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Frailty syndrome – symptoms and diagnosis

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Frailty, Elderly, General Practice

ABSTRACT

Introduction

Nowadays, systematic increase in the share of older people in the community around the world is described. In elderly some characteristic health problems are observed. One of them is frailty syndrome.

Objective

The objective of this work is to present symptoms of frailty syndrome and ways of its diagnosis.

Results

There is an emerging evidence that such health problems as heart failure, chronic obstructive pulmonary disease and renal failure may contribute to frailty syndrome development. Most widely used definition of frailty, delineates it as a state of increased vulnerability from age-associated decline in reserve and function resulting in reduced ability to cope with everyday or acute stressors. According to consensus of medical societies, all persons aged 70 years and older should be involved in the group in which screening for frailty is performed by healthcare providers

Conclusions

With severe life-threatening consequences, frailty is considered as a condition that should be included in the elderly screening program. There are many instruments used for frailty screening. In primary healthcare clinical setting the most practical are brief and accurate tools, assessing multidirectional issue of frailty. These criteria are to the highest extend fulfilled by

the Tilburg Frailty Index, the Groningen Frailty Indicator and the Gérontopôle Frailty Screening Tool.

Keywords: Frailty, Elderly, General Practice

INTRODUCTION

Nowadays, systematic increase in the share of older people in the community around the world is described. This widely-observed phenomenon has bring some disadvantageous corollaries. In elderly some characteristic health problems are observed. They are referred to as geriatric giants. These include immobility, instability, incontinence and impaired intellect/memory, as well as impaired vision and hearing loss. in the modern sense of this term, there are also cognitive impairment, anorexia of aging, sarcopenia and frailty syndrome. Available estimates assume more than 10% of community-dwelling adults aged over 65 are frail.
Age is a one of main frailty risk factors, as its prevalence increases with age. It affects almost 16% of people aged 80-84 and slightly more than 26% of individuals aged 85 or more [1]. There are some other conditions predisposing to frailty development. Emerging evidence demonstrates that such commonly observed in general practice health problems as heart failure [2], chronic kidney disease [3], chronic obstructive pulmonary disease [4] and cognitive impairment may be associated with higher probability of frailty syndrome.
Frail patients are on greater risk of falls, chronic infections and disability development as well as decrease in cognitive functions. They significantly more often are in need of long hospitalizations. Frailty syndrome results in dependence on relatives or healthcare workers and gradually leads to institutionalization and finally to death.

OBJECTIVE

The objective of this work is to present symptoms of frailty syndrome and ways of its diagnosis.

RESULTS

What is the frailty syndrome?

Presently, there is no consensus on the definition and criteria for identifying a frailty syndrome [5]. Most widely used definition of frailty delineates it as a state of increased vulnerability from age-associated decline in reserve and function resulting in reduced ability to cope with everyday or acute stressors [6].
Moreover, six international medical societies defined frailty as: “A medical syndrome with multiple causes and contributors that is characterized by diminished strength, endurance, and reduced physiologic function that increases an individual’s vulnerability for developing increased dependency and/or death.” [7].
In primary healthcare setting also five components frailty person phenotype can be useful, it involves presence of weight loss, fatigue, weakness, reduced physical activity and slowing down [6].

Frailty screening

There is an emerging evidence that such health problems as heart failure, chronic obstructive pulmonary disease and renal failure [2-4] may contribute to frailty syndrome development.

What is more, situations of reduced general immunity, like found in case of diabetes [8], cancer [9] or HIV infection [10] may be a culprit if we consider frailty. Along with this conditions also undergoing surgery, especially vast abdominal surgery, may also be recognized as a triggering factor [11]. In the screening for frailty, the above mentioned characteristic phenotype can be useful. On the other hand, reduced physical fitness, loss of strength, fatigue may be interpreted by physician as symptoms of normal aging. Thus, there is a need o wide screening for frailty, as undiagnosed syndrome is related with poor outcomes. According to consensus of medical societies, all persons aged 70 years and older should be involved in the group in which screening for frailty is performed by healthcare providers [7]. When screening result is positive, general practitioner can implement frailty management or refer affected elderly to geriatrician [12]. The possible interventions include exercise [13,14], caloric and protein supplementation [15], use of vitamin D in deficient individuals [16] and reduction [17].

Screening tests

Experts of joined societies recommend the use of FRAIL, the Cardiovascular Health Study Frailty Screening Measure, the Clinical Frailty Scale, the Gérontopôle Frailty Screening Tool. The concise Groningen Frailty Indicator tool and the Tilburg Frailty Index - only tool adapted to Polish conditions also deserve attention.

