Scholars Journal of Applied Medical Sciences
Abbreviated Key Title: Sch J App Med Sci
ISSN 2347-954X (Print) | ISSN 2320-6691 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Physiotherapy

Contribution of Physical Therapy to the Management of the Lumbar Osteoarthritis: About 62 Cases at the Teaching Hospital of Point G

DIARRA Tamba[1*], TOURE Sidi[2], DEMBELE Ezéchiel[1], TRAORE Moussa[1], DEMBELE Sammuel[1], KAMATE Matiéré[1], CISSE Idrissa Ahmadou[2]

[1]Physiotherapy department at the Teaching Hospital of Point G in Bamako, Mali
[2]Rheumatology department at the Teaching Hospital of Point G in Bamako, Mali

DOI: 10.36347/sjams.2024.v12i03.018 | **Received:** 16.02.2024 | **Accepted:** 20.03.2024 | **Published:** 29.03.2024

***Corresponding author:** Diarra Tamba
Physiotherapy department at the Teaching Hospital of Point G in Bamako, Mali

Abstract **Original Research Article**

***Introduction*:** osteoarthritis is a degenerative process of the lumber spine [2]. ***Objective*:** the overall objective of this study was to determine the frequency of lumber osteoarthrosis and the contribution of physical therapy to its management. ***Patients and Method*:** we conducted a prospective longitudinal study over two [2]. years, from October first, 2021, to September 30th, 2023, in patients seen in the physiotherapy department of the Teaching Hospital of Point G for lumbar spine osteoarthrosis. ***Results*:** sixty-two (62) patients accepted to participate in this study with female predominating up to 66.1% (n=41). The age range was from 60 to 69-year-old in 24%. Paresis was found in 24.2% as neurological sign. Forty nine percent of the patients was found with obesity. All the participants underwent a CT scan to set the lesional diagnosis. Sickle cell disease was found in 4.8% (n=3). Physical therapy sessions sere from 10 to 45. Ninety-five point 2 percents of the patients had a distinctively clinical amelioration and 61.3% with no pain anymore according to the Visual Analog Scale (VAS). There was quite a statistical significance between the VAS and symptoms amelioration. This attest that physical therapy has a significant contribution in the caring process of lumbar osteoarthritis. ***Conclusion*:** physiotherapy supplement the management of lumbar osteoarthritis. Is must therefore be associated with the medical treatment of this condition.

Keywords*:* Lumbar osteoarthritis, frequency, intake, physiotherapy, rheumatology, point g, Mali.

INTRODUCTION

Osteoarthritis (OA) is an alteration of the cartilage and fibrocartilage associated with apparently reactive proliferative bone damage in the vicinity without inflammatory lesion [1]. Lumbar and/or lumbosacral osteoarthritis degenerative process of the spine with two preferential location which are anterior (disc arthrosis or arthrosis of the vertebral bodies) and posterior (arthrosis of the posterior bow) [2].

Lumbar osteoarthrosis is not only a disease of ubiquitous distribution, but also the most frequent of the spine osteoarthritis. One of its characteristics is a potential evolution of this condition considered benign toward psychomotor regression, postural involution and loss of autonomy [2]. Osteoarthritis of the lumbar spine is a main cause of localized lower back pain.

Its high prevalence in the general population [7.5% - 30%] makes it a major health concern. A lack of data in the Teaching Hospital of Point G motivated this study aiming to determine the frequency of lumbar osteoarthrosis and the contribution of physical therapy in its management.

MATERIAL AND METHOD

This is a prospective and longitudinal descriptive study carried out in the physiotherapy department of the Teaching Hospital of Point G over 2-year-old from October 1st, 2021, to September 30th, 2023. The target population was the patient's undergoing physiotherapy during the study period. They were enrolled with free informed consent.

Data were collected using a questionnaire at the beginning and end of the treatment in which we asked them to classify their pain from: full improvement, little improvement, to no improvement at all and measure their pain intensity using the Visual Analog and the Katz Scales.

Data entry and analysis were done with SPSS (version 23) and text written using Office (version 2011).

RESULTS

Over 93 patients seen in the physiotherapy department, we selected sixty-two (62).

Lumbar osteoarthritis accounted for 9.3% of patients seen for physical therapy. Female predominated with 66.1% (n=41). The age range was from 60 to 69-year-old in 16 patients. The mean age was 51.1 years, with extremes of 19 and 78. Bambara ethnicity accounted for 37.1% of patients (n=23). Most patients (71%) were married. With 59.7% (n=27), patients with a level of education higher than or equal to college were the most represented, housewives represented 24.2% (n=15) and obesity was found in 41.9% of patients (n=26).

Trauma was reported in 11.3% of patients (n=7). A history of disc herniation was found in 33.9% cases (n=11). Sickle cell disease was found in 3 cases (4.8%), while five (5) others had type 2diabetes. Pain was the main revealing symptom of lumbar osteoarthritis. In 90.3% of patients (n=56), pain was the main reason for consultation and trauma in others. A morpho-static assessment was performed. Overweight and obesity were respectively found in 40.3% and 35.5% of patients. Scoliosis in 8.1% (n=5) and hyper lordosis in 9.7% (n=6). Valgum and varum knee deformity were associated with morpho-static spinal disorders in 22.6% of patients (n=14). A radicular syndrome with paresis was found in 24.2% of patients, a sensitivity disorder in 21% and one case of paralysis worsening the symptoms.

