

#405 Intermittent catheterizations in patients with dementia. Correlations of complications with the disease stage.

Samarinas M1, Konstantinidis C2, Moschidis I1, Bousdroukis N1, Kalogiannis D1, Skriapas K1

1.General Hospital of Larissa, 2.National Rehabilitation Center, Ilion, Athens, Greece

ABSTRACT

Aims of the study

Dementia is one of the most common diseases in the elderly. Usually, refers to the reduction of cognitive function leading even to a total inability with the basic everyday activities. A common consequence for dementia patients are voiding symptoms while some of them are for need of intermittent catheterizations due to their substantial post void residuals. The aim of our study is to determine which is the most appropriate provision of safe care for these patients, in order to have the minimum of complications when catheterization is an appropriate therapy.

Materials and Methods

This is an observational study over the complications of intermittent catheterizations (IC) in patients with dementia, in relation with the disease stage. The inclusion criteria included all patients referring to our center from December 2016 to December 2018 with a diagnosed dementia type and in any stage of the disease. This group of patients was examined with non-invasive urodynamic test, including frequency volume chart, bladder ultrasound and uroflowmetry and according to the findings were advised for therapy. Patients with a post void residual (PVR) over 150ml, without a clear bladder outlet obstruction and non-eligible for invasive treatment were counseled for IC, either self-catheterization or by their caregivers. Dementia stage has been evaluated according to the Global Deterioration Scale (GDS), which determines their ability of independence in everyday activities. GDS consists of seven levels of independence; the level 1 refers to patients subjectively and objectively normal and fully independent, while level 7 refers to patients with severe dementia, needing complex care. Patients of levels 1-3 are usually totally independent and those of levels 4-7 are in need of caregiving, with the necessity of care setting to increase with the dementia stage. Eligible individuals were under surveillance for six months, focusing on their compliance with the treatment and IC complications, such as urinary tract infections (UTIs), hematuria and hospitalization. The collected data were statistically analyzed with SPSS v23.0, following the Wilcoxon test for non-parametric samples.

Results

Overall 73 patients with dementia visited our center in the predefined period and finally 36 of them (mean age: 74.73 years, range: 71-77) were eligible for our study. The mean PVR was 255.5ml. The 94.4% (34 patients) of them were diagnosed with Alzheimer disease and only 2 patients had a Lewy Bodies dementia. More specifically, they were 24 men with a mean age of 73.75 years (range: 71-77) and mean PVR: 295.5ml and 12 women with a mean age of 75.71 years (range: 72-77) and mean PVR: 215.5ml. Regarding GDS classification, 20 of patients (55.6%) were at levels 1-3 and all of them were self-catheterized, while the rest 16 (44.4%) were at levels 4-7 being catheterized by their caregivers. Among the more independent patients, there were 14 men (70%) and 6 women (30%), while in patients with more advanced disease, there were 10 men (62.5%) and 6 women (37.5%). During the follow-up period, only one male patient in GDS level 7 abandoned treatment with IC, remaining with a permanent catheter. Among the rest 35, there were 5 cases of uncomplicated UTIs (4 in self-catheterized and 1 in dependent-catheterized patients, 3 in men and 2 in women). Furthermore, there were 16 cases of minor hematuria, all in male patients, 11 in self-catheterized and 5 in dependent-catheterized ones. None of the patients needed hospitalization. Comparing patients with a low GDS to those with a higher score, there is a statistically significant difference in the era of UTIs and hematuria, in favor of care-giving catheterization ($p=0.01$ and $p=0,006$ respectively).

Interpretation of results

The pre-mentioned findings indicate that patients with dementia experience difficulties in self-catheterization, although some of them seem to be highly independent and mostly equally capable with the general population. Considering that care-giving is absolutely necessary for patients with more disabilities, seems that the level of educated care-givers is of high importance.

Conclusion

Intermittent catheterization is a safe treatment option in dementia patients with high PVR, even in those with a high GDS. Interestingly, catheterization by care-givers seems to be safer than self-catheterization even in more independent patients.

