

Results of Chronic Neck Pain Rehabilitation at Cotonou

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Abstract

Background: Neck pain is a real public health problem. Its treatment uses different techniques, such as functional rehabilitation, whose results are not widely popularized, from developing countries in Black Africa. **Objective:** To assess the result of rehabilitation of chronic common neck pain (CCNP) at the CNHU-HKM in Cotonou. **Methods:** Cross-sectional, retrospective, descriptive and analytical study. It was carried out from May to September 2020, based on the files of former patients followed in functional rehabilitation department at CNHU-HKM in Cotonou, from 2015 to 2019, for CCNP. The result of rehabilitation was assessed based on the progress, between the start and the end of the rehabilitation sessions, of pain intensity, mobility of the cervical spine, muscle strength and functional capacity of the patient. Anova and chi-square tests were used for the analysis of factors associated with the result of rehabilitation. **Results:** The sample consisted to 73 patients. They were predominantly female (58.90%), with a mean age of 53.60 ± 14.08 years. The neck pain, at least of moderate intensity (97.26%), was present since 12.54 ± 8.54 months, on average. Patients have done 10 to 20 functional rehabilitation sessions, the result of which was satisfactory in 67.12%. This result was mainly associated with patient's age, sports practice and the seniority of pain progression. **Discussion-Conclusion:** Rehabilitation results in the management of CCNP are interesting. They prove the need to sensitize patients and prescribers on the importance of early treatment of CCNP.

Keywords

Chronic Neck Pain, Functional Rehabilitation, Results, Cotonou

1. Introduction

As low back pain, neck pain is a real public health problem throughout the world [1]-[6]. Indeed, it is a very common condition whose physical and psycho-social

consequences are not negligible. Also, its direct and indirect costs are significant, particularly when the condition enters to chronic phase. This treatment uses various strategies including functional rehabilitation. The latter is available in the main hospital of Benin, since the beginning of that hospital. The team in this care sector has gradually grown and has continued to benefit from refresher courses since the 2000s. Certainly, from the review of the literature, several works have reported the benefits of rehabilitation. But the experience of developing countries has been poorly documented. What are the results of this rehabilitative care in our context, at CNHU-HKM in Cotonou?

2. Method

We conducted a retrospective, descriptive and analytical cross-sectional study, from May 1st to September 30th, 2020, on patients fulfilling those conditions:

- To have been followed in functional rehabilitation department at CNHU-HKM in Cotonou, between 2015 and 2019 (5 years) for common chronic neck pain,
- To have had a medical file, found during the data collection period,
- To have benefited of functional rehabilitation sessions, with an assessment at the beginning and end of sessions.

So, patients seen after medical examination and who have not done rehabilitation sessions or decide to do them in an other center or who begin but have not finished rehabilitation sessions, were excluded. With those criteria, seventy-three (73) patients were enrolled in the sample of the study.

The evaluation of the rehabilitation result took into account the evolution of four parameters between the start and the end of the rehabilitation. These are the intensity of pain, the cervical spine joint mobility, the neck muscles strength and the patient functional status. Regarding the intensity of neck pain, its evolution was said to be considerable or negligible depending on whether the ratio between the intensity scores at the end and the beginning of the sessions was less than or greater than 50%. For the evolution of the mobility of cervical spine, muscle strength and functional state of the patient, it was said to unchanged, negligible or considerable depending on whether the deficiency of the variable remained unchanged, reduced compared to the initial assessment or has completely disappeared. The overall result of the rehabilitation was said to be satisfactory, little satisfactory or unsatisfactory depending on whether the patient had a considerable change in at least three, two, or less than two of the four parameters studied. Data collected was analyzed with the software Epi Info. Factors associated with rehabilitation result were investigated using Anova and Pearson chi-square tests. The significance level chosen was 0.05.

3. Results

3.1. Characteristics of the Sample

3.1.1. Socio-Demographic Characteristics

Patients ranged from 19 to 88 years old, with a mean age of 53.60 ± 14.08 years. These were 43 women (58.90%) and 30 men (41.10%). **Table 1** presents the oth-

er socio-demographic characteristics of patients of our study.

3.1.2. Clinical Features of Neck Pain

Patients were feeling pain, since 3 to 38 months, before they were admitted to rehabilitation, with a mean of 12.54 ± 8.54 months. The median time was 9 months. Neck pain was at least moderate intensity with 97.26% of patients. Functional impairment, cervical joint limitations and muscles weakness were the most impaired deficiencies associated to patients' neck pain. **Figure 1** and **Figure 2** present distribution of patients according to the severity of their neck pain and other impairments associated with neck pain upon admission to rehabilitation.

Table 1. Distribution of patients of the sample, according to their socio-demographic characteristics.

