

Nurses' perceptions about hypodermoclysis to support rehydration among older people with dementia

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Abstract

Aim: The aim of this paper was to evaluate nurses' attitudes to hypodermoclysis used for rehydration in older people with terminal phase of dementia.

Methods: A qualitative study was carried out among 16 nurses of the psychogeriatric ward in Mental Hospital of Kromeriz, Czech Republic, from January 2013 to January 2014. Unstructured interviews were used to collect information about nurses' attitudes toward hypodermoclysis in elderlies with terminal phase dementia. Content analysis was used to analyze the provided answers.

Results: All nurses appreciated spare of time and effortlessness of subcutaneous application compared to intravenous application. All of them reported a highly comfort of such application for the patients. Twelve nurses (75%) reported initial disbelief in effectiveness of hypodermoclysis. Hypodermoclysis complications such as local edema, local infection, and local erythema were rare and at case report level.

Conclusion: Hypodermoclysis is welcomed by nurses and it has been well-tolerated by patients with terminal phase of dementia with low rate of complications. We recommend this method for palliative care rehydration.

Keywords: elderly, hypodermoclysis, older people, palliative care, rehydratation, terminal phase of dementia.

Introduction

Seniors are more vulnerable to suffer from dehydration compared to the general population (1). Threshold of thirst perception is usually altered in elders. This may lead to decreased need of peroral fluid intake (1,2). Other triggers of dehydration are environmental conditions (warm weather, no access to beverages), unsuitable medication use (polypharmacy including diuretics) or various pathological conditions such as diarrhea, increased sweating during fever, vomitus, interstitial leakage of fluid which can be observed in ascites, or generalized edema (3). Risk of dehydration can be detected in patients in post-operative care, patients undergoing hemodialysis, or patients with terminal nephrotic illness (4). Dementia is a common neuropsychiatric condition in elderly. The prevalence of dementia is increasing all over the world alongside with ageing populations. Approximately 5% of seniors at the age of 65 years suffer from dementia of any type, whereas by the age of 80 years this figure rises to about 25%-30%. In case of severe cognitive impairment, seniors cannot verbally express what they feel or what they need, being thus unable to report thirst and exposed to dehydration (5).

Hypodermoclysis is a safe and comfortable technique for fluid replacement in patients with terminal phase of dementia. The technique of hypodermoclysis is very easy; special training in hypodermoclysis is not required. The needle (Braunule 22G cannula) is just put subcutaneously in the abdominal region of the patient under sterile conditions, with no special control required. The subcutaneous application of the needle in hypodermoclysis is similar to other subcutaneous applications such as the case with insulin, or heparin (6).

The literature suggests that beliefs and attitudes of health care personnel (physicians, or nurses) about artificial hydration are important with regard to the decision-making process by both patients and their families (7,8). In this context, the aim of this study was to assess nurses' attitudes toward hypodermoclysis, which was used for rehydration in older people with terminal phase dementia in psycho-

geriatric ward, Mental Hospital in Kromeriz, Czech Republic.

Methods

Design and setting

This is a qualitative, open and unblended study, carried out in the premises of the women psychogeriatric ward in Mental hospital Kromeriz, Czech Republic, from January 2013 to January 2014. Nurses (N=16) caring for terminally ill seniors with dementia (N=48) were interviewed about their attitudes toward hypodermoclysis.

Data collection and analysis

A qualitative research method has been used in this study. Unstructured interviews were employed to identify nurses' experience with hypodermoclysis and side effects of hypodermoclysis. The nurses' answers were recorded on dictation tape recorder and transcribed. These transcribed answers were analyzed by means of the method of content analysis (axial coding to follow main categories and their frequency analysis).

Nurses were asked to answer several questions exploring their beliefs and attitudes toward this artificial hydration technique: A. *What is your general experience with hypodermoclysis for rehydration of patients with terminal phase of dementia?*; B. *Do you think hypodermoclysis is suitable for rehydration of seniors with terminal phase of dementia in your routine practice?*; C. *According to your opinion, what are the main advantages and disadvantages of hypodermoclysis?*; D. *Did you come across any complications during hypodermoclysis?*; E. *How often has this complication(s) occurred?*

The length of the interview varied from 30 to 45 minutes. All subjects agreed to participate in the research and all of them signed an informed consent form.

In addition, all answer categories have been coded and counted. Each specific category was taken into account. Frequency analysis of answers has been done using Microsoft Excel 2007 software.