METHODS

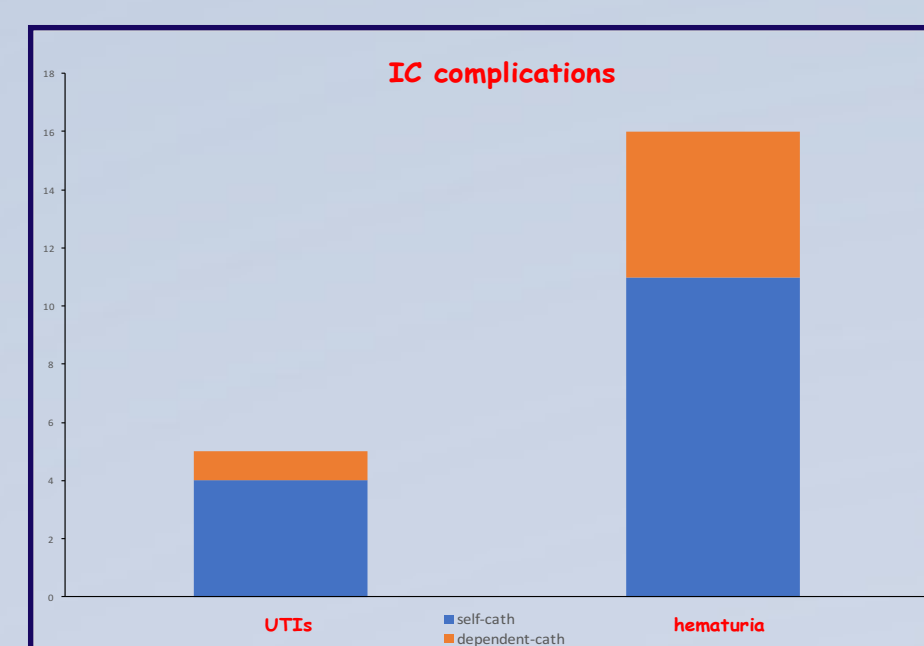
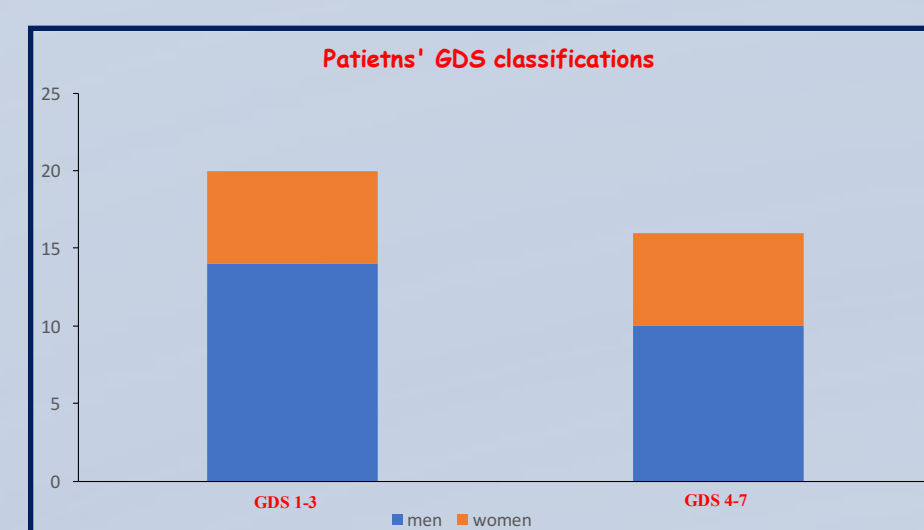
This is an observational study over the complications of intermittent catheterizations (IC) in patients with dementia, in relation with the disease stage. The inclusion criteria included all patients referring to our center from December 2016 to December 2018 with a diagnosed dementia type and in any stage of the disease. This group of patients was examined with non-invasive urodynamic test, including frequency volume chart, bladder ultrasound and uroflowmetry and according to the findings were advised for therapy. Patients with a post void residual (PVR) over 150ml, without a clear bladder outlet obstruction and non-eligible for invasive treatment were counseled for IC, either self-catheterization or by their caregivers. Dementia stage has been evaluated according to the Global Deterioration Scale (GDS), which determines their ability of independence in everyday activities. GDS consists of seven levels of independence; the level 1 refers to patients subjectively and objectively normal and fully independent, while level 7 refers to patients with severe dementia, needing complex care. Patients of levels 1-3 are usually totally independent and those of levels 4-7 are in need of caregiving, with the necessity of care setting to increase with the dementia stage. Eligible individuals were under surveillance for six months, focusing on their compliance with the treatment and IC complications, such as urinary tract infections (UTIs), hematuria and hospitalization. The collected data were statistically analyzed with SPSS v23.0, following the Wilcoxon test for non-parametric samples.

