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Epidemiological and Clinical Aspects of Non-Traumatic Back Pain in Rheumatology in Bouake

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Abstract

Introduction: Back pain is common in rheumatology practice, but the figures vary between studies. In Africa, several studies have examined disorders of the thoracic spine in a rheumatology setting. However, in Bouaké, no study has been carried out on this subject. The aim of this study was to investigate the epidemiological and diagnostic profile of non-traumatic back pain (NTBP) in rheumatology practice in Bouaké, Côte d'Ivoire. **Objective:** To investigate the epidemiological and diagnostic characteristics of non-traumatic back pain (NTBP) in a black population from sub-Saharan Africa. **Patients and Methods:** A retrospective descriptive study covering a five-year period, from January 2014 to December 2018, involving patients seen for NTBP in a rheumatology practice in Bouaké, Côte d'Ivoire. **Results:** Of 2198 patients seen for a rheumatological condition, 154 had NTBP, representing a prevalence of 7 per cent. The mean age of the patients was 51.6 years ± 17.7 years and the sex ratio was 1.5. Thirty-nine patients had hypertension (25.3%), 10 had diabetes (6.5%) and 17 were HIV-1 positive (11%). Patients mainly presented with moderate to severe pain (92.8%) that had a gradual onset (90.9%) and a chronic course (89.6%), and paraparesis was observed in four cases (2.6%). In 20.8% of cases, the presentation was isolated back pain. Standard X-rays (93.5%) and CT scans (51.3%) were the most commonly prescribed imaging investigations. The diagnoses made were non-specific back pain (51.9%), Pott's disease (37.7%), back pain of visceral origin (7.8%), and neoplasms (2.6%). One hundred and thirty patients (84.4%) had self-medicated prior to their consultation with anti-inflammatory drugs (30.5%), antibiotics (3.2%) and traditional African medicine (3.2%). **Conclusion:** Non-traumatic back pain is not uncommon in rheumatological practice in Bouaké. It mainly affects patients aged between 25

and 75, with men being the most commonly affected. Common back pain and Pott's disease are the most frequent diagnoses.

Keywords

Non-Traumatic Back Pain, Common Back Pain, Pott's Disease, Bouaké

1. Introduction

Non-traumatic back pain is defined as pain in the back not resulting from any trauma. It is common in rheumatology practice, but the figures vary depending on the study [1]-[6]. In Africa, several studies have examined disorders of the thoracic spine in a rheumatological context [1]-[3]. In Togo, common back pain accounts for 9 per cent of rheumatological conditions in Kara, and 15.3 per cent of cases of gradual spinal cord compression are of dorsal origin in Lomé [1] [2]. In Benin, back pain is present in 40.1 per cent of school-age adolescents [3]. It accounts for approximately 12.9 per cent of musculoskeletal disorders in Mali [4], and 34.7 per cent of Pott's syndrome cases are of dorsal origin in Niger [5]. In Côte d'Ivoire, the hospital admission rate for non-traumatic back pain is 4 per cent in Abidjan [6]. However, in Bouaké, no study has been carried out on this subject. The aim of this study was to investigate the epidemiological and diagnostic profile of non-traumatic back pain (NTBP) in rheumatology practice in Bouaké, Côte d'Ivoire.

2. Patients and Methods

This was a retrospective descriptive study covering a five-year period, from January 2014 to December 2018, focusing on patients with non-traumatic back pain. The study included Black patients of Sub-Saharan African origin who were seen in the rheumatology outpatient clinic or admitted to the rheumatology ward at the Bouaké University Hospital in Côte d'Ivoire. We included all patient records in which a diagnosis of non-traumatic back pain had been made during the recruitment period. All records from patients for whom data could not be analysed were excluded from the study. The data collection tool was a data collection form. A diagnosis of NTBP was made for any patient who presented with back pain, regardless of aetiology, occurring in a non-traumatic context. Consequently, any patient with a history of spinal or spinal cord trauma occurring less than six months prior to the current episode was excluded from the study. Of the 200 patients presenting with non-traumatic back pain, 154 were included. 46 incomplete records were excluded.

Diagnostic criteria:

- Non-specific (common) back pain was diagnosed in cases of mechanical pain in the thoracic spine with no general symptoms and no evidence of inflammation in laboratory tests, accompanied by degenerative findings on imaging

(standard X-ray or CT scan).

