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Original article

Continuity of care for patients with hip fracture after discharge from rehabilitation facility

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Summary. *Background and aims of the work:* Hip fracture is a dramatic event especially in the elderly and the return to the pre-fracture functional and social state is often difficult to achieve. In the post-acute, the intensive rehabilitation period aims to recover as much autonomy as possible to these patients, but not always its duration is sufficient to ensure an effective and lasting result in returning home, hence the need for additional rehabilitation services. Our aim was to evaluate the use of additional rehabilitation services by patients who underwent hip fracture after an intensive rehabilitation treatment period performed at our hospital. *Methods:* This is a retrospective cohort study. We involved patients aged 45 years and older, admitted at our intensive rehabilitation, who joined a rehabilitation program for a hip fracture. *Results:* Our results showed how the use of further physiotherapy is associated with the type of surgical intervention and with higher Cumulative Illness Rating Scale CIRS scores. Similarly, the loss of autonomy is associated with the type of intervention, the increase in CIRS and the duration of the physiotherapy, and negatively associated with the duration of each session. The re-hospitalizations for each cause is positively associated with CIRS and negatively associated with the further use of physiotherapy. *Conclusions:* Our conclusion is that rehabilitation needs a personalized schedule, because the real discriminating factor in the management of frail patients should therefore be the quality, and not the quantity (i.e. longer session), of the rehabilitative intervention prescribed. (www.actabiomedica.it)

Key words: hip fracture, rehabilitation outcomes, post-acute care, hip fracture and surgery

Introduction

The fracture of femur, a dramatic event especially in the elderly, has an important impact both on the clinical level, as a factor of acquired comorbidity, and on the social level, through the reduction of the independence and autonomy of the patient (1, 2). The return to the pre-fracture functional and social state is often difficult to achieve and frailty that characterizes these patients has different expressions: the reduction of the ability to carry out daily activities both simple (Activity Daily Living, ADL) and instrumental (Instrumental Activity Daily Living, IADL), increased disorientation, possibility of further falls, new accesses to the Emergency Room. In the post-acute period, the intensive rehabilitation period aims to restore as much autonomy as possible to these patients, but not always its duration is sufficient to ensure an effective and lasting result on return home (3, 4). It is also interesting to note that, as emerges from the literature, one of the first factors involved in determining the optimal recovery of the patient is the time gap between the fracture event and the surgery (5, 6). The scientific community has in fact established its desirable duration of maxi-

mum 48 hours, since the increase in this time gap increases the patient's risk of intra- and post-operative complications, delaying and compromising his/her optimal5 overall functional recovery (7-9).

In the literature, several studies have analyzed the impact of rehabilitation on the functional outcome of the patient, and on the possibility of discharging a patient to home, without the onset of further early complications: the risk of new hospitalization or institutionalization is in fact high in the light of the type of patients who typically face a fracture of the femur, as elderly and with one or more comorbidity (10). It is interesting to note that in general only a small percentage of people return directly to their home without any need for rehabilitation or stay there even after a long time after discharge from the rehabilitation facility (11). Moreover, strictly related to the functional outcome that we aim to achieve at the time of compilation of the Individual Rehabilitation Project, is the setting in which the patient can perform rehabilitation: when it is conducted in specialized facilities rather than at home better results are more likely to be achieved for aspects such as balance, muscle strength and pace (12). This is based on the possibility of using specialized machinery and of being followed more intensely by an expert operator, thus enabling more lasting results to be achieved: the patient is thus put in a position to deal more safely with the various activities of daily life. For each patient, independence and the greatest possible functional autonomy in returning home are in fact the primary outcome of interest and their achievement must guide the choices by various specialists who make up the team when they take charge (13).

Objective of the study

The primary aim of the study was to evaluate the use of additional rehabilitation services by patients after discharge from our facility. The analyses were conducted considering the morbidity of the patients at the time of hospitalization, measured by the CIRS (Cumulative Illness Rating Scale) (14-18), the functional autonomy prior to the fracture event, the type of surgery and the time elapsed between the fracture and the surgery.

The following secondary outcomes were also considered:

- possible loss of autonomy at the time of the interview, compared to the one before the fracture;
- any new hospitalization, with reasons for doing so;
- consequences of any new falls;
- mortality of patients, in relation to the timing and type of surgery performed.

