Medical rehabilitation for elderly people: human, ethical, and medico- economic challenges

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The Convention on the Rights of Persons with Disabilities adopted by the General Assembly of the UNO on December 13, 2006 [4] and ratified by the majority of the countries of the European Union emphasises in its introduction that "Any obstacle to complete and effective participation in the life of society is regarded as a negation of human dignity". Among the factors likely to create an effective discrimination against participation between individuals, those founded on the process of ageing and the associated reduction in financial resources are most frequently encountered in elderly people. However, any human community has the duty to promote, protect, and assure the rights of its individuals in respect of their dignity (Article 1).

The ethical challenge

Article 25 of the Convention, relating to health, states that 'Persons with disabilities have the right to enjoy the highest possible standard of health without discrimination resulting from disability and age; signatory States shall take all appropriate measures to ensure access for persons with disabilities to health services, including health related rehabilitation'. But how, in reality, can the field of Health minimise and prevent the further development of numerous new impairments in elderly people? Access to medical rehabilitation helps to maintain maximum autonomy, and to optimise realization of the potential of elderly people so as to promote their participation in the life of society. Thus Article 26, relating to Rehabilitation, states that : 'Signatory States shall take effective and appropriates measures… to enable persons with disabilities to attain and maintain maximum independence, full physical, mental, social ability and full inclusion and participation in all aspects of life'.

Unfortunately it is frequently reported that the process of ageing, combined with limited financial resources, results in a maximal exposure to the risks of restricted access to healthcare. The WHO in 2011 [20] drew attention to the following 4 key facts:

- ‘Over a billion people, about 15% of the world’s population, have some form of disability
- Between 110 million and 190 million people have significant difficulties in functioning
- Rates of disability are increasing due to population ageing and increases in chronic health conditions, among other causes, and
- People with disabilities have less access to health care services and therefore experience unmet health care needs.’

Advanced age is too often the reason given for declining or limiting acute health care, and even more often the reason for declining to provide medical rehabilitation. It is the responsibility of the community to implement the objectives of recognising need and providing help to the whole population. Any inequality of access to the care, if it exists, is unavowed discrimination. Such ‘hidden’ discrimination is serious and ethically and socially condemnable, because the absence of truly open choice always distorts the distribution of care to the disadvantage of the most vulnerable members of the population. Such revocations or limitations resemble an implicit force, harming though negligence or abandonment (in which the family circle is sometimes complicit) and affecting a particularly vulnerable section of the population [11]. Such medical ‘abuses’ were rightly denounced in a resolution dated April 22, 1993 of the European Parliament recognising the link between ‘negligence, abandonment and discrimination’. The absence of choice, implicit in failure to provide care, contravenes medical and community ethics.

Two types of political answer currently exist [3]: an ‘egalitarian’ (or ‘ethical’) answer and a ‘utilitarian’ (or ‘expedient’) answer, sometimes termed ‘distributive justice’. In the evolution of our developed countries, crises in health expenditure have resulted in a rise to power of the ‘Utilitarian’ argument to the detriment of the ‘Egalitarian’ ideal of ‘To each according to his needs’. The ‘Egalitarian’ principle (inspired by the philosophy of Emmanuel Kant) is regarded as leading to ethically correct action that respects human dignity. The concept of dignity embodies an unconditional value recognised as inherent in all members of the human family (Introduction to the Universal Declaration of the Human Rights of December 18, 1948). Applied to medicine, this concept states that each one must be treated according to his or her needs, without regard to condition, age, hierarchical position or social rôle. Unlike

physical appearance or mental and physical health, dignity is an integral asset for every person, having a moral dimension which imposes an unconditional duty of recognition and respect [3].

'Utilitarianism', by contrast, advocates a rational distribution of the services of care according to needs on a collective scale. From this point of view, the 'Equitable' solution must also be the 'right' (morally correct) solution. Consequently, it is not necessarily in conformance with the duty of Justice to invest considerable sums of money on a small number of cases, or cases of less value to society (as elderly people are all too often regarded). In such arguments are to be found the justification for removing choice, and for restricting the resources that would allow elderly people access to medical rehabilitation.