- Pott's disease was diagnosed in cases of inflammatory back pain with a subacute or chronic course, occurring in the context of fever and a deterioration in general health, with imaging (CT scan) showing spondylodiscitis—sometimes with an abscess—and epiduritis, supported by bacteriological evidence. In our study, the diagnosis was made on the basis of presumptive evidence in the majority of cases.
- The diagnosis of visceral back pain was made in the presence of pain in the dorsal region, with a physical examination and imaging of the dorsal spinal segment showing normal findings. Physical examination of other systems (respiratory, cardiovascular, digestive, etc.) revealed abnormalities confirmed by the corresponding imaging studies.
- Multiple myeloma was diagnosed in a patient presenting with inflammatory back pain and a history of exposure to chemicals; imaging (CT scan) revealed punch-out lytic lesions, whilst the myelogram demonstrated more than 10 per cent dysmorphic plasmacytosis
- Bone metastasis from prostate cancer was diagnosed in a patient with a history of prostate cancer, who presented with inflammatory back pain; imaging (CT scan) revealed an "ivory vertebra" appearance.

The epidemiological characteristics studied were: age, sex and occupation. The diagnostic aspects studied were: the manner in which symptoms began, the duration of symptoms prior to consultation, the intensity of pain, the reason for consultation, medical history, the presence of motor deficits, the imaging performed and the lesions observed, the diagnosis made, the presence of self-medication, and the medicines used in cases of self-medication. The data were analysed using version 7 of the "EPI-INFO" software. From an ethical standpoint, the confidentiality and anonymity of the respondents were respected. Official authorisation for the study was obtained from the scientific and medical management of the Bouaké University Hospital.

Limitations of the study:

- The retrospective nature of the study, which limits the information available
- The high cost of imaging tests, particularly CT scans and, above all, magnetic resonance imaging, which limits their use
- The lack, in some cases, of definitive diagnostic tests for infectious and neoplastic conditions

3. Results

Of the 2198 patients who consulted for a rheumatological condition during the study period, 154 had NTBP, representing a prevalence of 7 per cent. The mean age of the study population was 51.6 years ± 17.7, with ages ranging from 15 to 90 years. The 25 - 55 age group accounted for 46.1% of patients (71 cases), and the 55 - 75 age group for 40.3% of patients (62 cases). The sex ratio was 1.5 (92 men and 62 women). With regard to the patients' occupations, 124 were housewives,

farmers, shopkeepers and manual workers (80.5 per cent), and 30 were teachers, members of religious orders, medical staff, law enforcement officers, secretaries and administrative managers, both retired and non-retired (19.5 per cent).

The onset of symptoms was sudden in 14 patients (9.1 per cent) and gradual in 140 patients (90.9 per cent). The course of the condition was acute in 4.5 per cent of cases (seven patients), subacute in 5.9 per cent of cases (nine patients), and chronic in 89.6 per cent of cases (138 patients). Pain intensity was mild (VAS ≤ 4) in 11 cases (7.2%), moderate (4 < VAS ≤ 7) in 126 cases (81.8%) and severe (VAS > 7) in 17 cases (11%). Clinically, motor deficit (paraparesis) was observed in four cases (2.6%). Table 1 shows the medical history and reasons for consultation.

Table 1. Medical history, reasons for consultation.

		Number of patients	Percentage
Background	High blood pressure	39	25.3
	Diabetes	10	6.5
	Alcohol and Tobacco	8	5.2
	HIV-1	17	11
	Shingles	9	5.8
	Prostate cancer	2	1.3
	Epigastric pain	10	6.5
Reason for consultation	Isolated back pain	32	20.8
	Associated intercostal neuralgia	28	18.2
	Associated dorsolumbar back pain	56	36.4
	Associated peripheral joint pain	38	24.6

All patients had undergone imaging (100%). These consisted of standard X-rays (144 patients, or 93.5%), CT scans (79 patients, or 51.3%) and MRI scans (1 patient, or 0.6%). No disc-vertebral biopsies were performed. The diagnoses made were non-specific back pain (80 patients, or 51.9%), Pott's disease (58 patients, or 37.7%), visceral-origin back pain (12 patients, or 7.8%), and neoplasms (four patients, or 2.6%). Table 2 shows the radiological findings and the diagnoses made.

Table 2. Radiological findings and the diagnoses made.

