Annals of Physical and Rehabilitation Medicine 62 (2019) 58–59

Available online at ScienceDirect www.sciencedirect.com

Elsevier Masson France EM|consulte www.em-consulte.com

Letter to the editor

Early rehabilitation after stroke: Strong recommendations but no achievement in the French Acute Healthcare Facilities

Dear Editor,

In France, as in most other developed countries, stroke remains the leading cause of acquired adult disability and the third leading cause of death [1,2]. The rehabilitation treatment procedure set-up during the first days following a stroke is one of the determining criteria of the functional prognosis [3]. The recent report by the American Stroke Association, as in the majority of best practice guidelines, recommends prompt management and a specialized assessment for all patients with a persistent deficiency (Level I recommendation) [4]. In 2017, the follow-up of these recommendations in France at the acute phase of a stroke was evaluated by the French National Health Authority (Haute Autorité de Santé – HAS). The aim of this study was to assess the follow-up of these recommendations by the hospital departments caring for patients during the acute phase of a stroke.

The selection of the institutions that were evaluated was performed using the PMSI-MCO database (the PMSI is used for coding the records according to the main diagnosis for which the patient is treated at the institution). All French health facilities treating at least 10 patients with an acute ischemic or hemorrhagic stroke were evaluated. Patients admitted in 2016 with the mention of a stroke as their main diagnosis and recorded on their anonymous release summary were selected for this assessment. The CVA was defined by using the following codes of the International Classification of Diseases, the 10th revision (ICD 10): codes I61 (intracerebral hemorrhage), I63 (ischemic stroke) and I64 (cerebrovascular accidents, unspecified). Codes I63.6 (cerebral infarction due to cerebral venous thrombosis) and G45 (transient ischemic attack) were not included in the selection of retrieved files. The following were excluded: patients who died during their stay, stays of less than 24 hours, stays of patients under 18, stays divided between establishments (except for Tele-Stroke) and stays with coding inconsistencies. After this first screening, all the French health facilities included were evaluated up to a maximum of 80 stays (for establishments with more than 80 stays a randomly selected sample was made).

In the selected files, the date of the first assessment by rehabilitation professional as well as the professionals involved during the stay physiotherapist, speech therapist, occupational therapist, Physical and Rehabilitation Medicine (PRM) physician were included. In the absence of an assessment, it was possible to confirm that the patient's condition did not require any specialized evaluation in view of the clinical examinations carried out by the physicians during the stay (the deficit was then considered as totally regressive by the clinicians) or that no care management had been performed.

The quality of the evaluation criteria obtained was independently monitored by the Regional Health Agencies (Agence régionale de Santé – ARS) in a sample of the various institutions.

Taking into account the disparities in the stroke management activity in France, each institution's individual contribution to the collection was not identical. It was therefore necessary to adjust the data collected during the campaign by assigning a weight to each file. This weight was based on the ratio between the number of eligible files and the number of files assessed. It was therefore proportional to the number of strokes coded by the patient care facility during the year of study.

The analyses were performed using the SAS® Enterprise Guide software, version 7.1.

In this evaluation we included 550 health care facilities (HCF), 139 of which had a stroke unit (SU). The sample analyzed contained a total 26,008 files. The average length of stay was 11.5 days.

In 19% of patients, we found that they had not received any specialized care because the deficit was recorded as being totally regressive. At least one assessment by a rehabilitation professional was found for 61% of patients and 20% of patients had no specialized assessment during their stay (despite the persistence of a deficit). The majority of patients were assessed by a physiotherapist and in 7% by a PRM physician (Fig. 1).

For patients with a persistent deficit, in HCF with a SU a rehabilitation professional performed an assessment in 84% of cases compared to 71% for HCF with no SU but with a Tele-stroke installation and 68% for those with neither a SU nor a Tele-stroke.

Regarding assessment time delays, the first contact with a rehabilitation professional was observed in 16% of cases on the first day and in 35% of cases during the first 3 days (Fig. 2).

This study made it possible to establish, on the national level, the poor follow-up of the recommendations on rehabilitation management during the acute phase of a stroke. In fact, only 61% of the patients had any contact with a rehabilitation professional and most often at a late stage.

