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First impact on services and their preparation. "Instant paper from the field" on rehabilitation answers to the Covid-19 emergency

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Abstract

This paper reports the immediate impact of the epidemic on rehabilitation services in Italy, the first country in Europe hit by Covid-19. In a country with almost 5,000 Physical and Rehabilitation Medicine physicians, the webinar had 230 live viewers (4.5%), and more than 8,900 individual visualizations of the recorded version. The overall inadequate preparation of the rehabilitation system to face a sudden epidemic was clear, and similar to that of the acute services. The original idea of confining the Covid-19 cases to some areas of rehabilitation wards and/or hospitals, preserving others, proved not to be feasible. Continuous reorganization and adaptation were required due to the rapid changes. Overall, rehabilitation needs had to surrender to the more acute emergency, with total conversion of beds, wards and even hospitals. The quarantine needs heavily involved also outpatient services that were mostly closed. Rehabilitation professionals needed support, but also acted properly, again similarly to what happened in the acute wards. The typical needs of rehabilitation, such as human and physical contacts, but also social interactions including patient, team, family and caregivers, appeared clearly in the current unavoidable need of being suppressed. These notes could serve the preparation of other services worldwide.

Introduction

The worldwide need to provide professionals with timely field information on the consequences of the Covid-19 epidemic on rehabilitation services has been recently outlined (1). This is due to the rapid spread of the infection, and continuous and largely unpredictable health systems changes (2-4). This paper reports the immediate impact of the epidemic on rehabilitation services in Italy, the first country in Europe hit by Covid-19, recorded during the first webinar on the topic ("Covinar") (1) organized by the Italian Society of PRM (SIMFER) on March, 18th.

The Covinar

Seven PRM physicians from 6 Italian regions participated to the Covinar. Their experience reflected the situation of the epidemic in their region on March 18th (Table 1) on their services and settings (Table 2). Some had already experienced Covid-19 in their own services, others in their hospitals acute care wards, and some had been alerted and were preparing. Two of the authors (PB, AM) prepared and sent in advance to the participants a series of questions. One of the authors (PB) acted as an interviewer, asking the scheduled questions as well as questions received live during the Covinar. Due to the further diffusion of the epidemic in Italy, participants were finally contacted on March, 31st to get a short report of changes occurred after the interview. Out of 5,000 PRM physicians in the country, and of 3,300 PRM SIMFER physicians who received the Newsletter for information 3 days before the webinar, live participants to the Covinar were 230 (4.5% and 7%, respectively). In the subsequent 15 days there were more than 8,900 individual visualizations of the recorded version, including other specialists and rehabilitation professionals.

The impact of the epidemic

Impact on rehabilitation services reflected the general epidemiological situation of the area. Positive cases among patients, with the impossibility to implement timely and proactive prevention measures, occurred in areas with a sudden and sharp increase of the epidemic: here rehabilitation services were hit just after the first outbreaks. Patients became symptomatic for Covid-19 after admission, with infections possibly coming from visitors or personnel. Patients and health professionals screening was planned or performed, but only in the epidemic areas, with rate of positives up to 30%. Restrictions to access of visitors were effective in the hit services, while in some others as a preventive measure. The severity of diagnosed cases in the rehabilitation services was reported as mild to moderate. Some symptomatic patients had to be transferred to other units, but others were discharged home.

Reorganization of services

An overall difficulty in acting proactively and in defining a stable framework for organization and delivery of rehabilitation interventions was reported. To prepare the overall reorganization of services, early discharge from rehabilitation units of negative patients was performed, with shortening of their rehabilitation plan (medical stability, prevention of complications, initial functional recovery and supply of essential technical aids). Availability of home-and-community services proved to be very helpful.

A sharp decline was registered in PRM consultations requested by acute services due to the usual health conditions. In case of Covid-19 positivity, the possibility to wait for a virologic remission before transfer or discharge was not always granted. New admissions had to be suspended or temporarily reduced. Pre-admission screening systems were set in place to test for Covid-19. Wards inpatient and rehabilitation activities had to be rapidly reorganized to isolate Covid-19 positive patients, and differentiate the pathways of negative patients. In one case, the entire hospital was identified as "non-Covid-19" by the Regional Health authorities, so that new patients were firstly admitted and screened in other hospitals and transferred only if proven negative.