FRAIL

The name of this tool is an acronym formed from the first letters of its 5 components: fatigue, resistance, ambulation, illness and loss of weight, an individual can score 1 point for each. [18]. FRAIL scale is mainly based on subjective reports of respondents. Accomplishing 3-5 points indicates for frail, 1-2 - pre-frail and 0 – vigorous health status. Patients are asked: how much time during the past 4 weeks they felt tired, if they had any difficulty walking up 10 steps alone without resting and without aids, if they had any difficulty walking several hundred yards alone and without aids. During examination, category illness is assessed by reporting illnesses from 11 total listed health problems (hypertension, diabetes, cancer, chronic lung disease, heart attack, congestive heart failure, angina, asthma, arthritis, stroke and kidney disease). Patient receive 1 point for weight loss if he report it as 5% or greater within the past year. This instrument is brief and allows rapid screening in primary healthcare setting.

The Cardiovascular Health Study Frailty Screening Measure (CHS)

This is one of most widely used instruments in geriatric practice. It assess 5 components [19]. They are weight loss, exhaustion (using the CES–D Depression Scale [20]), physical activity: (using the short version of the Minnesota Leisure Time Activity questionnaire [21]), walk time (using the Up and Go test [22]) and weakness (on the basis of dynamometric hand grip measurement). Scoring 3 or more points in this test entitles frailty diagnosis [19]. CHS instrument is not fully adapted to primary healthcare conditions as it is not very complex and requires use of specialized dynamometer equipment.

The Clinical Frailty Scale

This instrument uses only clinical judgment [23]. There are 9 options available: Very fit (robust, active, exercising regularly), Well (no active disease symptoms, active occasionally),

Managing Well (medical problems are well controlled, not regularly active), Vulnerable (not dependent, symptoms limit activities), Mildly Frail (more evident slowing, need help in some activities as finances, heavy housework), Moderately Frail (need help with all outside activities, keeping house and bathing), Severely Frail (completely dependent for personal care), Very Severely Frail (completely dependent, approaching the end of life), Terminally Ill (a life expectancy <6 months, who are not otherwise evidently frail). The Clinical Frailty Scale is rapid in use and very convenient for general practitioner.

The Gérontopôle Frailty Screening Tool

This tool also involves clinical judgment of individual along with medical interview [24]. A physician should ask following questions: if a patient lived alone, experienced involuntary weight loss, fatigability and mobility difficulties in the past 3 months, complained on memory or observed slow gait speed. Provided that one or more answers are positive, doctor should assess in his own clinical opinion whether patient is frail and at an increased risk for further disabilities. The Gérontopôle Frailty Screening Tool is suitable to be used in primary healthcare as it is brief and uses only interview and general medical assessment.

The Groningen Frailty Indicator

This is 15-item instrument [25]. It assesses mobility, vision, hearing, weight loss, illnesses (chronic use of drugs), cognitive functioning, psychosocial problems (feeling alone, isolation, anxiety, depressed mood) and physical fitness. The frailty syndrome is diagnosed when the number of points scored is at least 4. The tool uses simple questionnaire.

The Tilburg Frailty Index

This is multidimensional instrument consisting of two parts [26]. In the part A contains 10 questions regarding the determinants of the fragility syndrome (sex, age, marital status, monthly income, country of origin, level of education, lifestyle, illnesses and stressing life events). Part B including 15 questions regarding the presence of major frailty components. 8 – physical (unintentional weight loss, difficulty in walking, problems with balance, hearing, sight, hand strength and physical fatigue), 4 – psychic (cognitive function, depression, anxiety and coping with problems) and 3 – social (loneliness, social relations and support). An individual can score from 0 to 15. The frailty syndrome is diagnosed in a presence of at least 5 points. The questionnaire is recommended due to satisfactory psychometric properties and multidimensional assessment of the patient.

Conclusions

The constant aging of the societies brings some new problems. One of them is widely recognized frailty syndrome, met in patients aged 65 or more. Frailty can be defined as diminished strength, reduced physiologic functions, physical fitness as well as becoming dependant from relatives or institutional care. With severe life-threatening consequences, frailty is considered as a condition that should be included in the elderly screening program. There are many instruments used for frailty screening. In primary healthcare clinical setting the most practical are brief and accurate tools, assessing multidirectional issue of frailty. These criteria are to the highest extend fulfilled by the Tilburg Frailty Index, the Groningen

Frailty Indicator and the Gérontopôle Frailty Screening Tool. Early detection of frailty is beneficial for individuals as its management may prevent complications leading to dependence, institutionalisation which in turn generate substantial social and economic costs.