All the patients underwent a lumbar computed tomography (CT) for a diagnostic accuracy and spine damage assessment. Coxarthrosis was associated to the lumbar osteoarthritis in 12 patients (19.4%), knee arthrosis in 6 (9.7%). Osteoarthritis extended to the thoracic hinge, suggesting FORESTIER disease in 6.5% of patients (n=4). Digital osteoarthritis was associated with 2 patients (3.2%), suggesting polyarthrosis. Osteoarthritis was generalized (arthrosic disease) in one patient. Evaluation using the Katz scale prior to physiotherapy revealed that 46.8% of patients (n=29) had difficulty achieving autonomy without assistance. Elsewhere, the need for assistance was disparate (technical assistance for 9 patients, constant tier party's dependence for 2 patients and a need for non-constant tier party's assistance for another).

Physiotherapy treatment ranged from 10 to 45 sessions, with an average of 3 sessions per week. Clinical improvement was observed in 59 patients (95.2%): 38 patients (61.3%) who no longer felt pain and 20 who felt little pain. Assessment using the Katz scale after physiotherapy revealed autonomy in most patients (93.6%), unassisted difficulty in 3 patients (4.8%) and the need for technical assistance in 1 patient. There was a statistically significant relationship between the number of physiotherapy sessions and patients' clinical improvement, with a P value of 0.001.

DISCUSSION

Of the 1001 patients seen in the physiotherapy department during the study period, 93 (9.3%) suffered from lumbar osteoarthritis. Sixty-two (62) met the inclusion criteria. This finding is consistent with that of Maiga Y, who reported a frequency of 9.94% in 2016 [3]. It was the second most common spinal osteoarthritis in the rheumatology department of the CHU du Point G in a 2006 study, accounting for 34.1% [4]. According to Jean-Pierre Valat *et al*., the prevalence of lumbar osteoarthritis is very high, and appears to increase with age [5].

Our series showed a female predominance (66.1%), with a sex ratio of 1.9. Females also prevailed in Baba CISSE's series, with 59.8% of cases and a sex ratio of 1.4% [4], confirming the general finding above the age of 50 [6, 7]. The highest age group was 60-69 years, with 25.8%. The average age was 51.1, with extremes of 19 and 78. This result supports that of ABDELMOULA L *et al*., [8], who reported an average age of 51.9 years, with extremes of 24 and 82 years. This age reflects the period of life when disco-vertebral degeneration becomes more prevalent, as does bone demineralization linked to intense daily activity.

Housekeeping accounted for 24.2% of the workforce. Dramane T *et al*., had found 41.17% for the same profession [9]. Improper lumbar posture (prolonged lumbar flexion, excessive arching due to high heels, etc.) would explain this result. Overweight (40.3% overweight and 35.5% obesity) was associated with the condition, which was complicated by a slipped disc in 33.9% of cases. Obesity distorts the biomechanics of the lumbar spine, placing excessive pressure on the intervertebral discs and encouraging their destruction [10].

Pain accounted for 90.3% of consultations. Low-back pain is a frequent referral reason for specialist consultations, regardless of etiological factors [11]. A radicular syndrome involving paresis in 24.2% of patients, a sensitivity disorder in 21% of patients and one case of paralysis exacerbated the condition in our patients. Pain associated with single- or multi-radicular abrasion due to lateral or central osteoarthritic canal narrowing was reported by Eric A. Z. TSINDA in 55.4% of rheumatology patients [12].

In the alternative to MRI (costly), lumbar CT scans performed by all patients were useful for diagnostic accuracy and injury assessment. Standard radiography, although useful and accessible for diagnosis, is not suitable for assessing the consequences of compression of nearby neurological structures [5]. Associated thoracic osteoarthritis was indicative of FORESTIER disease in 6.5% of patients. Enveloping vertebral hyperostosis affects the thoracic spine predominantly but does not spare the lumbar spine.

However, the stream is often interrupted adjacent to the discs, taking on an eccentric, candle-flame shape in L3 [13].

Progression under physiotherapy is impressive. The prescription of rehabilitation sessions ranged from 10 to 45. An improvement in quality of life was observed in 59 patients (95.2%). Pain assessment using the Visual Analog Scale (VAS) was divided into 38 patients (61.3%) had no pain, while 20 had little pain. These results contrast with those reported by Eric A. Z. TSINDA and TRAORE M, respectively 50% and 48.4% [12-14].

Compared with the patients in our series, those of Eric A. Z. TSINDA and TRAORE M. only underwent medical treatment. TRAORE M. also used Lesquesne algo-functional index for evaluation. A recovery of total unaided autonomy of 93.6% was observed according to the Katz scale after physiotherapy treatment. There was a statistically significant relationship between the number of physiotherapy sessions and clinical improvement (P value=0.001).

CONCLUSION

Lumbar osteoarthritis is common in the elderly, but also affects young people. It generally affects women, with overweight, herniated discs and orthopedic deformities as associated factors. Vertebral deformities in sickle cell disease are deleterious to cartilage. Physiotherapy improves patients by correcting distorted attitudes, preventing further complications and alleviating pain. It cannot be dissociated from medical treatment, which it both optimizes and shortens.

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