

ROLE OF COMORBIDITIES IN CARING FOR CHRONICALLY ILL ELDERLY PATIENTS WITH AND WITHOUT DEMENTIA

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Abstract

Background and aim. *The aim of this study is to highlight the presence of co-morbidities and their role in caring for chronically ill patients with and without dementia.*

Patients and methods. *The study was performed on a group of 213 chronic patients. We used CIRS-G (Cumulative Illness Rating Scale in Geriatric Population) and IADL (Instrumental Activity Daily Living) scales. We compared the scores of severity and dependency.*

Results. *The most frequent co-morbidities in the study group were cardiac, vascular, locomotor, sensory organs and metabolic diseases. For the study group, the highest medium score of severity according to the CIRS-G scale was represented by cardiovascular diseases. For patients with dementia, psychiatric, cardiac, vascular, metabolic, genitourinary, sensory organs and locomotion domains had the highest score of severity and dependency.*

Conclusions. *The health status of chronic patients with and without dementia is characterized by multiple pathologies with various degrees of severity and dependency.*

Keywords: comorbidity, chronic diseases, dementia, activities of daily living.

Introduction

The marked reduction of transmissible diseases with the introduction of antibiotics, vaccines, the decline of mortality in the acute phase of diseases and the improvement of living standards have determined not only the increase of life expectancy but also the prevalence of chronic diseases [1]. Nowadays chronic diseases affect over 80% of the population over 65 years. If in 2006 the elderly represented 8% of the world population, by 2030 it is expected to rise to 13%, with the biggest increase rate in developing countries [2]. Also, an increase is estimated in the “oldest-old” segment, people over 80 years, by 151% between 2005-2030 [2,3]. Chronic diseases are often comorbidities in elderly patients, affecting the functionality and the quality of life and increasing the costs of long-term care [4,5,6]. A great share has dementia [7,8,9], together with chronic pulmonary diseases, diabetes, cardiovascular diseases, locomotion, genitourinary infections and neurodegenerative

diseases [10,11].

According to the Alzheimer’s Disease International Report of 2013, it is estimated that over 35 million people worldwide have dementia [2] and it is expected that this number will double in 2030 and more than treble in 2050 to 115 mil. [2]. Between 2010 and 2015, the total number of dependent people worldwide will double from 349 mil. to 613 mil. and the number of elderly people that need care will treble from 101 mil. to 277 mil. [2].

In 2010 the costs of dementia care were over 600 billion US dollars, representing 1% of world gross product [4,12].

In this context, the study of comorbidities and chronic diseases represents not only a public health problem but also a permanent challenge for the clinical practice [13].

Materials and methods

The study group is represented by the hospitalized population at the County Emergency Clinical Hospital-Brasov, geriatrics department, between 2011-2013: 213 patients were included in the study. Patients with neoplasia

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or terminally ill were excluded. For the evaluation of the number and degree of severity of comorbidities we used the Miller and co. CIRS-G scale (Cumulative Illness Scale in Geriatric population) of 1991 [14,15,16]. To evaluate the functionality we used the IADL scale (Lawton and Brody scale). We determined the prevalence of the types of dementia; new cases of dementia were diagnosed accordingly to the diagnostic standards [17,18,19]. The CIRS-G scale is organized in 14 disease categories by systems and represents the comorbidities: heart, vascular, hematopoietic (cells and blood vessels, bone marrow, spleen, lymphatic nodes), respiratory (lungs, bronchi, trachea), sensory organs (eyes, ears, nose, throat, larynx), upper digestive tract (esophagus, stomach, duodenum), lower digestive tract (intestine), liver (biliary duct and pancreas), renal (kidneys), genitourinary (urethra, urinary bladder, ureters, prostate, genital (womb, ovaries), musculoskeletal/integument (bones, muscles and skin), neurological (brain, spinal cord and nerves), endocrine/metabolic and breast (plus infections and intoxications), psychiatric diseases. The degrees of severity were noted from 0-4 for every item according to the degree of gravity: 0-no problem; 1-current mild problem or past significant problem; 2-moderate disability or morbidity/requires "first line" therapy; 3-severe/constant significant disability/"uncontrollable" chronic problems; 4-extremely severe/immediate treatment required/end organ failure/severe impairment in function. We evaluated the number of diseases registered, the total CIRS-G score, the severity index (total score/total number of categories endorsed), the number of categories at level 3 severity and the number of categories at level 4 severity.

IADL-instrumental activities of daily living grid organized as: ability to use the telephone, shopping, cooking, housekeeping, clothes washing, transportation, taking medication, managing money.

Results and discussion

In this study 213 patients were included, 149 women and 65 men, age between 50 and 96 years (mean age 75.52 ± 8.77). The group was divided into two groups: patients with dementia-71 (33.33%) and patients without dementia-142 (66.66%).