References:

1. Collard RM, Boter H, Schoevers RA, Oude Voshaar RC. Prevalence of frailty in community-dwelling older persons: a systematic review. J Am Geriatr Soc.2012;60(8):1487–92.
2. McNallan SM, Singh M, Chamberlain AM, Kane RL, Dunlay SM, Redfield MM, et al. Frailty and healthcare utilization among patients with heart failure in the community. JACC Heart Fail 2013;1(2):135-41.
3. Wilhelm-Leen ER, Hall YN, Tamura MK, Chertow GM. Frailty and chronic kidney disease: the third National Health and Nutrition Evaluation Survey.Am J Med 2009;122(7):664-71.e2.
4. Park SK, Richardson CR, Holleman RG, Larson JL. Frailty in people with COPD, using the National Health and Nutrition Evaluation Survey dataset (2003-2006). Heart Lung 2013;42(3):163-70.
5. Rockwood K., Fox R. A., et al. Frailty in elderly people: an evolving concept. Can Med Assoc J. 1994; 150 (4): 489- 495.
6. Fried LP, Tangen C, Walston J, et al. Frailty in older adults: evidence for a phenotype. J. Gerontol. Biol. Sci. Med. Sci. 2001; 56 (3): M 146-157.
7. Morley JE, Vellas B, van Kan GA, et al. Frailty consensus: a call to action. JAMDA 2013; 14(6): 392–397.
8. Sinclair A, Morley JE, Rodriguez-Mañas L, et al. Diabetes mellitus in older people: Position statement on behalf of the International Association of Gerontology and Geriatrics (IAGG), the European Diabetes Working Party for Older People (EDWPOP), and the International Task Force of Experts in Diabetes. J Am Med Dir Assoc. 2012;13:497–502.
9. Ruiz M, Reske T, Cefalu C, Estrada J. Management of elderly and frail elderly patients: The importance of comprehensive geriatrics assessment and the need for guidelines. Am J Med Sci. 2013 Jul;346(1):66-9.
10. Desquilbet L, Jacobson LP, Fried LP, et al. HIV-1 infection is associated with an earlier occurrence of a phenotype related to frailty. J Gerontol A Biol Sci Med Sci. 2007;62:1279–1286.
11. Partridge JS, Harari D, Dhesi JK. Frailty in the older surgical patient: A review. Age Ageing. 2012;41:142–147.
12. Espinoza S, Walston JD. Frailty in older adults: Insights and interventions. Cleve Clin J Med. 2005;72:1105–1112.

13. Singh NA, Quine S, Clemson LM, et al. Effects of high-intensity progressive resistance training and targeted multidisciplinary treatment of frailty on mortality and nursing home admissions after hip fracture: A randomized controlled trial. J Am Med Dir Assoc. 2012;13:24–30.
14. Yamada M, Arai H, Sonoda T, Aoyama T. Community-based exercise program is cost-effective by preventing care and disability in Japanese frail older adults. J Am Med Dir Assoc. 2012;13:507–511.
15. Neelemat F, Bosmans JE, Thijs A, et al. Post-discharge nutritional support in malnourished elderly individuals improves functional limitations. J Am Med Dir Assoc. 2011;12:295–301.

16. Rejnmark L, Avenell A, Masud T, et al. Vitamin D with calcium reduces mortality: Patient level pooled analysis of 70,528 patients from eight major vitamin D trials. J Clin Endocrinol Metab. 2012;97:2670–2681.
17. Merle L, Laroche ML, Dantoine T, Charmes JP. Predicting and preventing adverse drug reactions in the very old. Drugs Aging. 2006;22:375–392.
18, Morley JE, Malmstrom TK, Miller DK. A simple frailty questionnaire (FRAIL) predicts outcomes in middle aged African Americans. J Nutr Health Aging. 2012;16:601–608.
19. Fried LP, Tangen CM, Walston J, et al. Cardiovascular Health Study Collaborative Research Group. Frailty in older adults: Evidence for a phenotype. J Gerontol A Biol Sci Med Sci. 2001;56:M146–M156.
20. Orme J.G., Reis J., Herz E.J. Factorial and discriminate validity of the Center for Epidemiological Studies Depression (CES-D) scale. J. Clin. Psychol. 1986; 42: 28–33.
21. Taylor H.L., Jacobs D.R., Schucker B., Knudsen J., Leon A.S., Debacker G. A questionnaire for the assessment of leisure time physical activities. J. Chronic Dis. 1978; 31: 741–755.
22. Podsiadlo D., Richardson S. The timed "Up and Go": a test of basic functional mobility for frail elderly persons. J. Am. Geriatr. Soc. 1991; 39: 142–148.
23. Rockwood K, Song X, MacKnight C, et al. A global clinical measure of fitness and frailty in elderly people. CMAJ. 2005;173:489–495.
24. Subra J, Gillette-Guyonnet S, Cesari M, et al. The integration of frailty into clinical practice: Preliminary results from the Gérontopôle. J Nutr Health Aging. 2012;16:714–720.
25. Stevernik N., Slaets J.P.L., Schuurmans H., van Lis M. Measuring frailty: development and testing of the Groningen Frailty Indicator (GFI). Gerontologist 2001; 41: 236–237.
26. Gobbens RJ, van Assen MA, Luijkx KG, et al. Determinants of frailty. J Am Med Dir Assoc. 2010;11:356–364.