

Focus on the functional decline and the process of ageing in the SCI population

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The spinal cord injury always have been reported to be mostly of traumatic etiology especially in the young, but at least in Europe and especially in Italy it seems that this trend is suffering a major reversal and recent analysis in this area seem to testify that the spinal cord injury of non traumatic origin are taking the upper hand over those traumatic, and that the elderly population will suffer major consequences.

This new trend of conduct in spinal cord injury leads us to reflect on two issues, the first is the age of onset of the disease and its implications following over the life of the spinal cord damage, the second presents us with the basic question of interest: if the various stages of passage of the spinal cord injury are the same whether the person is young or old according to a model of aging and of functional decline.

In spinal cord injuries, immediately following the onset, the individual incur on a phase of maximum invigoration, acquire capable function for ADL allowed by the level of SCI and neurological recovery, maximizing the functional potential through rehabilitation. This phase is called acute restoration and may last approximately 1 ½ year; this stage is followed by the maintenance phase or plateau, SCI may reach a symbiosis between capacities and functional activities and the vestiges from disability, this period may last in young-onset individuals 20-25 years, and in late-onset or elderly individuals a few years. A functional decline phase may follow in which overuse, physiological and degenerative changes of age may present.

Menter *et al.* [1] has developed a model of aging that predicts the functional decline of individuals and allow us to determine when these changes may occur. It's known that as individuals age, they experience a variety of new and unanticipated issues, which may include; medical, functional, socioeconomic, and support problems. Individuals experience changes and functional declines in all body systems as they age. The rates of decline vary from individual to individual, depending on genetics, body habitus, lifestyle, and general state of health.

The literature suggests that persons with SCI may be more susceptible to earlier age-related functional declines when compared to the able-bodied (AB) population [2]. Adkins reported that the SCI accelerates bodily declines at approximately the time of injury, after which the effect of aging is said to proceed at a normal rate [3]. This last statement seems to corroborate that SCI only has a negative influence in the early stages in people with late-onset SCI or older, while later, the age-related functional decline is not influenced by the lesion.

Contrary to the aforementioned statement, Cushman and Hassett [4] evaluating individuals with at least 15 years old SCI, found that 93% had experienced a decline in functional status by the time of the first evaluation. According to Kempt (Long Term Outcome with disability,

Rancho Los Amigos Seminar, 1998) individuals of age 55 years at the onset of their SCI may only have 5-7 years of relatively stable functioning status prior to experiencing a decline.

It has been reported by Liem *et al.* [5] that, constipation, pressure ulcers, female gender, and years post-injury were associated with the need of more aid with the activities of daily living (ADLs). There was a 42% increased odds of needing more help with ADLs per decade after SCI. In females SCI, the higher rates of divorce, separation, and single (remaining) mean that they are more likely than men to receive personal care from an attendant [6].

According to Rose [7], the functional outcome of a person with spinal cord injury will depend on many factors, that when they come together, will determine which of our patients will bloom and who will be prostrate from the challenges of SCI/D. Certainly, proper medical care, physical therapy, occupational therapy, recreational therapy, vocational rehabilitation, nursing care, sufficient family, friends and community resources facilitated by social work, and direct and indirect interventions by psychologists will make a major impact on outcomes.

In conclusion, the aging process and the influences of SCI over it, should be taken under account when planning SCI rehabilitation in the elderly. The elder SCI require not only specialized medical care and rehabilitation, but also, easy access in environments suitable for wheelchairs, appropriate homecare, adequate equipment, transportation and financial support. SCI specialists will need to be aware that older individuals may have an increased incidence of other cumulative illness (e.g. ischaemic heart disease, hypertension, cardiac failure, diabetes mellitus, anemia, cerebrovascular etc.) and the identification of the SCI may be delayed, the symptoms manifested difficult to understand and examine and the age-related functional decline difficult to predict and overcome. This limits the "sick" old (in addition to the young) SCI to return home and reintegrate into society, increasing the medical and social costs of our society.

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