Methods

Study design

Observational, single-center, retrospective, cohort, epidemiological study with convenience sampling.

Patients

Patients undergoing surgery for a fractured femur between 1st May 2013 and 31st May 2016 for whom telephone contact was available were contacted to answer to a questionnaire drafted ad hoc to reconstruct their care needs over time. Patients were contacted by telephone between 4 months and 48 months after surgery. A maximum of three interview attempts were made for each patient. If the patient died at the time of the interview, the information provided by the caregiver was taken into account. The study finished at the end of June 2018.

Patients over 45 years of age, both male and female, who demonstrated the following inclusion and exclusion criteria, were contacted:

Inclusion criteria

- Surgically treated femur fracture.
- Intensive rehabilitation treatment performed at our hospital and provided according to current legislation, which provides for a physiotherapy treatment lasting a total of 380 minutes per patient per week (19).

Exclusion criteria

- Patients who have not joined the rehabilitation program due to non-compliance and/or worsening of clinical conditions that have led to an early transfer to acute care.

- Patients who did not give their consent to participate in the study at the time of telephone contact.

For all patients, the following informations were also considered at the time of hospitalization: the state of morbidity measured by the CIRS (Cumulative Illness Rating Scale), the functional autonomy prior to the fracture event, the type of surgery and the time elapsed between the fracture and the surgery. The CIRS scale has been arbitrarily evaluated and the scores obtained in the different items have been added and kept rough.

Statistical methods

Data have been reported in terms of absolute frequencies and percentages or median and interquartile range if appropriate. To evaluate the factors associated with the use of additional physiotherapy and loss of autonomy, univariate and multivariable logistical models were used. The results were reported in terms of odds ratio (OR) and 95% confidence interval (95% CI). For outcomes that assess the time of occurrence of an event, i.e. hospitalization for any cause and death, the Cox proportional hazard regression model was used, as well as the results reported in terms of hazard ratio (HR) and relative 95% confidence intervals. Interest times were calculated from the date of surgery to the date of the event for patients who had the event, otherwise to the date of last contact. The crude cumulative incidences (CCIs) for re-hospitalization for each cause and for re-hospitalizations only due to a new fall have been estimated using a method appropriate to the competitive risks.

Results

Of the 850 patients who underwent surgery/rehabilitation at our facility in the reporting period and considered for the purposes of this study, 445 had a telephone contact available and answered. Of these, 424 agreed to the interview. Further seven patients were excluded from the study because they could not be evaluated (n=2 with no date of surgery available, n=1 with less than 45 years and n=4 with a telephone interview less than 4 months after surgery). The remaining 417 patients are divided into males (N=58) and females (N=359), with a median age of 83; the rough median value of the CIRS scale was 17. Of the surgical procedures, 234 patients underwent surgical fixation, 149 placed an endoprosthesis and 34 a total replacement: 198 patients waited less than two days for surgery. Considering the autonomy before the femur fracture, 309 patients were able to leave the house on their own, 70 used to leave house only with someone, 38 moved mainly indoors and only 1 patient was bedridden or sitting in a wheelchair.

Of the patients included in the analysis, 333 (80%) had recourse to further physio-kinesiotherapy after discharge, mainly on the instructions of the physiatrist (73%) (Table 1). Of the 84 patients who did not use physiotherapy, 68 returned to their homes, 11 went to nursing homes, 4 to acute care hospitals and one to extensive rehabilitation.

The logistic regression analysis (Table 2) shows how the use of further physio-kinesiotherapy is asso-

Table 1. Characteristics of patients who underwent further physiotherapy. *Median (IQR)

Variable	N (%)
Duration of physiotherapy, weeks (n=333)	6 (4, 10)*
Number of sessions per week (n=332)	3 (2, 5)*
Duration of a session, minutes (n=333)	
≤30	77 (23)
31-60	242 (73)
60	14 (4)
Addressing physician (n=333)	
Physiatrist	244 (73)
General practitioner	16 (5)
Orthopedist	4 (1)
Patient's own choice	69 (21)
Return to home (n=333)	
No	214 (64)
Yes	119 (36)

Table 2. Results from univariable and multivariable logistic regression models of further physiotherapy.

