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THE INTEGRATION OF FRAILTY INTO CLINICAL PRACTICE: PRELIMINARY RESULTS FROM THE GÉRONTOPÔLE

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> Abstract: Background: Disability is commonly considered as an irreversible condition of advanced age. Therefore, preventive actions need to be taken before the disabling cascade is fully established, that is in the predisability phase defined "frailty syndrome". The complexity and heterogeneity of frailty requires a clinical approach based on multidimensionality and multidisciplinary. In this paper, we present the main characteristics of the newborn Platform for Evaluation of Frailty and Prevention of Disability (Toulouse, France). Intervention: Persons aged 65 years and older screened for frailty by general practitioners in the Toulouse area are invited to undergo a multidisciplinary evaluation at the Platform. Here, the individual is multidimensionality assessed in order to preventively detect potential risk factors for disability. At the end of the comprehensive evaluation, the team members propose the patient (in agreement with the general practitioner) a preventive intervention program specifically tailored to the his/her needs and resources. Results: Mean age of our population is 82.7 years, with a large majority aged 75 years and older. Most patients are women (61.9%) Approximately two thirds of patients received any kind of regular help. Regarding level of frailty, 65 patients (41.4%) were pre-frail, and 83 (52.9%) frail. For what concerns the functional status, 83.9% of patients presented slow gait speed, 53.8% were sedentary, and 57.7% had poor muscle strength. Only 27.2% of patients had a SPPB score equal to or higher than 10. Autonomy in ADL was quite well preserved (mean ADL score 5.6 ± 0.8) as expected, suggesting that the patients of the platform have not yet developed disability. Consistently, IADL showed a marginal loss of autonomy reporting a mean score of 6.0 ± 2.3 . About one third of patients (33.1%) presented a MMSE score lower than 25. Dementia (measured by the CDR scale) was observed in 11.6% of the platform population, whereas subjects with mild cognitive impairment (that is CDR equal to 0.5) were 65.8%. New diagnosed depressive disorders were relatively rare with only 3.2% of patients showing signs of depression but some people were already treated. Numerous patients presented vision problems with 10.4% having abnormal findings at the Amsler grid. Finally, it is noteworthy that 9% of the platform population presented an objective state of protein-energy malnutrition, 34% an early alteration of nutritional status, while almost everyone (94.9%) had a vitamin D deficiency (partially explained by the period of the year, that is winter-spring, of most of the measurements). Conclusion: The Platform clinically evaluates and intervenes on frailty for the first time at the general population-level. This model may serve as preliminary step towards a wider identification of early signs of the disabling cascade in order to develop more effective preventive interventions.

Key words: Frailty, elderly, prevention, disability, evaluation.

Introduction

Since the beginning of the 20th century, when first Nascher proposed the birth of the novel medical discipline, geriatrics has been specifically focused at taking care of older persons experiencing the heavy burden of age-related diseases (1). Up to few years ago, the geriatrician was in charge of assisting (i.e., evaluating and treating) those patients which could not be adequately followed in any other specialty due to their comorbidities, polypharmacy, social issues, and functional impairment. In particular, the average geriatric patient has commonly been for a long time an older person at advanced age already presenting relevant disabling conditions, significantly impairing his/her capacity to conduct an autonomous life. In other words, geriatric patients frequently experienced those conditions and/or clinical outcomes for which they were automatically excluded from standard interventions proposed at younger ages. Moreover, the primary outcome of disability significantly differentiates geriatric medicine from other specialties. This end-point (also considering the characteristics of the subjects at risk of developing it) imposes the adoption of alternative approaches and choice of different interventions, often in contrast with the so-called "evidence-based medicine".

Disability is commonly considered an irreversible condition in older persons. It is a clinical issue representing a priority for public health systems of developed countries. In fact, besides of posing severe burdens to the patient's quality of life, disability is associated with high healthcare costs (2). The detrimental

THE INTEGRATION OF FRAILTY INTO THE CLINICAL PRACTICE

effects (at both person- and society-level) of disability should be considered in the wider scenario of our aging societies. In this way, it becomes clear why we cannot anymore wait for assessing the standard geriatric patient already disabled, but we should preventively act before the irreversible disabling cascade is in place.