The epidemiological, economic and medical challenge

For medical practitioners, age considered in isolation is much too reductive an element to be used as a selection criterion for offering timely curative or intensive treatment. There are many scientific references showing that the age is not an independent prognostic or discriminant factor in the prognosis of disease or of recovery after an accident. On the contrary, notable advantages can be gained by a rapid intervention when supported by measures that maintain the autonomy and mobility of frail elderly people. For example, with surgery after a fracture of the neck of the femur, a hip prosthesis for a nonagenarian can confer a life expectancy of several years and save money by helping to preserve a degree of autonomy. The alternative 'treatment' of immobilization risks, by contrast, leading to an expensive loss of autonomy exacerbated by multiple and expensive medical complications.

A recent review of data from a range of developed countries [2] explored the question of whether increasing life expectancy is accompanied by postponement of some of the impairments of old age and concluded that while the final answer to this question remains open, research evidence suggests that ageing processes can be modified and that people are living longer without disability. Thus the lengthening of life expectancy in developed countries does appear to be accompanied by extension of the period of autonomy for the individual. Indeed the definition of 'old age' has been pushed back and a distinction made between 'young - old adults' aged from 65 to 74 years, 'old adults' from 75 to 84 years and 'very old – old adults' beyond the age of 85 years, this last category being of course the one most exposed to loss of autonomy.

Medical specialisation and Rehabilitation

The disabilities associated with advancing age are multiple - physical, cognitive, sensory, and mental and the range of the medical problems which mark ageing is particularly vast and complex. The difficulties of integrating medical treatment and promoting rehabilitation in this age-group are recognised in the training programme of the UEMS PRM Board , in use in many European countries, which includes many topics related to 'Geriatric Medicine' and a dedicated chapter (D5) entitled "PRM and the elderly patient".

However, clinical services for elderly people have developed (and continue to evolve) in different ways in the different countries of the EU. In consequence, in their day to day practice, specialists in PRM have varying opportunities to further develop their skills in relation to elderly people. Denmark has elected not to have a specialty of PRM at all. In the UK and Ireland, Geriatric Medicine is a well developed specialty while Rehabilitation Medicine is a small specialty that in most hospitals does not have the resources to deal with inpatients over the age of 65 years. Even for elderly outpatients, PRM involvement tends to be relatively restricted in the UK except for amputees.

At the other extreme, the Netherlands and Slovenia have no separate specialty of Geriatric Medicine and thus over 50% of PMR inpatients are over the age of 50 years. Other countries such as France, Italy and Spain occupy an intermediate position between these extremes, such that the skills of managing the medical conditions of elderly people can in general be maintained by PRM specialists, who are able to call on their colleagues in Geriatric medicine for help with particularly complex medical problems.

Neverthess, across all countries it is recognised that there is currently a risk that an elderly person's rehabilitation and medical needs may not be optimally met, whether because of restriction of resources or because of sub-optmal integration of their rehabilitation with their medical treatment. In essence, the expertise of a physician in Geriatric Medicine (General Medicine for Elderly People) combined with the expertise of a PMR specialist is necessary

in complex cases in order to analyse the functional incapacities of older people, and to take full account of their interaction with medical problems.

This process is enriched by the inter- and multi-disciplinary patterns of clinical work (specifically including the therapies, clinical psychology and rehabilitation technology) that has been developed in PRM for promoting medical rehabilitation. Thus, if medical rehabilitation of high quality for elderly people is to be achieved, a permanent dialogue and close collaboration will be essential between doctors in Geriatric Medicine and doctors in PRM in all countries in which both these specialties exist..

The fundamental objective of rehabilitation for elderly people is to safeguard mobility, physical fitness and mental health including their capacity for decision making, in order that they can enjoy independence, autonomy and social participation in their daily life. But achieving this goal in practice requires a certain fatalism to be overcome in relation to some of the changes that occur in old age (declining capacities of vision and hearing in particular) and restrictions of their participation in social life;. In addition, it is important to recognise that a decline in financial income and environmental restrictions as people get older are likely to reduce their participation, as compared with that of younger adults, in the life of society.

Which type of medical rehabilitation ?