We identified three types of dementia: Alzheimer's Disease-42 (59.15%), mixed dementia-14 (19.71%), vascular dementia-15 (21.12%) [20,21]; Alzheimer's Disease

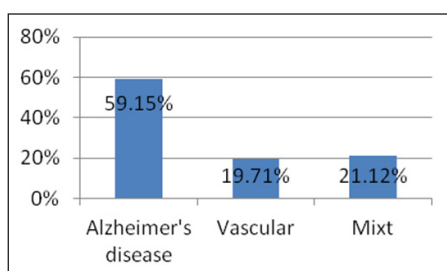


Figure 1. Frequency of types of dementia

represents more than 50% of the types of dementia, its prevalence rising with age. A high dementia prevalence in women was observed (61.97%).

Table I. Distribution of comorbidities in whole group

	No. cases	Percent (%)
Heart	212	99.53
Vascular	212	99.53
Hematopoietic	65	30.51
Respiratory	81	38.02
Eyes, ears, nose and throat and larynx	195	91.54
Upper GI	164	76.99
Lower GI	135	63.38
Liver	81	38.02
Renal	112	52.58
Genitourinary	186	87.32
Musculoskeletal/integument	196	92.01
Neurological	99	46.47
Endocrine/metabolic and breast	201	94.36
Psychiatric disease	169	79.34

The most frequent comorbidities in the study group were cardiac and vascular (99.53%), metabolic diseases (94.36%), locomotion (92.01%), sensory organs (91.54%), genitourinary diseases (87.32%) and psychiatric illnesses (79.34%).

Table II. Distribution of comorbidities in the group with dementia

	No. cases	Percent (%)
Heart	71	100
Vascular	71	100
Hematopoietic	24	33.80
Respiratory	30	42.25
Eyes, ears, nose and throat and larynx	70	98.59
Upper GI	56	78.87
Lower GI	53	74.64
Liver	15	21.12
Renal	36	50.70
Genitourinary	68	95.77
Musculoskeletal/integument	67	94.36
Neurological	47	66.19
Endocrine/metabolic and breast	68	95.77
Psychiatric disease	66	92.95

Table III. Severity index for whole group

	Mean	Std. Deviation (\pm)
Heart	1.93	0.51
Vascular	2.01	0.33
Hematopoietic	0.47	0.77
Respiratory	0.68	0.99
Eyes, ears, nose and throat and larynx	1.18	0.64
Upper GI	1.11	0.75
Lower GI	0.91	0.87
Liver	0.57	0.82
Renal	0.67	0.74
Genitourinary	1.53	0.85
Musculoskeletal/integument	1.85	0.81
Neurological	0.83	1.10
Endocrine/metabolic and breast	1.87	0.58
Psychiatric disease	1.51	0.98

The highest severity index according to the CIRS-G scale was for the psychiatric diseases (2.13) for patients

with dementia, followed by vascular (2.01) and cardiac diseases (1.93) in the whole group. The highest degree of severity for the cardiac and vascular diseases was 3, while for psychiatric diseases it was 4 in the group with dementia.

Table IV. Severity index for group with dementia

	Mean	Std. Deviation (±)
Heart	1.85	0.06
Vascular	2.04	0.03
Hematopoietic	0.49	0.09
Respiratory	0.70	0.11
Eyes, ears, nose and throat and larynx	1.32	0.08
Upper GI	1.04	0.08
Lower GI	1.21	0.12
Liver	0.27	0.07
Renal	0.58	0.07
Genitourinary	1.85	0.11
Musculoskeletal/integument	2.01	0.10
Neurological	1.30	0.15
Endocrine/metabolic and breast	1.86	0.07
Psychiatric disease	2.13	0.11

The IADL scores were lower for the patients with dementia (78.87% were dependent), the most affected domains being taking medication, using the telephone, managing money and transportation.

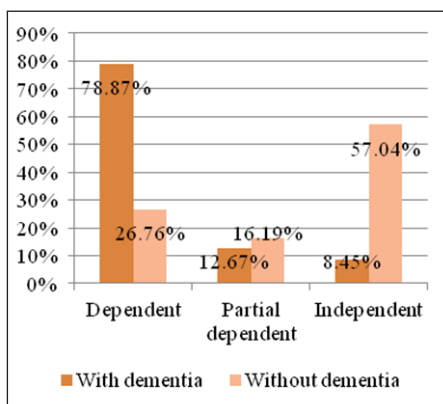


Figure 2. Level of dependency

Conclusions

In accordance with the studies published in literature we observed a high prevalence of multiple pathology in our study group too. The most frequent comorbidities were cardiac and vascular diseases, followed by psychiatric diseases, metabolic, locomotion and sensory organs diseases. Atherosclerosis is one the main causes, the clinical manifestations being visible in the heart, blood vessels, brain, kidneys and small intestine, with the known consequences. The highest medium score of severity was represented by the psychiatric disease for the patients with dementia. The severity index for vascular diseases (2.01) was higher in group with dementia. Alzheimer’s disease represented over 50% of the types of dementia in the study group, the highest prevalence being in the female group (63.63%). Quantifying the functional capacities is an im-

portant component of geriatric evaluation of the chronic patients. Functional decline was visible in both groups, but with a higher prevalence in the group with dementia. Cognitive impairment – dementia is a major factor that contributes to the functional dependency and disabilities in the elderly. Dementia represents a current public health problem due to its increasing incidence and prevalence, its powerful disabling character, long-term evolution (sometimes decades); for recovery great efforts and a long time are needed. It affects the individual, family and even the community [2,3]. Evaluating the comorbidities and the degree of functionality in patients with chronic diseases may contribute to improving their quality of life. Organizing geriatric services, self-management, community services accessible to patients and their care-givers can diminish the negative impact on the individual and its family. Population ageing and the increase of chronic diseases prevalence are factors that challenge any health system regardless of its financial resources [22].