For this reason, during the last two decades, a growing body of literature has been specifically focused at exploring the "frailty syndrome". Frailty is commonly defined as a geriatric syndrome characterized by the reduction of physiological reserves and capacities of an individual needed to adequately face exogenous and endogenous stressors. Such condition poses the subject at increased risk of negative health-related events, including hospitalization, institutionalization, and disability. In particular, frailty is usually considered as a pre-disability state which, differently from disability, is still amenable for interventions and reversible (3).

On the basis of this novel concept, the heterog neous older population was subsequently categorized into the subgroups to better design and develop person-tailored interventions: Older persons were then considered "disabled" if needing assistance in the accomplishment of basic activities of daily living, "frail" if presenting limitations and impairments in the absence of disability, and "robust" if no frailty or disability were present.

To translate the theoretical concept of frailty into practice, Fried et al. (3) proposed a model combining the evaluation of the following five criteria: sedentariness, involuntary weight loss, fatigue, poor muscle strength, and slow gait speed. According to this instrument, an older person is considered "frail" if presenting three or more of these defining criteria.

The identification of a pre-disability state (i.e., frailty) allows the detection of older persons at risk of negative events that may still benefit from preventive interventions against disability. This new concept of frailty modifies the common geriatric approach by leading it towards the importance of prevention, a field that was not possible to adopt in the past when only irreversible conditions came to the geriatrician evaluation. At the same time, the definition of a biological age provides the basis for identifying persons who indeed need the evaluation of a geriatrician, redirecting to the different specialties those who can be followed and treated using standard protocols because only an graphically old.

The "gold standard" intervention adopted in geriatric medicine is surely represented by the comprehensive geriatric assessment (CGA). The CGA consists of a global evaluation of the older patient performed by a multidisciplinary team finally resulting in the design of a person-tailored preventive or therapeutical intervention. Since the CGA is conducted using standardized scales and instruments, there is the possibility to evaluate the efficacy of the proposed interventions over time and more efficiently follow-up the patient.

In 1984, Rubenstein et al (4) first showed that CGA had a beneficial impact on institutionalization and mortality of older persons. Few years later, the meta-analysis by Stuck et al. (5) on 28 clinical trials confirmed such positive results extending them on multiple outcomes, including mortality, hospital admissions, cognitive decline, and functional impairment. In 2004, a randomized trial studied the effects of CGA (and CGA-derived interventions) in individuals aged 74 years and older in primary care (6). Interestingly, the study confirmed the idea that frailty is a reversible condition (27.9% of frail individuals were no longer frail after the intervention).

Despite the importance of preventing disability, the implementation of frailty in the clinical setting is still limited. Major difficulties at preventively act against disability reside in:

1- The need to design a different geriatric approach to the older patient. In fact, as above-mentioned, the geriatrician cannot anymore wait to visit the (already disabled) patient, but preventively evaluate the health status of the older subject. This implies the need of a close collaboration between family physicians and geriatrics facilities in order to promptly detect the early signs of the disabling cascade and preventively act at the general population-level (7). In other words, the frailty detection and treatment are directed towards community-dwelling older persons which are not yet "medicalized" and may even not feel the immediate need of a clinical assessment.

2-The still limited recognition of frailty as a valid clinical condition (thus, to detect, measure, and treat). The novelty of frailty has raised intense debates about its nature and operational definition. Nevertheless, its theoretical background is today sufficiently strong to recommend the assessment of frailty in the clinical practice (8,9).