Many published papers have reported on the methods and on validation of the techniques used in medical rehabilitation for elderly people. The vulnerability which leads to loss of autonomy is the result of physical, sensory and cognitive deterioration and, very often, depression, which can be masked. The noxious effects of prescribed drugs, often in excessive amounts, must be identified and corrected to prevent disorders of balance, the risks of falls and their consequences, immobility and also urinary and faecal incontinence, confusion and cognitive impairment. Sensory deficits must be corrected when possible in order not to intensify isolation. Excellent communication with the patient, the family and friends is essential in developing a good understanding of the elderly person's objectives and the possibilities offered by rehabilitation, so as to promote adhesion to the rehabilitation programme**.** A solution to facilitate daily activities (such as shopping, budget management and preparation of meals) must be proposed.

Mobility and regular physical exercise

There is strong evidence that elderly people are able to improve their muscular strength and resilience by regular exercise [10,13,14]. This is likely to confer benefits not only by increasing the ease of moving about and the range of physical activities in which elderly people can engage, but in promoting cardiovascular fitness and the avoidance of osteoporosis and of depression. Regular physical activity and the undertaking of progressive exercises against resistance are of proven effectiveness in the prevention of the falls [13], and in resuming engagements outside the home out and improving general mobility after operations for fractured neck of femur or hospitalisation for other reasons. Thus intensive rehabilitation, as in the post-operative period, improves functional independence and supports the return to the person's usual environment, decreasing the risk of needing to be placed in an institution - even in the presence of some cognitive decline [13].

Adaptations and technical equipment such as a walking stick, walking frame, manual or electric wheelchair, and technical appliances to help in daily activities including their installation in the home, are proposed in the light of the presence of obstacles in the environment, and in particular the opinions and degree of acceptance of the elderly person so as to ensure the assimilation and use of these adaptations to daily life.

Cognitive activity

In the field of cognitive impairments, publications relating to the strategies of rehabilitation in Alzheimer's disease have shown that cognitive rehabilitation does not only promote function but slows down the consequences of cognitive decline [1]. This can be achieved by calling upon therapies providing explicit training ('Top – Down' type) in the event of moderate disability (Mild Cognitive Impairment) or of average gravity (exercises involving mental calculations, recall of words or text, verbal fluency, spatial perception, recognition of faces…) or alternatively by means of a global readaptative solution through implicit procedural memory procedures ('Bottom – Up' type) that require a comprehensive rehabilitation program.

Thus training directed towards activities of daily living gives better results than attempts simply to stimulate residual cognitive functions. Equally important are group occupational activities directed towards leisure activities, social interaction and emotional control, very often coupled with physical training. In principle, the promotion of contextually relevant and meaningful activities for elderly people should always be given priority.

Illustrative examples: stroke

The example of stroke occurring after the age of 75 years is particularly illustrative of the interest and the importance of a medical rehabilitation, with particular respect to the resumption of mobility and, specifically, to walking. Even if it is allowed that age does not have an influence on the level and the speed of recovery of impairments, it is likely to have some effect upon the capacity for compensation and limitation of activity [15]. And yet, from the onset of the acute recovery period, elderly people draw benefit from admission to an Acute Stroke Unit and, in the secondary phase, from admission to a Specialized Rehabilitation Unit. The reduction in early mortality, and in physical and cognitive impairments, from admission to such units are attested to by many studies [5, 6,7, 10, 12].

By contrast, these same studies show that late and limited rehabilitation both quantitatively and qualitatively, result in an inferior optimization of functional competences, inadequate recommendations for technological assistance and a higher rate of institutionalization or premature discharge home. These failures result in more disabling complications and ultimately excessive costs both financial and human, direct and indirect. The benefit of a rehabilitation program continues to be measurable despite the presence of proven cognitive deficit (as identified by the Mini Mental Status Examination $\leq$ 20/30) in lessening the consequences of isolation, malnutrition and especially depression, which is known to be directly related to the worsening of limitations of activity and restrictions participation recorded one year after a stroke [14].

Where should the medical rehabilitation of elderly people take place?