Outpatient services were suspended everywhere; in one case a telerehabilitation service was immediately activated to provide home assistance to patients, including consultations and supervised exercise prescriptions. A general concern was expressed on the preservation of adequate rehabilitation standard.

Impact on the rehabilitation team and on information/communication with family members

Health professionals were trained on personal protection, while concern on shortage of protecting material was common even if did not happen. Dedicated shifts modifying working hours to minimize interactions between the Covid-19 and non-Covid-19 areas was required. Sometimes limitations to social activities greater than the general population were required to health professionals.

Growing emotional distress of the rehabilitation team members was reported, mainly due to uncertainty and rapid changes. Psychological support and involvement of personnel in the decisional process were strengthened. Nevertheless, health professionals were generally showing a remarkable commitment and profound sense of closeness with the persons served ("Behind the masks the humanity has been unmasked").

After the start of PPE wearing, the dilution and dampening of contact with the patient and within the rehabilitation team was striking. Communication with caregivers was organized with regular phone calls, also by physicians, or team teleconferences. The gratitude expressed by family members was "somewhat surprising".

Follow up on March 31st

In March, from 18th to 30th, the total of Covid-19 cases registered in Italy was more than doubled (105.792), and hospitalized patients raised to 28.192. Hospitals not previously interested were following the same path, while entire rehabilitation wards were converted in Covid-19 acute medical wards, with full discharge or transfer of inpatients. The hospital previously identified as non-Covid-19 registered positive cases, confirming the difficulty of maintaining rehabilitation facilities completely isolated.

Conclusion

The overall inadequate preparation of the rehabilitation system to face a sudden epidemic was clear and similar to that of the acute services (5). The original idea of confining the Covid-19 cases to some areas preserving others proved not to be feasible. Continuous reorganization and adaptation were required. Overall, rehabilitation needs had to surrender to the more acute emergency, with total conversion of beds, wards, and even hospitals. The quarantine needs heavily involved also outpatient services, that were mostly closed. Rehabilitation professionals needed support, but also acted properly, again similarly to what happened in the acute wards (6). The typical needs of rehabilitation, such as human and physical contact, but also social interactions including patient, team, family and caregivers (7-10), appeared clearly in the current unavoidable need of being suppressed. These notes could serve the preparation of other services worldwide.

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	Rehabilitation services										Setting		
	Acute	**Post-acute**						**Long-term care**	**Outpatient**	**Home and community**	**Hospital**	**Location**	**Catchment area (inhabitants)**
		Beds	*SABI*	*SCI*	*MSK*	*Neuro*	*Pneumo*	*Cardio*						
SB	Yes	40	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	General Regional	Treviso (Veneto)	1 million
RB	Yes	24	No	No	Yes	Yes	Yes	No	Yes	Yes	No	University	Parma (Emilia Romagna)	1 million
SG	No	120	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Rehabilitation	Rovato (Lombardia)	1.2 million
LL	No	190	Yes	No	No	No	No	No	Yes	No	No	Rehabilitation	Crotone (Calabria)	2 millions
FP	Yes	34	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	General	Viareggio (Toscana)	600.000
FS	Yes	14	Yes	Yes	Yes	Yes	No	No	No	No	No	General	Foligno (Umbria)	900.000
SS	Yes	70	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Regional University	Ferrara (Emilia Romagna)	350.000 1 million (SABI)

SABI: Severe Acquired Brain injury SCI: Spinal Cord Injury; MSK: Musculoskeletal; Neuro: Neurological; Pneu: Pneumological; Cardio: Cardiological.

Table I

TAB 1 – REPORTED CASES OF SARS Cov-2 at March, 18th, in Italy, and in the Regions of the participants (in parentheses the total cases in the areas where the participants operate)

AREA	TOTAL CASES	HOSPITALIZED	ADMITTED IN ICU
ITALY	35.713	14.363	2.257
LOMBARDIA	17.713 (Brescia 3784, a)	7285	924
EMILIA-ROMAGNA	4525 (Parma 800, b; Ferrara 64, c)	1784	247
VENETO	3214 (Treviso 591, d)	646	195
TOSCANA	1330 (Massa Carrara 176, e)	427	160
UMBRIA	247 (Perugia 164 , f)	54	21
CALABRIA	129 (Crotone 23, g)	45	11