	Univariable			Multivariable		
	OR	95% CI	P	OR	95% CI	P
Sex						
Female	1			1		
Male	0.68	0.36 to 1.30	0.24	0.66	0.34 to 1.27	0.21
Age (years)						
5-unit increase	0.98	0.85 to 1.12	0.75	0.93	0.81 to 1.08	0.35
Intervention			0.02			0.01
Surgical fixation	1			1		
Endoprosthesis	0.78	0.47 to 1.32	0.36	0.79	0.47 to 1.34	0.39
Total replacement	0.33	0.15 to 0.72	0.005	0.30	0.13 to 0.67	0.003
Interval between fracture and intervention						
≤2 days	1					
>2 days	1.13	0.70 to 1.83	0.61			
Autonomy before fracture			0.37			
Patient used to leave house on his own.	1					
Patient used to leave house only with someone.	0.94	0.49 to 1.81	0.86			
Patient moved mainly indoors, or was bedridden, or sitting in a wheelchair	0.58	0.27 to 1.23	0.16			
CIRS						
5-unit increase	1.19	1.02 to 1.38	0.03	1.20	1.03 to 1.39	0.02

ciated with the type of intervention, in particular the total replacement versus surgical fixation (OR=0.33, 95%CI=0.15 to 0.72, P=0.005) and with higher CIRS scores (OR=1.19, 95%CI=1.02 to 1.38, P=0.03). Similarly, the loss of autonomy is associated with the type of intervention and the increase in CIRS, as well as the increase in age (Table 3). For patients who have done further physiotherapy, in the multivariable model the loss of autonomy is also positively associated with the duration of the physiotherapy in weeks (OR=1.05, 95%CI 1.00 to 1.10 for each one week increase) and negatively associated with the duration of each session (31-60m vs <30m OR=0.50, 95%CI=0.28 to 0.89; >60m vs <30m OR=0.15, 95%CI 0.04 to 0.64), while the CIRS score has no longer a significant effect.

Of the patients interviewed 151 (CCI = 50%) have a new hospitalization: 74 (CCI = 22%) for a new fall and 77 for other reasons (25 for cardiovascular causes, 20 for infectious causes, 7 for neurological causes, 6 for tumors and 17 for other causes). The new re-hospitalization for each cause is positively associated with CIRS and negatively associated with the further use of physiotherapy (Table 4). Of the 74 patients re-hospitalized for new falls, 8 reported fractures to the previ-

Table 3. Results from univariable and multivariable logistic regression models for loss of autonomy

	Univariable			Multivariable		
	OR	95% CI	P	OR	95% CI	P
Sex						
Female	1			1		
Male	0.71	0.41 to 1.26	0.24	0.73	0.40 to 1.33	0.30
Age (years)						
5-unit increase	1.39	1.23 to 1.59	<0.0001	1.38	1.21 to 1.58	<0.0001
Intervention			0.009			0.05
Surgical fixation	1			1		
Endoprosthesis	0.87	0.58 to 1.31	0.51	0.78	0.51 to 1.20	0.27
Total replacement	0.25	0.11 to 0.61	0.002	0.33	0.13 to 0.83	0.02
Interval between fracture and intervention						
≤2 days	1					
>2 days	1.02	0.70 to 1.50	0.91			
CIRS						
5-unit increase	1.13	1.00 to 1.28	0.04	1.16	1.02 to 1.31	0.02
Further physiotherapy						
No	1					
Yes	1.56	0.95 to 2.54	0.08			

ously operated limb, 39 to the limb contralateral limb, 13 other fractures and 14 did not report any significant consequences. No significant associations emerged between the duration of post-discharge physiotherapy, in terms of number of sessions, and further falls or new fractures (data not shown).

From the Cox regression model (Table 5) the risk of mortality is positively associated with age, loss of autonomy and shorter time between fracture and surgery.

Discussion

The results of the study were in line with the literature, confirming the important clinical-functional implications that the fracture of the femur, and the consequent loss of autonomy associated with it, has on the patient especially elderly (20-22).