References

1. EU Summit on Chronic Diseases. Available from: http://ec.europa.eu/health/major_chronic_diseases/docs/ev_20140403_wlco09_en.pdf
2. Alzheimer’s Disease International. World Alzheimer Report; 2009 [Internet]. Available from <http://www.alz.co.uk/research/files/WorldAlzheimerReport>.
3. National Institute of Aging. Why Population Aging Matters: A Global Perspective. Available from <http://www.nia.nih.gov/health/publication/why-population-aging-matters-global-perspective/trend-3-rising-numbers-oldest-old>.
4. Zamfirescu A. Therapeutic Possibilities in Dementia (Doctorat thesis). U.M.F. Carol Davila 2013: 1-5.
5. Capisizu A, Zamfirescu A, Aurelian SM, Dina I. Results of prevalence study regarding comorbidities for various patients. Bucharest: Romanian Statistical Review. 2013;5:61-74.
6. Zamfirescu A, Gurgu M, Zgunea S, Chefneux E, Stroe AM, Romila A. Romanian caregivers’ perspective on Alzheimer’s Disease management. 27th International Conference of Alzheimer’s Disease International. Bucharest: Editura Medimond; 2012;39-43.
7. Gurgu M, Zamfirescu A, Stroe AM, Romila A. Cognitive impairment prevalence and correlations with subjective memory impairment: findings from Brasov, Romania. J Nutr Health Aging. 2012;16(9):862.
8. Poblador-Plou B, Calderon-Larranaga A, Marta-Moreno J, Hanco-Saavedra J, Sicras-Mainar A, Soljak M et al. Comorbidity of dementia: a cross-section study of primary care older patients. BMC Psychiatry. 2014;14:84.
9. Preliceanu D. Psihiatrie Clinica. Bucharest: Editura Medicala. 2011;699-733.
10. Hendrie HC, Lindgren D, Hay DP, Lane KA, Gao S, Purnell C et al. Comorbidity profile and healthcare utilization in elderly patients with serious mental illnesses. Am J Geriatr Psychiatry. 2013;21(12):1267-1276.
11. Norman S. Comorbidity of Mental and Physical Disorders: A main Challenge to Medicine in the 21st Century. Medicina Academica Mostariensia. 2013; 1(1): 4-5.

12. Ageing Report: Economic and Budgetary Projects for EU Member States- (2008-2060); 2009. Available from ec.europa.eu/economy_finance/publications/publication14992_en.pdf.
13. Bălescu A, Nedelcu L. The role of the primary care in promoting the mental and family health. Brasov: Bulletin of Transilvania University. 2009;VI:13-18.
14. Dobranici L, Tudose C. The assessment of medical comorbidity in the elderly patients with dementia. Romanian Journal of Psychiatry. 2010; 2:1-10.
15. Miller MD, Towers A. A Manual of Guidelines for Scoring the Cumulative Illness Rating Scale for Geriatrics (CIRS-G). 2001:1-30.
16. Miller M, Paradis CF, Houck PR, Mazumdar S, Stack JA, Rifai AH, et al. Rating Chronic Medical Illness Burden in Geropsychiatric Practice and Research: Application of the Cumulative Illness Rating Scale. Psychiatry Res. 1992;41:237-248.
17. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 4th ed. Text revision (DSM-IV-TR). Romanian edition. Bucharest: Asociația Psihiatrilor Liberi din România; 2003;135-297.
18. Goldberg JR. Clinical Guide of Psychiatry. Bucharest: Editura Medicală; 2001:59-79;390-411.
19. Kaplan, Sadock. Synopsis of psychiatry, Behavioral, Sciences/ Clinical Psychiatry. 8th ed.; Baltimore: Williams&Wilkins, 1998:328-344, 1289-1304.
20. Băjenaru O, Tudose C, Popescu BO. Ghid de diagnostic și tratament în demențe. Bucharest: Editura Amaltea; 2009:8-23.
21. Romila A. Psychiatry. 2nd ed. Bucharest: Editura Asociația Psihiatrilor Liberi din România; 2008:269-278.
22. Lehmann SW, Rabins VP. Community Services for the elderly. In: Breakey RW editor. Integrated Services of Mental Health. Modern Psychiatric Services. Bucharest: Editura Fundației PRO; 2001;474-488.