In these last years, the French government has defined a new policy for preventing disability in older persons. To address this national (but even wider) public health issue, the geriatric center of Toulouse (i.e., the Gérontopôle of the Centre Hospitalier Universitaire de Toulouse) in association with the university Department of General Medicine of Toulouse (DUMG) and the regional health authority (Agence Regionale de Santé -ARS- Midi-Pyrenees) designed and developed an innovative Platform for the Evaluation of Frailty and the Prevention of Disability. Such platform is specifically aimed at supporting the comprehensive and multidisciplinary assessment of frail older persons. The identification of the specific causes of the increased status of vulnerability allows the multidisciplinary team to design a patient-tailored preventive plan of intervention against disability. In the present paper, we describe the platform structure and organization, and provide the main characteristics of the first 160 patients evaluated during the first eight months of operation.

The structure of the Platform

The Platform for the Evaluation of Frailty and the Prevention of Disability was started in October 2011 as a separate activity of the geriatric day hospital unit of the Gérontopôle of Toulouse. It is currently hosted in four rooms (two clinical

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offices for the evaluation of patients and blood drawn, a waiting room and an administrative office) located at the Hospital Garonne (Toulouse, France). The platform currently accommodates up to four patients per day, five days per week. However, starting from January 2013, the platform will be able to evaluate up to eight patients per day, five times per week, at the new site of the Hospital La Grave (Toulouse, France).

Each patient evaluated at the platform must be referred by a physician detecting signs or symptoms of frailty in him/her. This service is paid by the social security health system to the hospital. As we can see in the results sections, the frail older adults referred to the platform have already some underlying diseases witch really need to be diagnosed. The platform provides the patient's assessment, treatment, and follow-up in close connection with family physicians. After one and three months from the evaluation, the platform staff contacts the patient (or his/her proxies) to make sure that the proposed interventions have been adopted and to estimate possible modifications of his/her health status.

Identification of the frail elderly person

Numerous screening tools are currently available to detect frailty in older persons, most of them primarily used in clinical research (10). Although several operational definitions have been developed over the last decade to support clinicians and researchers at objectively screening older persons for frailty, a controversy exists about the optimal instrument to be adopted (11). The major reason for such difficulties at reaching an agreement probably resides in the multidimensional nature of the frailty syndrome (12). This has led to the proposal of multiple tools, each one constitued by specific sets of items or tasks providing different phenotypes of frailty. For example, a panel of experts proposed gait speed as a possible parameter to screen frailty in older persons. After all, its predictive value for adverse outcome is widely demonstrated (13, 14). The adoption of physical performance tests in the screening of older persons at risk of health-related events has been proposed as preliminary step towards a structural reorganization of healthcare provision (15).

In a previous study, we explored the feasibility of a questionnaire screening frailty among general practitioners. The instrument was based on the gait speed test and proposed by 50 physicians of the Midi-Pyrenees region (France). The instrument was largely well accepted. However, two difficulties were mainly reported in the implementation of the instrument: finding a 4-meter track in the physician's office to measure gait speed, and the addition of a novel screening tool in the already busy practice (due to the complexity of patients) (16).

Taking into account data from literature and results from such preliminary survey, we developed a questionnaire to be used by general practitioners for screening frailty. In particular, it takes into account the physician's subjective perception of the patient's frailty status together with functional, social, cognitive, nutritional factors (Table 1). The questionnaire was design to highlight the importance of the general practitioner in the definition of the frailty status of the individual. This was done by rendering of primary importance the clinical subjective feeling of the physician in the definition of the questionnaire result.

Table 1 Questionnaire for the detection of frail older patients use by general practitioners

Patients	aged	65	years	and	over,	indep	endent	(ADL	6/6),	with r	10	current	acute
disease													

SCREENING						
	YES	NO	DON'T KNOW			
Does your patient live alone?						
Has your patient lost weight in the last 3 months ?						
Has your patient felt more tired in the last 3 months ?						
Has your patient found it more difficult o get around in the last 3 months ?						
Does your patient complain of memory problems?						
Does your patient have a slow gait speed (more than 4 seconds to walk 4 meters) ?						
\Rightarrow If you have answered YES to one of t	hese ques	tions:				
Do you think your patient is frail If VES does your patient agree	?: • YE	S ution of h	I NO			
hospital ?		S				