The finding of a low mortality in relation to an intervention timing of more than 48 hours, is, however, in clear contrast with the literature, we probably think we can attribute this result in part to a 'selection bias' induced by the difficulties in contacting patients or their caregivers and the possible inaccuracy with which data were collected regarding the days elapsed between fracture and surgery.

Patient mortality was found to be particularly related with advanced age and reduced recovery of functional autonomy. This result could be attributable to a general physical deconditioning of the subject, with a relative reduction in cardiopulmonary performance, an

Table 4. Results from univariable and multivariable proportional hazard regression models for re-hospitalization

	Univariable			Multivariable		
	HR	95% CI	P	HR	95% CI	P
Sex						
Female	1			1		
Male	1.14	0.73 to 1.76	0.57	1.13	0.72 to 1.75	0.60
Age (years)						
5-unit increase	1.04	0.94 to 1.14	0.46	1.04	0.95 to 1.15	0.36
Intervention			0.98			
Surgical fixation	1					
Endoprosthesis	0.97	0.69 to 1.36	0.85			
Total replacement	0.97	0.53 to 1.77	0.91			
Interval between fracture and intervention						
≤2 days	1					
>2 days	0.78	0.57 to 1.08	0.13			
Further physiotherapy						
No	1			1		
Yes	0.68	0.47 to 0.98	0.04	0.64	0.44 to 0.94	0.02
CIRS						
5-unit increase	1.11	1.01 to 1.23	0.04	1.13	1.02 to 1.25	0.02

increase in secondary complications related to hypomobility and bedding. The results also suggest a possible protective effect (although not significant) for the positioning of endoprosthesis with respect to the surgical fixation, while the small number does not allow conclusions to be drawn on the total prosthesis intervention.

In addition, again with regard to the type of surgery, it was found that patients undergoing arthroplasty (total replacement) have found a lower need for physiotherapy than those undergoing surgery for osteosynthesis (surgical fixation) and endoprosthesis (Table 2).

The recovery of the autonomy prior to the operation is more conditioned by a lower age, a lower CIRS score and the type of surgery performed (Table 5). In fact, it was noted that the reduction in autonomy was statistically associated with surgical fixation, which would justify in the latter patients the greater need for physiotherapy sessions (Table 3).

It is also interesting to note that, of the 151 patients who needed access to an emergency room after discharge from our facility, 77 presented a new fall as an index event. Of these, 60 patients had a new fracture, of which more than half (39 patients) had a contralateral limb fracture. The duration of the physiotherapy carried out after discharge from our facility, in terms of number of weeks, was positively related with the loss of autonomy; on the contrary, having carried out longer physiotherapy sessions (for example >30 minutes) was negatively correlated with it. These data can have a twofold key: first, the need for further physiotherapy emerges for those patients with more compromised

Table 5. Results from univariable and multivariable proportional hazard regression models for overall survival

	Univariable			Multivariable		
	HR	95% CI	P	HR	95% CI	P
Sex						
Female	1			1		
Male	1.41	0.65 to 3.05	0.38	1.90	0.87 to 4.12	0.11
Age (years)						
5-unit increase	1.41	1.15 to 1.74	0.001	1.28	1.02 to 1.61	0.04
Intervention			0.07			0.14
Surgical fixation	1			1		
Endoprosthesis	0.52	0.26 to 1.03	0.06	0.51	0.26 to 1.03	0.06
Total replacement	0.21	0.03 to 1.53	0.12	0.45	0.06 to 3.38	0.44
Interval between fracture and intervention						
≤2 days	1			1		
>2 days	0.46	0.25 to 0.86	0.02	0.46	0.24 to 0.86	0.02
Autonomy before fracture			<0.0001			
Patient used to leave house on his own.	1		<0.0001			
Patient used to leave house only with someone.	5.66	2.82 to 11.34	<0.0001			
Patient moved mainly indoors, or was bedridden, or sitting in a wheelchair	7.22	3.31 to 15.73				
Autonomy after fracture			<0.0001			
Patient used to leave house on his own.	1					
Patient used to leave house only with someone.	2.05	0.46 to 9.17	0.35			
Patient moved mainly indoors.	13.85	4.04 to 47.55	<0.0001			
Patient was bedridden, or sitting in a wheelchair.	33.85	10.05 to 114.06	<0.0001			
Loss of autonomy						
No	1			1		
Yes	7.55	3.19 to 17.89	<0.0001	6.48	2.69 to 15.57	<0.0001
CIRS						
5-unit increase	1.02	0.85 to 1.24	0.80			