		Number	Percentage (%)
Corpulence	Thinness	06	8.22
	Normal	38	52.05
	Overweight	19	26.03
	Obesity	10	13.70
Marital status	Married	46	63.01
	Widowers	10	13.70
	Single	10	13.70
	Divorced	07	9.59
Professional domain	Administration	18	24.66
	Trade	17	23.29
	Health	12	16.44
	Bank and finances	11	15.07
	Teaching	08	10.95
	Others	07	9.59
Sport practice	Yes	40	54.79
	No	33	45.21

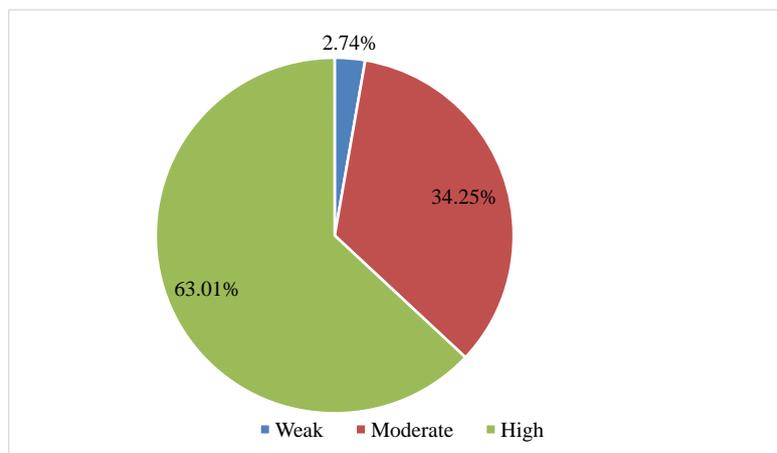


Figure 1. Distribution of patients according to their neck pain intensity.

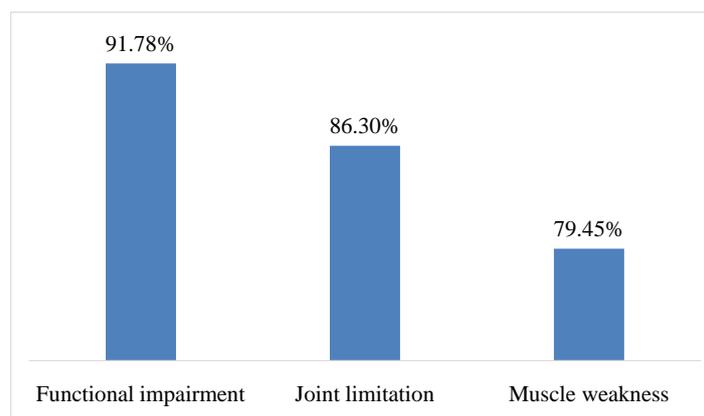


Figure 2. Proportions of impairments associated with neck pain in study patients.

3.1.3. Rehabilitative Therapeutic Characteristics of Neck Pain

Patients benefited from 10 to 20 functional rehabilitation sessions with an average of 15.82 ± 4.56 sessions.

3.2. Rehabilitation Result

The overall result of functional rehabilitation was satisfactory for 49 patients (67.12%) and unsatisfactory for 24 patients (32.88%). Parameters who were most improved were pain intensity, cervical joint mobility and patients functional status. **Figure 3** shows the distribution of changes in the various parameters for assessing the overall result of functional rehabilitation.

3.3. Factors Associated with the Overall Result of Functional Rehabilitation

They are presented on **Table 2** and **Table 3**. It was patient age, his marital status, the practice of sport and the duration that pain involves. So, younger was the patient, single or divorced he was, sport practice habit he has and shorter was the pain duration, patients were more satisfied.

4. Discussion

4.1. Socio-Demographic Characteristics

Patients of our sample were predominantly female, mostly married, in their 50s. Several authors have also reported results comparable to ours [7] [8] [9] [10] [11]. The very gradual onset of the disease could justify the patients' age in our sample. Also, women are more subject to various mechanical stresses on their spinal column during various activities done in profession and for daily life, hence their high proportion.

4.2. Clinical Features

Pain intensity was at least moderate in almost all of the patients of the study. This could be related to the chronicity of the condition and/or difficulties in ac-

cessing health care in our context, forcing patients not to consider health problem early. This is noticeable in the period of pain progression which has been up to 38 months (over 3 years), with an average of one year. Park et al, meanwhile, reported longer delays in Korea, with an average of 30 months, two and a half years [7]. Pain was associated with other impairments such as functional limitation, muscle weakness and reduced joint mobility. Given the long period of development of neck pain, it is not surprising that such deficiencies set in secondarily.