A number of medico- economic surveys have compared the effectiveness and the cost

of medical rehabilitation delivered at a hospital, in residential settings (old people's residential or care homes), and in day or residential centres. It is difficult to draw general conclusions from these surveys because medico- social service organization differs from one country to another in the European Union. In effect, social relations policy in some countries encourages the maintenance of elderly people in their own homes while in other countries, they are steered towards reception facilities and residential institutions, potentially resulting in loss of their autonomy.

Thus one study compared the effectiveness of the rehabilitation delivered in a day hospital with that delivered in a residential institution [16]. Geriatric Day Centres obtained better results in terms of return to autonomy, but appeared more expensive. Rehabilitation at home had the advantage of being better centred on the needs of the residents, coming closer to the objectives of participation and making it possible for them to take part in family life with help from others. On the other hand, the rehabilitation achieved there was often of shorter duration; it was more difficult to deliver a multidisciplinary approach and the environment was sometimes too restrictive.

A study of Medical rehabilitation at home after repeated hospitalizations confirmed that the competence of the social workers (case managers), their knowledge of the available resources in the nearby community, and the possibilities of a best fit to the concrete needs of the patient, were factors determining success in achieving the goals of rehabilitation. Moreover, a coordinated program of geriatric evaluation, allowing the application of objective measures of the effect of rehabilitation, was confirmed to be important in limiting the risks of readmission to hospital [16].

The organization of intermediate structures that make it possible to accept elderly people after hospitalization for an acute disease to continuation of care and rehabilitation is recommended in many countries of the European Union. Such Units must allow an integrated medical and social approach and aim to be able to accept patients whatever their impairments (including in particular those presenting with a cognitive impairment). The relationships between the structures providing acute care and the structures providing intermediate care require a permanent dialogue, to avoid the risk of isolating continuing care from rehabilitation. The essential point is the organization of a course of care that is effective, coherent, and especially always ready to meet the needs of elderly people. However, the level of proof of the relevance

of these intermediate structures remains to be established: what impact do they have on reducing readmissions to hospital because of a new acute problem? What is their effect upon subsequent referrals to residential institutions?

'Hospital at Home' is another means by which responsibility can be assumed by intermediate care. This is a service that provides active treatment, delivered by health professionals, in the home of the patient, a service that could otherwise be provided only within the framework of a conventional hospitalization. One of the principal advantages of this is flexibility, but the duration of assumption of responsibility is generally limited. Studies comparing life experiences in 'Hospital at Home' with a conventional Hospital show high levels of patient satisfaction but an increased number of medical concerns identified by medical staff. However, neither clinical results (possibly an increased mortality?) nor the possibility of financial economy make it possible to confirm the relevance of 'Hospital at Home' medical care, the more so as experiments directed more specifically towards the assumption of responsibility for medical rehabilitation are very rare. The relevance and value of home medical care of a palliative nature, or 'End-of-life' care carried out by highly qualified professionals, seems more definitely established.

The way forward for reinforcement of the effectiveness and means of medical rehabilitation in elderly people.

Interdisciplinary communication, working and professional development.

The World Report on e Handicap adopted by the WHO June 9 2011 [17] underlined the demographic burden represented by elderly handicapped people and the ethical, economic and social requirements of access of this population to rehabilitation Medicine. This same report describes the concrete actions imposed on States to overcome the obstacles limiting such access, including reforms of the health and social services; reorganization of service delivery including a revision of national programs of Rehabilitation; reforms and development of the finance devoted to these activities; an increase in the human resources, including the training and the continuing professional development of the personnel already in place; development and decentralization of the services delivering medical rehabilitation; improvement in the access to technologies (especially technical assistance) and development of a research

program, including improvement in the information designed for handicapped people and their access to guides of good practice.

The implications of this report for the medical practice of Rehabilitation and PMR [17] are illustrated by the goals and strategies of Rehabilitation as set out in the principles of the International Classification of the Functioning, Handicap and Health (CIF) [18]. They include, among others, the necessity (in accordance with all the dimensions of the CIF - functions of the body and anatomical structures, activities and participation, environmental and personal factors) to promote an approach centred on the needs of the patient and the participation of patients in decisions that are taken, and to work in expertly coordinated multi - professional teams.

