughter to bring in water is concerning. Water should be offered to all residents on a regular basis throughout the day. Dedicating a nursing assistant to offer drinks throughout the day to the residents may be an option. Making drinking into a social activity versus a chore may be helpful to Mrs. Smith since she enjoys engaging with others. Offering drinks in a cup, that is easy to manipulate is also of paramount importance. Mrs. Smith is having difficulty drinking from a straw and so having an appropriate drinking cup is essential. The fact that Mrs. Smith does not have visual or hearing impairments works in her favor; however these impairments must be assessed over a period of time in case there are changes. Having visual and hearing impairments could further complicate getting a resident to drink fluids and present additional challenges to the nursing staff. Since Mrs. Smith is taking sips of liquids it may be prudent for her to have a swallowing evaluation to determine if there is an underlying problem that needs to be addressed. Mrs. Smith is being offered a small amount of a nutritional drink when she

is taking her medications, however this may be an opportunity for the nurses to give her a larger amount of fluids for hydration purposes.

The fact that the daughter knew the signs and symptoms of dehydration is a positive factor in this case and her knowledge may have prevented a hospitalization stay for her mother. Involving family members in the hydration regimen and educating them about the signs and symptoms of dehydration is a worthwhile strategy that nurses can implement. Frustration among the nursing staff may be diminished if perhaps each resident had a plan of care for hydration. This plan could assess the physical, psychological, cultural, and social barriers that may be impacting one's hydration status and interventions to help combat each barrier.

Conclusion

Thus, dehydration among patients with Alzheimer's disease is an issue that nursing staff must recognize. Nursing staff should receive the appropriate education in order to address the issue of dehydration with this population. Having a plan of care for hydration for each patient may identify the barriers of hydration and lead to interventions that are needed to decrease the risk of dehydration. Interventions to overcome these hydration barriers must be developed, implemented, and evaluated not only by the nursing staff but by the family members. This collaborative effort may decrease the chances of a patient from becoming dehydrated and having to be treated for dehydration.

References

1. Hooper L, Bunn D. Hydration 1: detecting dehydration in older people: useful tests. *Nurs Times*. 2015;111(32-33):12-16.
2. Begum MN, Johnson CS. A review of the literature on dehydration in the institutionalized elderly. *Eur E J Clin Nutr Metab*. 2010;5:e47-e53.
3. Davies I, O'Neill PA, McLean KA, et al. Age-associated alterations in thirst and arginine vasopressin in response to water or sodium load. *Age Ageing*. 1995;24(2):151-159.
4. Phelan EA, Borson S, Grothaus MS, et al. Association of incident dementia with hospitalizations. *JAMA*. 2012;307(2):165-172.
5. McCrow J, Morton M, Travers C, Harvey K, Eeles E. Associations between dehydration, cognitive impairment, and frailty in older hospitalized patients: an exploratory study. *J Gerontol Nurs*. 2016;42(5):19-27.
6. Bockvar K, Signor D, Ramaswamy R, Hung W. Delirium during acute illness in nursing home residents. *J Am Med Dir Assoc*. 2013;14(9):656-660.