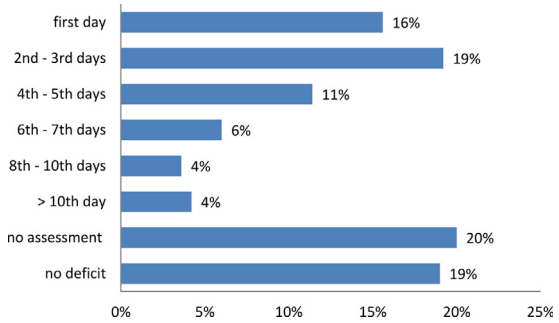

Fig. 1. Delay before an initial contact with a rehabilitation professional. The data were adjusted to take account the weight of each case file depending on the facility's share of national stroke management.

https://doi.org/10.1016/j.rehab.2018.07.001

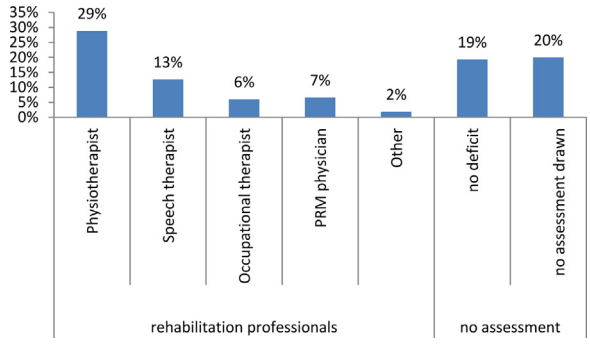

Fig. 2. Rehabilitation professionals involved during the stay. The data were adjusted to take account the weight of each case file depending on the facility's share of national stroke management.

The HCF organization concerning the rehabilitation at the stroke's acute phase has very rarely been studied. Only a major German registry study of 140 health facilities in the Baden–Württemberg region reported that 90% of stroke patients were treated in the acute phase [5]. For 90% of the patients it was physiotherapy, 63% occupational therapy and 70% speech therapy (compared to 29%, 6% and 13% respectively in the present study). As regards the delay in the time of care, it was less than 48 hours for 90% of patients. These results, which were much higher than ours, are in agreement with most recommendations of good practice [6].

For example, the value of early motor stimulation has been proven since the creation of the first SUs in the 1990s [7]. Most frequently performed by physiotherapists, it is based on the prevention of decubitus complications (respiratory, circulatory, muscular etc.) and on a positive stimulation of brain plasticity [6]. A debate continues to persist regarding early stage management as well as the intensity of stimulation to be proposed because it appears that a too intensive motor rehabilitation during the first 24 hours (Very Early Rehabilitation – VER) can be deleterious [8]. In fact, physical activity can lead to blood pressure changes that have a negative impact on the ischemic penumbra of the first hours following a stroke and increases the risk of intracerebral bleeding (particularly after thrombolytic therapy) [9].

As regards other rehabilitation care services (speech therapy, occupational therapy, etc.), recommendations of good practice are less consensual. In a recent study, early intervention in speech therapy (less than 48 hrs.) appeared to have a positive impact at 15 days and at 6 months post stroke [10]. Moreover, if it is estimated that in the acute phase 40% of patients have swallowing disorders and 30% aphasia [11], specialized care management should be organized for the majority of patients (although this only concerned 13% of patients in our study). As regards the management of occupational therapy, no study, published has answered the question of the optimal time of care but as more than half of the patients will eventually have a moderate to severe disability [12], a functional assessment by an occupational therapist for patients in the acute phase should be more routinely proposed. It was only found in 6% of the records in our study.

In view of these factors, it therefore seems important to improve rehabilitation treatment during the first days following stroke. Late treatment times and the low percentage of patients assessed do not conform to good practice recommendations. Moreover, 19% of the patients did not undergo any care treatment because the medical examination did not find a deficit requiring a specialized evaluation. This rate was higher than that reported in the literature data, which observed that from 6 to 16% of patients had no deficit (on the Rankin scale), and probably overvalued. A major restructuring of the neurology services, particularly SUs, should be carried out. This would permit a more systematic functional evaluation of the patients, the screening of cognitive or thymic disorders which are often underestimated at the acute phase and a better orientation regarding structuring acute care management. The obstacles to this restructuring are numerous. We can mention the difficulties in recruitment of rehabilitation professionals in the SUs and the lack of collaboration between the PRM and neurology HCF.