Effective communication between the various partners is thus an essential condition for elderly people's access to medical rehabilitation. In first place, there needs to be a sharing of information not only between Specialists in Geriatric Medicine and PRM Specialists but also between all the professional members of the rehabilitation team (physiotherapists, occupational therapists, speech and language therapists, clinical psychologists and social workers or case managers). This fundamental dialogue and information exchange can be carried out as most effectively (in the hospital sphere) by the creation of 'Mobile Geriatric Teams'. The objective is to remove barriers between the structures of acute care, of intermediate care, and of Community structures by a rapid sharing of relevant of the medical and social information so as to define needs as well as possible and to identify the necessary solutions.

This process is likely to require flexible patterns of interdisciplinary teamwork so as to ensure that best practice is evaluated and shared. Assessments should be expert in quality and scope, but not unnecessarily repeated because of a practitioners' failure (whatever the discipline) to work collaboratively. This would help optimise outcomes for elderly people. Both the process and in particular the outcomes should be monitored regularly and the results fed back to practitioners. Professional jealousies must not be allowed to stand in the way of redevelopment and reassignment of different professional rôles where this is shown to be needed in order to improve the effectiveness of the service and the outcomes for elderly people.

Re-evaluation of the rôle of specialists in PMR

The rôle of the specialist physicians in PMR in this network must be better recognised than it is it today in many European countries. Indeed, the majority of the studies published on medical rehabilitation of elderly people comes from those working in General or Geriatric Medicine. It is self-evidently necessary for physicians in PMR to develop a closer dialogue with their colleagues in Geriatric Medicine. This would be likely to result in better knowledge of the therapeutic means employed in PRM, such as the application of appropriate measures of function and engagement, the regular use of cognitive assessment to guide therapeutic approaches in rehabilitation, and the cooperation and stimulation that characterises the work of well coordinated multi- and inter- professional rehabilitation teams.

This essential dialogue can be established at the level of the respective scientific societies by Consensus Conferences such as have already taken place in certain European Countries on major topics of Geriatric morbidity such as fractures of the neck of femur, stroke in the elderly, cognitive and behavioural disorders, disorders of ambulation and falls, and the planning and promotion of health. More joint research projects should be undertaken, involving practitioners and associated staff from both disciplines, as well as elderly users of rehabilitation services.

Implications for the training of medical practitioners in PMR (Rehabilitation medicine) and in Geriatric Medicine.

The ethical imperatives outlines above do have implications for the training of medical practitioners at post-graduate levels both in clinical practice and in research. This will be most important for the Specialist disciplines of PMR and Geriatric Medicine, but since all disciplines, both medical and surgical, frequently encounter elderly people in their day-to-day work, the medical profession in general needs to revise on a much wider basis its grasp of both the needs the and potential responsiveness to rehabilitation of elderly people.

Towards a Conclusion: ageing with dignity.

The needs that elderly people have for rehabilitation draw attention, on this evidence, for a commitment from public health. Advancing age and increasing life expectancy in developed

countries impose upon our medical and social policies the ethical requirement of 'Aging well' with dignity. To age with dignity demands pushing back, as far as possible, the exigencies of loss of autonomy by mobilizing the human and technical means which modern medicine has the duty to provide for elderly people. It remains necessary, to met this objective, that to potentially vulnerable elderly people should be given all the means for treatment, the right environment, the technical help aimed at recovering and protecting their capacity for decision-making and autonomy. Specialists in PMR need to engage in a close dialogue and coordinated service delivery with specialists in Geriatric Medicine.

To age in dignity with optimal autonomy also demands that the lifestyle choices and privacy of elderly patients are respected. A challenge for rehabilitation is not to oblige the elderly to do so, nor to persuade them; it should be the choice of the patient who, at any given moment during the process of ageing, could be in the situation of not being able to understand what is being offered with regards to his health, but who could have left directives anticipating his personal lifestyle choice. It would be morally and ethically unacceptable not to attempt to collect, before making any decisions relating to direction and medico-social intervention, the consent (or perceived consent) of the person, reflecting the nature of the information that had been given to him about the prognosis of his illness or injury. PMR does not impose solutions, it participates in choice and develops options for the patient to help meet objectives that have been fully explored and agreed.

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