The definition of frailty

GÉRONTOPÔLE

Toulouse

Consistently with its wide use, the primary instrument to measure frailty at the platform is the operational definition proposed by Fried and colleagues and validated in the Cardiovascular Health Study (1). In particular, we define its five constituting criteria as follows:

- Involuntary weight loss is detected by asking "Have you involuntarily lost weight during the past months?" Current weight and self-reported usual weight are also recorded.
- Fatigue is defined by the patient's answers "often" or "most of the time" to the following two items, part of the CES-D scale: "During the last two weeks I felt that everything I did was an effort", and "During the last two weeks I felt that I could not get going".
- Sedentariness is assessed by administering the following question to the patient: "What is your current level of physical activity?". The patient can answer: No physical activity (confined to bed); Rather sedentary, some short walks or other exercise of very light intensity; Light intensity exercise (walking, dancing, fishing or shooting, shopping on foot) at least 2 to 4 hours a week; Moderate

THE INTEGRATION OF FRAILTY INTO THE CLINICAL PRACTICE

intensity exercise (running, walking uphill, swimming, gardening, cycling) for 1 to 2 hours a week, or light intensity exercise (walking, dancing, fishing or shooting) for more than 4 hours a week; Moderate intensity exercise more than 3 hours a week; Vigorous exercise several times a week. By answering the question, the participant is instructed that light intensity exercise does not cause sweating and does not prevent conversation, moderate intensity exercise causes sweating and conversation is not possible, and vigorous exercise involves maximum effort. Although this specific question is not validated, it has previously been used in literature to define sedentariness and physical activity levels in older persons (17, 18).

- Slow usual gait speed is measured after testing the patient over a 4-meter long track. Slow gait speed is considered as present if the patient takes more than 4 seconds (i.e., gait speed slower than 1 meter/second) to complete the task.
- Poor muscle strength is measured by a hand-held dynamometer. The gender- and body mass index-specific cut-points originally provided by Fried and colleagues (3) are used to identify subjects presenting this criterion of frailty.

The patient is considered frail if he/she presents three or more of these criteria, pre-frail if only one or two criteria are present.

Causes of frailty

The evaluation of the patient at the platform is primarily conducted by the geriatrician (or a general practitioner specifically formed in geriatrics) and a nurse. Sociodemographic (including living environment), anthropometric, and clinical (medical and surgical history, current treatments and allergies) are recorded. Moreover, all patients undergo a blood drawn for standard laboratory assessment (including vitamin D concentrations, and special tests if required by the patient's clinical conditions) and an electrocardiogram. The evaluation includes the administration of the following questionnaires/scales objectively measuring the specific capacities of the person:

- Cognition: Memory Impairment Screen (free and delayed recall), AD8 Dementia Screening Interview (19), Mini Mental State (MMSE) (20), Clinical Dementia Rating (CDR) (21);
- Physical function: scales of disability in basic Activities of Daily Living (ADL) (22) and Instrumental ADL (IADL) (23), measures of physical performance (Short Physical Performance Battery, SPPB (24), Pepper Assessment Tool for Disability, PAT-D (25);
- Nutritional status: Mini Nutritional Assessment (MNA) (26);
- Mood: the Covi and Raskin scales for anxiety and depression (27, 28);
- Vision and hearing: Parinaud's scale (near vision), Monoyer's scale (distant vision), Amsler grid (detection of age-related macular degeneration, AMD), and the Hearing Handicap

Inventory for the Elderly - Screening version (HHIES) (29).

The platform will soon receive a retinal camera to allow a more accurate detection of AMD and to screen other vision conditions (such as glaucoma). Moreover, a last generation dual energy X-ray absorptiometry (DXA) device, an I-DXA for the study of body composition and bone mineral density will be shortly implemented in the daily practice of the platform.