GLOBAL DETERIORATION SCALE

Stage	Deficits in cognition and function	Usual care setting
	Subjectively and objectively normal	Independent
2	Subjective complaints of mild memory loss. Objectively normal on testing. No functional deficit	Independent
	Mild Cognitive Impairment (MCI)	Independent
3	Earliest clear-cut deficits. Functionally normal but co-workers may be aware of declining work performance. Objective deficits on testing. Denial may appear.	
	Early dementia	Might live independently - perhaps with assistance from family or caregivers.
4	Clear-cut deficits on careful clinical interview. Difficulty performing complex tasks, e.g. handling finances, traveling. Denial is common. Withdrawal from challenging situations.	
	Moderate dementia	At home with live-in family member.
5	Can no longer survive without some assistance. Unable to recall major relevant aspects of their current lives, e.g. an address or telephone number of many years, names of grandchildren, etc. Some disorientation to date, day of week, season, or to place. They require no assistance with toileting, eating, or dressing but may need help choosing appropriate clothing.	In senior's residence with home support. Possibly in facility care, especially if behavioral problems or comorbid physical disabilities.
	Moderately severe dementia	Most often in Complex Care facility.
6	May occasionally forget name of spouse. Largely unaware of recent experiences and events in their lives. Will require assistance with basic ADLs. May be incontinent of urine. Behavioral and psychological symptoms of dementia (BPSD) are common, e.g. delusions, repetitive behaviors, agitation.	
	Severe dementia	Complex Care
7	Verbal abilities will be lost over the course of this stage. Incontinent. Needs assistance with feeding. Lose ability to walk.	

RESULTS

Overall 73 patients with dementia visited our center in the predefined period and finally 36 of them (mean age: 74.73 years, range: 71-77) were eligible for our study. The mean PVR was 255.5ml. The 94.4% (34 patients) of them were diagnosed with Alzheimer disease and only 2 patients had a Lewy Bodies dementia. More specifically, they were 24 men with a mean age of 73.75 years (range: 71-77) and mean PVR: 295.5ml and 12 women with a mean age of 75.71 years (range: 72-77) and mean PVR: 215.5ml. Regarding GDS classification, 20 of patients (55.6%) were at levels 1-3 and all of them were self-catheterized, while the rest 16 (44.4%) were at levels 4-7 being catheterized by their caregivers. Among the more independent patients, there were 14 men (70%) and 6 women (30%), while in patients with more advanced disease, there were 10 men (62.5%) and 6 women (37.5%). During the follow-up period, only one male patient in GDS level 7 abandoned treatment with IC, remaining with a permanent catheter. Among the rest 35, there were 5 cases of uncomplicated UTIs (4 in self-catheterized and 1 in dependent-catheterized patients, 3 in men and 2 in women). Furthermore, there were 16 cases of minor hematuria, all in male patients, 11 in self-catheterized and 5 in dependent-catheterized ones. None of the patients needed hospitalization. Comparing patients with a low GDS to those with a higher score, there is a statistically significant difference in the era of UTIs and hematuria, in favor of care-giving catheterization ($p=0.01$ and $p=0,006$ respectively).



CONCLUSIONS

Intermittent catheterization is a safe treatment option in dementia patients with high PVR, even in those with a high GDS. Interestingly, catheterization by care-givers seems to be safer than self-catheterization even in more independent patients.



REFERENCES

- Gove D, Scerri A, Georges J, van Houten P, Huige N, Hayder-Beichel D, Leichsenring K, Morris VC. Continence care for people with dementia living at home in Europe: a review of literature with a focus on problems and challenges. J Clin Nurs. 2017 Feb;26(3-4):356-365. doi: 10.1111/jocn.13582. Epub 2016 Nov 7. Review.
- Averbeck MA, Altaweel W, Manu-Marin A, Madersbacher H. Management of LUTS inpatients with dementia and associated disorders. NeuroUrol Urodyn. 2017 Feb;36(2):245-252. doi: 10.1002/nau.22928. Epub 2015 Nov 20. Review.
- Schüssler S, Dassen T, Lohrmann C. Care dependency and nursing care problems in nursing home residents with and without dementia: a cross-sectional study. Aging Clin Exp Res. 2016 Oct;28(5):973-82. doi: 10.1007/s40520-014-0298-8. Epub 2014 Dec 20.
- Tateno F, Sakakibara R, Ogata T, Kishi M, Tsuyusaki Y, Takahashi O, Sugiyama M, Tateno A. Lower urinary tract function in dementia with Lewy bodies (DLB). Mov Disord. 2015 Mar;30(3):411-5. doi: 10.1002/mds.25985. Epub 2014 Oct 30.
- Drennan VM, Greenwood N, Cole L. Continence care for people with dementia at home. Nurs Times. 2014 Feb 26-Mar 4;110(9):19. Review.