

Editorial

Rehabilitation of Fall in Elderly: The Paradigm of a New Medical Vision

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Aging is a physiological state which implies several consequences [1] involving the whole organism and each tissue and system, and it is the result of cellular programmed senescence, influenced by genetic and environmental conditions [2]. In the last two centuries, the worldwide population, and in particular the high-income countries, have seen an increase in life expectancy. This has been due to the undoubtedly continuous improvement in prevention, diagnosis and treatment. In few words, the increased life duration represents the translations of the several conquests of medicine [3]. However, aging is not necessarily synonymous with success. An aging person tends to experience reduction in their body functions and is inclined to limit physical activity and social participation. In the last years, in fact, the locution “successfully aging” has been coined to indicate the aging process associated with the maintenance of a high level of quality of life [4]. If some features determining the success of aging are intrinsic and unmodifiable (such as genes or particular clinical history), some variables are related to habits and behavioural strategies [5]. The management of these latter variables represents the key role of geriatric rehabilitation. We possess several instruments capable to support people’s daily life and to restrict single risky circumstances opposing well-being. Among the common events which may occur and negatively impact the quality of life in old people, the risk of falls is extremely important [6]. The fall-related consequences are numerous: death, trauma, bone fractures, psychological complications, immobilization and effects of prolonged bed rest. Rehabilitation can prevent falls and can limit their eventual aftereffects [7]. Many rehabilitation strategies are possible for these purposes. For prevention, accurate clinical monitoring is mandatory to depict the minimal changes in the different systems. In fact, not only the neuromuscular or the skeletal systems are involved, because even the fear of falling itself is related to an augmented risk [8]. Hence, the geriatric patient should be massively evaluated with proper quantitative and precise outcome measures. After the correct evaluation, the proper preventive treatment should be based on the bio-psycho-social approach, with exercises and education aimed to improve physical function, reduce sarcopenia, increase psychological abilities and encourage social participation [9]. Concerning the role of rehabilitation in the treatment after falls, the main aim is the return to activity and the overcoming of the fear of falls. For these purposes, conventional physiotherapy and occupational therapy are not always sufficient. In the last decades, virtual reality, robotic treatment and non-invasive brain stimulation have seen increased applicability in clinical settings. They are capable of supporting manual therapy and speeding up recovery [10]. Additionally, they can improve the participation of all-age patients and strengthen the body–mind interaction, essential for general functional recovery. However, some problems in the described approaches exist. In facts, besides their general efficiency, the scientific evidence is partially spoiled by their enormous variety and the common inhomogeneity in the terms used to describe them [11]. Another problem is the difficulty in a direct comparison of the different approaches and, in some cases, the lack of high-level studies for long-term effects [12]. A few doubts exist about the effectiveness of associations of more treatments (e.g., physiotherapy and robotic treatments, or physiotherapy and brain stimulation). However, in order to determine the



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more appropriate individualized rehabilitation projects with their specific programs, a huge effort needs to be made in the scientific community. Other problems remain open and should be taken into consideration by the researchers, especially in light of the new medical frontiers. In particular, gender medicine, policies of healthy systems, economic restrictions, new technologies, and the hyper-connection of the world countries are just a few topics that will guide the medical sciences in the near future [13,14]. The falls and their consequences, namely the rehabilitation of the elderly, are not exempt from these topics. For these reasons, the repercussion of the rehabilitation strategies should be evaluated from multiple points of view. A collaboration of different types of scientists with different backgrounds is required. The challenges of third-millennium medicine, of which geriatric rehabilitation is a good example, involve not only medicine itself, but even engineering, science and technology studies, economy, political science, anthropology and other fields. If we desire a real technological transition with the amalgamation of the new rehabilitation methods with real life, we should expand our vision and apply multi-disciplinary interaction [15]. As shown above, human knowledge and its applications are constantly changing and constantly reveal new problems and new solutions. However, only a rational synthesis of the data and proper utilization of the shared information will produce progress for healthy aging. This Special Issue about the post-fall rehabilitation for the elderly is constructed to spur this multi-disciplinary interaction. Luckily, daily scientific news affirms the fact that human life expectancy is increasing. The role of rehabilitation doctors and other involved researchers is to guarantee that a patient's long life may be as pleasant as possible.

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