According to the results of the screening questionnaires/scales and the geriatrician clinical visit, additional evaluations might be proposed. For example, according to the patient's needs, a neuropsychiatrist, an ophtalmologist, a nutritionist, a physical therapist, a dentist, or a social assistant may be directly and promptly involved to complete the assessment and improve the definition of the subsequent plan of intervention.

At the end of the multidisciplinary evaluation, the geriatrician of the platform summarizes the results of all the performed evaluations to prepare a personalized intervention plan for the patient. The family practitioner of the patient is also immediately informed about the results of the visits to share with him the visit conclusions. Moreover, in the attempt of increasing the patient's adherence to the intervention and facilitate the follow-up, an appointment is readily taken for the patient with his/her own general practitioner within the following 15 days.

Interventions proposed

The plan of intervention proposed by the platform are specifically designed and adapted to each patient's resources and needs according to the results of the multidisciplinary evaluation. The comprehensive evaluation of frailty leads to the identification of potential risk factors for negative healthrelated events in different domains of the older patient's health. In particular, the possible causes for the increased vulnerability may consist of undiagnosed diseases or risk factors (at least partially linked to the aging process).When an unknown disease is detected, the patient is directed towards the specialist's evaluation for further investigation (if needed) and/or a specific treatment proposed.

Differently, if a risk factor is found, it is discussed with the patient to make him/her aware about its possible consequences. Such education of the patient is parallel with the plan of intervention that will be proposed. In fact, it will include behavioural and therapeutical suggestions to correct the specific risk factor according to the clinical priorities given by the physician. For example, if a risk of malnutrition is detected by the MNA at the preliminary assessment (i.e., frailty in the nutritional domain), the nutritionist (also on the basis of the objective data collected during the preliminary visit) may provide the patient with specific recommendations to improve his/her dietary intake. Similarly, in case of issues in the physical domain of the patient (e.g., sedentariness), the physical therapist may simply suggest specific exercises that can easily increase the physical activity level of the patient as well as

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fitness centers in the patient's neighbourhood. In the same way, a person with social issues may find specific support and information to reduce the barriers at the basis of his/her frailty status. In this context, it is noteworthy that the close relationship established between the platform with the administrative and healthcare authorities has allowed the creation of multiple possible alternatives in order to offer preventive protocols against disability.

The approach of targeting the specific issues of the patients raised at the end of a comprehensive geriatric assessment performed by a multidisciplinary team mirrors what has been previously shown to be particularly beneficial in frail older persons (5,30,31). Nevertheless, this is the first time that this model is exported and officially implemented in the primary prevention of disability.

Patients' follow-up

To make sure that the proposed recommendations are followed and to also determine their efficacy, a close follow-up is organized for all the patients undergoing the platform assessment. First, a phone contact is made the same day of the evaluation with the general practitioner to briefly explain the proposed plan of intervention and discuss possible therapeutical modifications. The general physician will also receive a detailed letter with all the results of the platform evaluation. An appointment is also organized for the patient with his/her own general practitioner within two weeks. One month after the platform evaluation, a nurse phones the patient to verify the put in place of the recommendations and facilitate the solution of possible issues. This first phone contact is also important to boost the attitude of the patient at improving his/her health status through the adoption of the proposed healthier lifestyle habits. At three months from the initial evaluation, a specifically trained nurse carries out a second phone evaluation. This is specifically focus at administering the PAT-D scale (25). This is a 23-item validated instrument measuring the physical function of older persons. It has already been adopted in several trials with special focus on disability prevention. The patient rates his/her ability on a six-point Likert scale, ranging from 'able to perform an activity without difficulty' to 'unable'. If the physical function of the patient is deteriorated compared to the baseline evaluation, specific actions are taken from a new contact with the general practitioner to discuss the case, to the reservation of a out-patient clinical visit for the re-revaluation of the patient. Throughout the follow-up, the patient will continue having the general practitioner as primary referent for his/her health status.