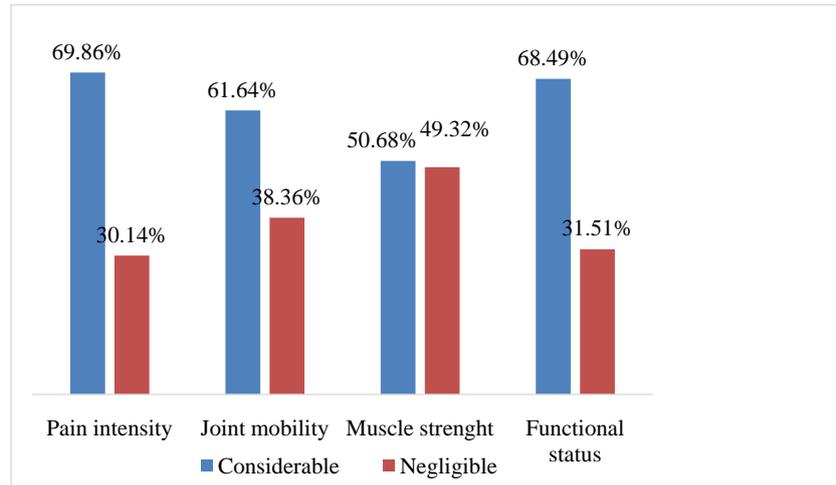


Figure 3. Distribution of changes in parameters for assessing the overall result of functional rehabilitation.

Table 2. Study of the link between the socio-demographic characteristics of patients and the overall result of functional rehabilitation of their neck pain.

		Overall result of rehabilitation		Statistical tests
		Satisfactory	Unsatisfactory	
Age	Mean ± SD	46.08 ± 9.59	68.95 ± 7.90	F = 102.27;
Gender	Masculin	19	11	X2 = 0.33; p = 0.56
	Féminin	30	13	
Marital status	Single	09	01	X2 = 13.65; p = 0.00
	Married	32	14	
	Divorced	06	01	
	Widowers	02	08	
Activity domain	Public	32	13	X2 = 0.58; p = 0.61
	Private	17	11	
Corpulence	Thinness	05	01	X2 = 0.98; p = 0.80
	Normal	25	13	
	Overweight	13	06	
	Obesity	06	04	
Sport practice	Yes	31	09	X2 = 4.31; p = 0.03
	No	18	15	

Table 3. Study of the link between clinical and rehabilitation characteristics of patients and the overall result of functional rehabilitation of their neck pain.

	Overall result of rehabilitation		Statistical tests
	Satisfactory	Unsatisfactory	
Time to pain progression			
Mean \pm SD	9.97 \pm 7.2	17.79 \pm 9.0	F = 15.42; p = 0.00
Joint limitation			
Yes	41	22	X ² = 0.87; p = 0.35
No	08	02	
Muscle weakness			
Yes	38	19	X ² = 0.02; p = 0.87
No	11	05	
Functional status impaired			
Yes	45	22	X ² = 0.00; p = 0.98
No	04	02	
Number of rehabilitation session			
20 sessions	23	14	X ² = 0.83; p = 0.65
15 sessions	08	03	
10 sessions	18	07	

4.3. Outcome of Functional Rehabilitation and Associated Factors

The result of functional rehabilitation was satisfactory in two out of three patients in our series. This indicates the interest of functional rehabilitation, in the management of neck pain. For that, various strategies are used. In fact, apart from the classic techniques of physiotherapy (thermotherapy, electrotherapy), are usually used for the management of neck pain exercises of cervico-scapulo-thoracic strengthening, scapulo-thoracic endurance, cervico-scapulo-thoracic stabilization, cervico-scapulo-thoracic stabilization, eye-neck coordination, proprioception and combined strengthening and stretching exercises in the cervico-scapulothoracic region. Authors have reported that patients have beneficial effects of these techniques, in short, medium and long term [12] [13]. Age was very significantly associated with this outcome of functional rehabilitation. This could be related to the severity of the lesions over time, but certainly also because of the greater ability of young patients to participate in rehabilitation sessions. These two hypotheses seem to be confirmed by data in **Table 3**. In fact, the delay in the progression of pain ($p = 0.00$) and the practice of physical activity ($p = 0.03$) were also associated with the result of rehabilitation. But on the contrary, as the number of rehabilitation sessions, the other clinical deficiencies noted in chronic neck pain patients do not seem to determine the outcome of the rehabilitation treatment.

About limitation of the study, we can say that a comparative study must be

better, to show specially what about the contribution of functional rehabilitation in these patients. But that ask about the usual ethical problem for these types of studies. Also, a more consistent sample size would be more attractive. The problems with archiving files in our context explained the smaller size used.

5. Conclusion

The impairments presented in cases of common chronic neck pain, in our context, are varied. They generally experience a satisfactory development, with functional rehabilitation sessions. This result is particularly marked in young people and patients with whom treatment was started earlier. These findings are parameters of conviction to emphasize the sensitization of patients and prescribers of rehabilitation care to send patients with neck pain as soon as possible to rehabilitation sessions.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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