Results

Nurses' perceptions of hypodermoclysis

Nurses' perceptions of hypodermoclysis are presented in Table 1. All nurses appreciated spare of time and effortlessness of subcutaneous application

compared to intravenous application. All of them reported that this technique was highly comfortable to the patients. Twelve nurses (75%) reported initial disbelief in effectiveness of hypodermoclysis as they had no prior experience with this method.

Table 1. Nurses' perceptions of hypodermoclysis

	Spare of time	Effortlessness of procedure	Comfort for a patient	Initial disbelief in intervention	Effectiveness of rehydration
Number	16	16	16	12	10
Percentage	100	100	100	75	62.5

Side effects of hypodermoclysis according to nurses' experience

Nurses' reports about the side effects of hypodermoclysis are presented in Table 2. Most of the nurses reported no negative experiences with hypodermoclysis. For example, among 48 women

with terminal phase dementia, in 44 of them no side effects were noticed by the nurses. In a minority of cases, nurses noticed local edemas, local infections and local erythemas when rehydrating the terminally ill patients with hypodermoclysis (Table 2).

Table 2. Side effects of hypodermoclysis according to nurses' experience

	No side effects	Local edema	Local infection	Local erythema
Number	44	2	1	1
Percentage	91.6	4.2	2.1	2.1

Discussion

Dehydration in patients with terminal phase of dementia is a severe nursing and clinical condition. If rehydration is not provided early enough, dehydration in these patients may lead to a confusional states (delirious states), higher risk of infection of urinary tract, disturbed homeostasis (electrolyte imbalance, renal dysfunction), higher risk of falls (due to hypotension), higher risk of cardiac failure (as a result of electrolyte imbalance, decreased preload, reactive tachycardia in hypotension), or acceleration of the frailty phenomenon (9). These complications may lead to a worsening of the quality of life for both the patients and their caregivers (10). Comfortable ways for rehydration and nutrition supply are required as recommended in ESPEN guidelines (11). All the staff should be aware of the risk of

developing dehydration in elderly people and rehydration should be imperative for any caregiver. Furthermore, safe and comfortable ways of rehydration should be preferred. Hypodermoclysis is one of these safe and patient friendly techniques of fluid replacement (1,2) and may contribute to better quality of life in patients with a terminal phase of dementia (12).

Our experience with hypodermoclysis rehydration

Hypodermoclysis was introduced in our psychogeriatric department in January 2012 as a new experience obtained from benchmarking practice in palliative care facilities in Czech Republic (Rajhrad and Břilovec hospital). Subcutaneous rehydration is administered daily to patients with

terminal phase dementia who refuse peroral intake of food. We use isotonic infusate (natrium chloratum infusio isotonica), total volume applied to a patient is 1-2 liters of infusate subcutaneously/24hours. According to our experience, the needle should be changed after each day of subcutaneous rehydration to prevent local infection. In case of local edema, subcutaneous rehydration should be stopped and the needle should be placed in a different position.

To discuss the preliminary results of the study, we may report that nurses were initially skeptical about hypodermoclysis, but their attitudes have changed. They reported many benefits of hypodermoclysis such as spare of time, effortlessness of this procedure, better comfort to a patient and a good side-effect profile. A similar study coming from inpatient psychiatric facility has not been done in Czech Republic at all. Research out of the Czech Republic in this field was done mostly among seniors in long-term care facilities. Based on results of this study, we agree with Polez and Reyes-Ortiz (2), as well as with Worobec and Brown (3) that hypodermoclysis is a comfortable method for fluid replacement in cases of mild or moderate dehydration. According to the preliminary

Conflicts of interest: None declared.

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results of this work, a low rate of complications related to hypodermoclysis was found, which is in accordance with Stastna et al. (1).

This study has several limitations. The most obvious limitation of the present study comprises its design (open, non-blinded, non-randomized study), with no gender aspect goals (the study was conducted among women in psychogeriatric wards, whereas men were not included in this study). Therefore, any generalization of the observed results should be made with caution because of the limited extent of the study which included only 48 patients with terminal phase dementia. A multicentric randomized study monitoring safety and effectiveness of hypodermoclysis among seniors with terminal phase of dementia is needed.

Conclusion

Upon results of the study, our nurses reported spare of time, comfort for patients, and effortlessness of subcutaneous application compared to intravenous application of artificial hydration. Hypodermoclysis should be considered as a suitable and comfortable procedure for fluid replacement in terminally ill older people with dehydration.

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