starting clinical conditions (higher CIRS scores, Table 2), therefore also likely with more limited prospects of recovery; secondly, the importance of the "posology" of physical exercise is confirmed, according to which a longer rehabilitation period is not necessarily associated with greater recovery. The quality (intensity - in the sense of longer sessions) of the rehabilitation intervention is therefore more effective in improving the outcome than the quantity of the same.

However, it emerges that the rate of re-hospitalization was higher in two categories of patients: first, in those with higher values of pre-morbid CIRS, confirming that the fracture of the femur probably overlapped a pre-existing clinical picture of fragility; secondly, in those patients who, following surgery, did not undergo further sessions of physiotherapy. This fact, from our point of view, highlights how rehabilitation can positively affect not only the strictly neuromotor aspects, but also cardiovascular, respiratory, etc. aspects, reducing the risk of secondary problems to hypomobility and/or bedding (Table 4).

Study limitations

Our study has some limitations. Firstly, respondents may not have been sufficiently precise in recalling certain aspects of their rehabilitation. Above all, it has not been possible to carry out a more in-depth analysis with regard to the different discharge settings.

Moreover, the selection of the sample induced by the availability of a contact may have influenced the homogeneity of the sample with consequences on the interpretation of the results. In this sense, it would be interesting to carry out a new study considering also the long-term outcomes.

Conclusions

The results obtained from our study confirm that the femur fracture is a dramatic event for each patient in terms of loss of autonomy with greater impact on the most fragile individuals, regardless of the precociousness of intervention, and predisposes to adverse outcomes such as re-hospitalization.

Further physiotherapy after discharge from the specialist facility has generally been effective in reducing the likelihood of new hospitalizations. However, the non-evidence of association between falls or new fractures and the intensity of rehabilitation sessions can have important results in daily clinical practice: rehabilitation, in fact, as any therapy, must be prescribed with an appropriate and personalized schedule, depending on the clinical condition of the patient and the rehabilitation goals that you want to achieve (23, 24). Since high 'quantities' of rehabilitative treatment are not necessarily associated with better functional outcomes, the real discriminating factor in the management of fragile patients must therefore be the quality of the rehabilitative intervention prescribed.

Clinical messages

- rehabilitation is essential after hip fracture in the elderly
- rehabilitation is a therapy that must be carefully prescribed by the specialist doctor
- rehabilitation must be qualitative rather than quantitative

Ethics approval and informed consent: Ethics approval from Ethics Committee of Milan Area B dated 10.05.2016, reference number 268_2016. Informed consent was acquired for all patients.

Author contributions: LP and AVC originated the idea for the study and contributed to its design, DC and SE are responsible for the data collection. DC, SE and SC drafted the manuscript, MF and IA conducted the statistical analysis. All authors read, edited and approved the final manuscript.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

References

1. Johansen I, Lindbak M, Stanghelle J K, Brekke M. Independence, institutionalization, death and treatment costs 18 months after rehabilitation of older people in two different primary health care settings. BMC Health Serv Res 2012;12:400.
2. Lizaur-Utrilla, Serna-Berna R, Lopez-Prats FA, Gil-Guillen V. Early rehospitalization after hip fracture in elderly pa-