Clinical research

Elderly persons who are frail and pre-frail often present aging-related disorders that are still at an early stage. Thus, as mentioned above, they can still benefit from early, innovative interventions. In this context, the platform plays an important role for research. In fact, the standardized and objective assessment conducted in the platform patients makes possible the creation of a unique database of community-dwelling older persons to study the biological and clinical foundations of the frailty syndrome. Moreover, the structured follow-up of patients allows the evaluation over time of the efficacy of the innovative interventions (e.g., novel medications, biotechnologies, telemedicine...) that will be made available. The conduction of clinical studies is also facilitated because the cohort of patients evaluated at the platform will allow the creation of ancillary projects testing specific hypotheses in a very cost-effective fashion. Finally, the detailed database of patients will constitute an important resource to easily find and contact possible candidates to future clinical trials.

The platform population

The description of the main characteristics of the first 160 patients recruited during the first months of activity of the platform are reported in Table 2 and Table 3. Mean age of our population is 82.7 years, with a large majority aged 75 years and older. Most patients are women (61.9%) Approximately two thirds of patients received any kind of regular help. Only 14.1% received old age allowance.

Table 2

Socio-demographics characteristics of the first 160 patients evaluated during the first 6 months of operation of the platform

Characteristics	Mean (SD) or n (%)
Gandar n=160	
Women	00 (61 0)
Won	61 (28 1)
1 Maii $A = (y_{0}) = 160$	827+61
Age (years), II=100	62.7 ± 0.1
5</td <td>14(8.7)</td>	14(8.7)
/ 3-64	92 (37.3) 54 (22.7)
>83	54 (55.7)
Education, n=158	11 (27.9)
Higher education	44 (27.8)
Senior high school	30 (20.9)
Junior high school	13 (8.2)
Primary school	64 (40.5)
No school attendance	4 (2.5)
Marital status, n=160	
Single	15 (9.4)
Divorced	11 (6.9)
Married	67 (41.9)
Separated	2 (1.2)
Widowed	63 (39.4)
Living with partner	2 (1.2)
Living environment, n=160	
Assisted living facility	6 (3.8)
Nursing home for dependent elderly	5 (3.1)
At home (communal home)	61 (38.1)
At home (individual home)	88 (55.0)
Help at home, n=160	
Yes	106 (66.2)
Kind of help, n=106	
Home help	55 (51.9)
Visiting nurse	12 (11.3)
Physical therapist	7 (6.6)
Old age allowance	15 (14.1)
Other	17 (16.0)

THE INTEGRATION OF FRAILTY INTO THE CLINICAL PRACTICE

Table 3

Clinical characteristics of the first 160 patients evaluated during the first 6 months of operation of the platform