This study has some limitations that need to be mentioned. The medical records of patients were analyzed retrospectively. The traceability of the information was therefore not systematic and could have affected the results. Experiments, a test campaign and four evaluation campaigns have been carried out since 2009 to optimize this traceability. The clinicians were therefore made aware of the importance of noting the completion of a rehabilitation treatment program in the files.

Disclosure of interest

The authors declare that they have no competing interest.

References

[1] Donnan GA, Fisher M, Macleod M, Davis SM. Stroke. Lancet 2008;371:1612–23.
[2] Lecoffre C, de Peretti C, Gabet A, Grimaud O, Woimant F, Giroud M, et al. L'accident vasculaire cérébral en France : patients hospitalisés pour AVC en 2014 et évolutions 2008–2014. Bull Epidemiol Hebd 2017;5:84–94.
[3] Murphy TH, Corbett D. Plasticity during stroke recovery: from synapse to behaviour. Nat Rev Neurosci 2009;10:861–72.
[4] Furie KL, Jayaraman MV. Guidelines for the early management of patients with acute ischemic stroke. Stroke 2018;49:509–10.
[5] Reuter B, Gumbinger C, Sauer T, Wiethölter H, Bruder I, Diehm C, et al. Access, timing and frequency of very early stroke rehabilitation–insights from the Baden–Wuerttemberg stroke registry. BMC Neurol 2016;16:222.
[6] Bernhardt J, English C, Johnson L, Cumming TB. Early mobilization after stroke: early adoption but limited evidence. Stroke 2015;46:1141–6.
[7] Indredavik B, Bakke F, Solberg R, Rokseth R, Haaheim LL, Holme I. Benefit of a stroke unit: a randomized controlled trial. Stroke J Cereb Circ 1991;22:1026–31.
[8] Trial Collaboration AVERT group. Efficacy and safety of very early mobilisation within 24 h of stroke onset (AVERT): a randomised controlled trial. Lancet 2015;386:46–55.
[9] Olavarría VV, Arima H, Anderson CS, Brunser AM, Muñoz-Venturelli P, Heritier S, et al. Head position and cerebral blood flow velocity in acute ischemic stroke: a systematic review and meta-analysis. Cerebrovasc Dis 2014;37:401–8.
[10] Laska AC, Kahan T, Hellblom A, Murray V, von Arbin M. A randomized controlled trial on very early speech and language therapy in acute stroke patients with aphasia. Cerebrovasc Dis 2011;1:66–74.
[11] Sturm JW, Donnan GA, Dewey HM, Macdonell RAL, Gilligan AK, Thrift AG. Determinants of handicap after stroke: the North East Melbourne Stroke Incidence Study (NEMESIS). Stroke J Cereb Circ 2004;35:715–20.
[12] Slot KB, Berge E, Dorman P, Lewis S, Dennis M, Sandercock P, et al. Impact of functional status at six months on long-term survival in patients with ischaemic stroke: prospective cohort studies. BMJ 2008;336:376–9.

Alexis Schnitzler[a,b,*], Marie Erbault[a], Agnès Solomiac[a], Damien Sainte Croix[a], Arnaud Fouchard[a], Laetitia May-Michelangeli[a], Catherine Grenier[a]
[a]*Haute Autorité de Santé, 93210 La Plaine Saint-Denis, France*
[b]*EA4047, université St-Quentin-en-Yvelines, équipe de recherche HandiResp, 78180 St-Quentin-en-Yvelines, France*

*Corresponding author. Hôpital R. Poincaré, 104, boulevard R. Poincaré, 92280 Garches, France
E-mail address: alexis.schnitzler@rpc.aphp.fr (A. Schnitzler).

Received 7 December 2017
Accepted 11 July 2018