tients: risk factors and prognosis. Arch Orthop Trauma Surg 2015;135:1663-1667.
3. Gillsjö C, Schwartz-Barcott D, von Post I. Home: the place the older adult can not imagine living without. BMC Geriatr 2011;11:10.
4. Elli S, Contro D, Castaldi S, Fornili M, Ardoino I, Caserta AV, et al. Caregivers' misperception of the severity of hip fractures. Patient Preference Adherence 2018;12:1889-1895.
5. Moja L, Piatti A, Pecoraro V, et al. Timing matters in hip fracture surgery: patients operated within 48 hours have better outcomes. A meta-analysis and meta-regression of over 190,000 patients. PlosOne 2012;7:e46175.
6. Khan SK, Kalra S, Khanna A, Thiruvengada MM, Parker MJ. Timing of surgery for hip fractures: a systematic review of 52 published studies involving 291,413 patients. Injury 2009 40:692-697.
7. Sheehan KJ, Sobolev B, Guy P. Mortality by timing of hip fracture surgery: factors and relationships at play. J Bone Joint Surg Am 2017;99:e106.
8. Simunovic N, Devereaux PJ, Sprague S, et al. Effect of early surgery after hip fracture on mortality and complications: systematic review and meta-analysis. CMAJ 2010;182:1609-1616.8
9. Sheehan KJ, Sobolev B, Villan Villan YF, Guy P. Patient and system factors of time to surgery after hip fracture: a scoping review. BMJ Open 2017;7:e016939.
10. Leland NE, Gozalo P, Christian TJ, et al. An examination of the first 30 days after patients are discharged to the community from hip fracture post-acute care. Med Care 2015;53:879-887.
11. Boockvar KS, Litke MSA, Penrod JD, et al. Patient relocation in the 6 months after hip fracture: risk factors for fragmented care. J Am Geriatr Soc 2004;52:1826-18311
12. Auais MA, Eilayyan O, Mayo NE. Extended exercise rehabilitation after hip fracture improbe patients' physical function: a systematic review and meta-analysis. Phys Ther 2012;92:1437-1451
13. Mallinson T, Deutsch A, Bateman J, et al. Comparison of discharge functional status after rehabilitation in skilled nursing, home health, and medical rehabilitation settings for patients after hip fracture repair. Arch Phys Med Rehabil 2014;95:209-217.
14. Linn BS, Linn MW, Gurel L. Cumulative illness rating scale. J Am Geriatr Soc 1968;16:622-626.
15. Kabbord AD, van Eijk M, Fiocco M, van Balen R, Achterberg WP. Assessment of comorbidity burden and its association with functional rehabilitation outcome after stroke or hip fracture: a systematic review and meta-Analysis. J Am Med Dir Assoc 2016 Nov 1; 17(11):1066.e13-1066.e21
16. Huntley AL, Johnson R, Purdy S, Valderas Jm, Salisbury C. Measures of multimorbidity and morbidity burden for use in primary care and community settings: a systematic review and guide. Ann Fam Med. 2012 Mar-Apr; 10(2):134-41.
17. Harboun M, Ankri J. Comorbidity indexes: review of the literature and application to studies of elderly population. Rev Epidemiol Sante Publique. 2001 Jun;49(3):287-98.
18. de Groot V, Beckerman H, Lankhorst GJ, Bouter LM. How to measure comorbidity. a critical review of available methods. J Clin Epidemiol. 2003 Mar;56(3):221-9.
19. Regione Lombardia - Bollettino Ufficiale. D.g.r. 20 giugno 2014 – n. X/1980 Determinazione in ordine ai requisiti di accreditamento per le attività riabilitative. Regione Lombardia, Italy.
20. Alexiou KI, Roushias A, Varitimidis SE, Malizos KN., Quality of life and psycological consequencies in elderly patients after a hip fracture: a review. Clin Interv Aging 2018;13:143-150.
21. Peeters CM, Visser E, Van de Ree CL, et al. Quality of life after hip fracture in the elderly: a systematic literature review. Injury 2016;47:1369-1382.
22. Van Son MA, De Vries J, Roukema JA, Den Oudsen BL. Health status, health-related quality of life, and quality of life following ankle fractures: a systematic review. Injury 2013;44:1391-1402.
23. Castaldi S, Bevilacqua L, Arcari G, Cantù AP, Visconti U, Auxilia F. How appropriate is the use of rehabilitation facilities? Assessment by an evaluation tool based on the AEP protocol. J Prev Med Hyg 2010;51(3):116-120.
24. Rodà F, Bevilacqua L, Merlo A, Prestini L, Brianti R, Lombardi F, et al. Evidence-Based Medicine and Clinical Practice: the first Italian attempt to define the appropriateness of rehabilitation admission criteria through the application of the Delphi method. Ann Ig 2019;31(2):117-129.

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