		Number of patients	Percentage
Radiographic lesions	Spinal osteoarthritis	114	74
	Discopathy	102	66.2
	Spondylodiscitis	58	37.7
	Vertebral compression	4	2.6

Continued

	Osteolysis	2	1.3
	Demineralisation	31	20.1
	Normal X-ray	34	22.1
Diagnosis made	Common back pain	80	51.9
	Pott's disease	58	37.7
	Back pain of visceral origin	12	7.8
	Gastritis and gastro-oesophageal reflux	7	4.6
	Coronary syndrome	4	2.6
	Lung disease	1	0.6
	Neoplasm	4	2.6
	Prostate metastasis	2	1.3
	Multiple myeloma	2	1.3

From a therapeutic perspective, 130 patients (84.4%) had self-medicated prior to their consultation. These included non-steroidal anti-inflammatory drugs (30.5%), analgesics (40.9%), muscle relaxants (3.9%), antibiotics (3.2%) and traditional African medicines (3.2%).

4. Discussion

Non-traumatic back pain (NTBP) is not uncommon in rheumatology practice in Bouaké. Its prevalence is 7 per cent and the average number of cases is 30.8 per year, which is approximately two to three cases per month. Common back pain is the most frequent cause, followed by Pott's disease. Indeed, the prevalence of NTBP varies between 4 and 9 per cent in rheumatology practice in sub-Saharan Africa, depending on the study [1] [6]. In contrast to our study, inflammatory causes (80.6 per cent) are the most common cause of back pain in Abidjan, and Pott's disease accounts for 67.2 per cent of cases [6].

The study population had a mean age of approximately 51.6 years and consisted predominantly of men. Patients mainly presented with chronic pain of moderate to severe intensity, and motor deficit of the paraparesis type was present in four cases. A chronic and hyperalgesic profile was observed in most studies from sub-Saharan Africa, and the mean age of patients did indeed range between 40 and 50 years in these studies [1]-[6]. However, the sex ratio favoured women in the study conducted in Abidjan and Togo (1.6). Disease affecting the thoracic spine is sometimes responsible for motor deficits, as in the study conducted in Lomé, which found that 15.3% of cases of slow-onset spinal cord compression are thoracic in origin [2].

Back pain of visceral origin was present in 7.8% of cases in our study. Indeed, intrathoracic organs can cause pain that may radiate and mimic back pain of spi-

nal origin, sometimes posing a real diagnostic challenge [7] [8]. It is recommended that visceral causes be ruled out before concluding that back pain is of musculoskeletal origin, as certain causes may be life-threatening in the short term [7] [8].

In terms of treatment, more than four in five patients (84.4%) had self-medicated prior to their consultation. This clearly reflects a reality of medical practice in our context [9]. Indeed, some patients only seek medical advice after self-medication has failed [9]. The reason cited is the high cost of hospital care. The consequences include not only the chronic progression of conditions with the onset of complications, and gastrointestinal and renal toxicity from medication, but also diagnostic errors in conditions that have been mismanaged and antimicrobial resistance [10]. Indeed, some patients in our study used antibiotics and anti-inflammatory drugs inappropriately.

5. Conclusion

NTBP is not uncommon in rheumatology clinics in Bouaké. It mainly affects patients aged between 25 and 75, with men being the most commonly affected. Patients most often present with chronic pain ranging from moderate to severe in intensity, with a gradual onset and a chronic course. Degenerative changes are frequently observed on X-rays. Common back pain and Pott's disease are the most frequent diagnoses. Most patients had self-medicated prior to their medical consultation.

Conflicts of Interest

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

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Appendix

Record N°: ……

Gender: ☐ Male ☐ Female

Age: ……

Age group: ☐ < 25 years ☐ 25 - 55 years ☐ 55 - 75 years ☐ >75 years

Occupation: ……

Hypertension: ☐ Yes ☐ No

Diabetes: ☐ Yes ☐ No

HIV infection: ☐ Yes ☐ No

Other history: ……

Reason for consultation: ……

Onset of symptoms: ☐ Sudden ☐ Gradual

Course/progression: ☐ Acute ☐ Subacute ☐ Chronic

Pain intensity (VAS): ☐ Mild (VAS ≤ 4) ☐ Moderate (4 < VAS ≤ 7) ☐ Severe (VAS > 7)

Clinical presentation: ☐ Isolated back pain ☐ Back pain with associated symptoms

If associated symptoms, specify: ……

Motor deficit (paraparesis): ☐ Yes ☐ No

Imaging performed: ☐ Standard X-ray ☐ CT scan ☐ MRI ☐ None

Radiological findings:……

Diagnosis: ☐ Non-specific (common) back pain ☐ Pott's disease (spinal tuberculosis)
☐ Back pain of visceral origin ☐ Neoplasm

Other diagnosis, specify:……

Self-medication prior to consultation: ☐ Yes ☐ No

Self-medication used (if yes): ☐ NSAIDs ☐ Analgesics ☐ Muscle relaxants ☐ Antibiotics
☐ Traditional African medicine

Other treatment, specify: ……