Frailty status (according to Fried criteria), n=158 Not frail 9 (5.7) Pre-frail (1-2 criteria) 65 (41.4) Frail (≥3 criteria) 83 (52.9) Frailty criteria (according to Fried criteria)	
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Pre-frail (1-2 criteria) 65 (41.4) Frail (≥3 criteria) 83 (52.9) Frailty criteria (according to Fried criteria)	
Frail (≥3 criteria) 83 (52.9) Frailty criteria (according to Fried criteria)	
Frailty criteria (according to Fried criteria)	
randy enterna (according to rinea enterna)	
Recent weight loss, n=158 52 (32.9)	
Feeling of exhaustion, n=157 49 (31.2)	
Decreased muscle strength, n=156 90 (57.7)	
Slow gait speed, n=155 130 (83.9)	
Sedentarity, n=158 85 (53.8)	
MMSE score (/30), n=154 25.4 ± 4.2 (12-30)	
<20 19 (12.3)	
20-24 32 (20.8)	
25-27 41 (26.6)	
>=28 62 (40.2)	
CDR score, n=155	
0 35 (22.6)	
0.5 102 (65.8)	
1 14 (9.0)	
2 4 (2.6)	
MIS score (/8), n=157 6.4 ± 1.9 (0-8)	
MIS-D score (/8), n=155 $5.5 \pm 2.6 (0-8)$	
AD-8 score (/8), n=157 3.3 ± 2.3 (0-8)	
ADL score (/6), $n=159$ 5.6 \pm 0.8 (1-6)	
IADL score (/8), n=159 6.0 ± 2.3 (0-8)	
SPPB score (/12), $n=157$ 7.4 + 2.9 (0-12)	
Good (score 10-12) 43 (27.2)	
Medium (score 7-9) 53 (33.7)	
Poor (score 0-6) 61 (38.8)	
Gait speed (m/sec), $n=155$ 0.8 + 0.2 (0.2-1.3)	
<0.6 m/sec 38 (24.5)	
0.6 to 0.79 m/sec $43 (27.7)$	
0.8 to 1.0 m/sec 49 (31.6)	
> 1.0 m/sec 25 (16.1)	
Abnormal distant vision, $n=140$ 107 (76.4)	
Abnormal near vision $n=129$ 42 (32.5)	
Abnormal Amsler grid, $n=153$ 16 (10.4)	
HHIES score (/40), $n=152$ 7.1 + 10.1 (0-40)	
No disability 106 (69 3)	
Moderate disability 26 (17.0)	
Severe disability 21 (13.7)	
Raskin score (/12) $n=155$ $74 + 29(0-11)$	
Signs of depression $5(32)$	
Nutritional status (MNA) n=157	
Good (MNA >24) 89 (56.9)	
Risk of malnutrition (MNA 17 to 23.5) $54(34.2)$	
Malnourished (MNA < 17) 14 (8.9)	
Vitamin D status $n=157$ 14 8 + 10 1 (4 50)	
< 10 ng/ml 73 (46.5)	
11-29 ng/ml 76 (48 4)	
\geq 30 ng/ml 8 (5.1)	

Regarding level of frailty, 65 patients (41.4%) were pre-frail, and 83 (52.9%) frail. The fact that 93.3% of the subjects addressed in the platform are frail or pre frail implies the capacity of the screening questionnaire of adequately detect true positives in the general population.

For what concerns the functional status, 83.9% of patients presented slow gait speed, 53.8% were sedentary, and 57.7%

had poor muscle strength. Only 27.2% of patients had a SPPB score equal to or higher than 10. Autonomy in ADL was quite well preserved (mean ADL score 5.6 ± 0.8) as expected, suggesting that the patients of the platform have not yet developed disability. Consistently, IADL showed a marginal loss of autonomy reporting a mean score of 6.0 ± 2.3 .

About one third of patients (33.1%) presented a MMSE score lower than 25. Dementia (measured by the CDR scale) was observed in 11.6% of the platform population, whereas subjects with mild cognitive impairment (that is CDR equal to 0.5) were 65.8%. New diagnosed depressive disorders were relatively rare with only 3.2% of patients showing signs of depression but some people were already treated. Numerous patients presented vision problems with 10.4% having abnormal findings at the Amsler grid. Thirteen percent of patients had a hearing loss.

Finally, it is noteworthy that 9% of the platform population presented an objective state of protein-energy malnutrition, 34% an early alteration of nutritional status, while almost everyone (94.9%) had a vitamin D deficiency (partially explained by the period of the year, that is winter-spring, of most of the measurements).

Conclusion

To prevent disability, frail older patients need to be identified and specifically evaluated starting from the general population through a close collaboration between general practitioners and ad-hoc geriatric infrastructures. The platform we designed and developed at Toulouse proposes preventive and therapeutical interventions, supports families and caregivers, and interacts with the general practitioners in order to optimize the management of the frail older patient. Our next objective will be the evaluation of the cost-effectiveness analysis of the platform and the evaluation of its clinical effectiveness over the long-term, in particular for the primary outcome of physical disability prevention.

Our preliminary results from the first 160 patients we assessed should encourage the promotion of frailty to the level of a clinically relevant condition. The identification and management of frail elderly is nowadays a clinical priority, which can no longer wait.

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