

Pain in Hansen's disease patients*

A dor no paciente com hanseníase

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SUMMARY

BACKGROUND AND OBJECTIVES: The involvement of peripheral nerves is a major characteristic of Hansen's disease and may lead to physical incapacity and deformity. This study aimed at evaluating the clinical-epidemiological characteristics of Hansen's disease patients with pain complaints to develop health actions directed to early diagnosis and treatment of the disease.

METHOD: Retrospective study in 732 records of patients with presumed or confirmed Hansen's disease diagnosis, treated in the Dermatological Reference Center of Fortaleza from January to December 2008. Physical incapacity, presence of eye deformities such as lagophthalmos, trichiasis, corneal opacity and decreased visual acuity, claw hand, drop hands or feet, ankle contracture and bone reabsorption were considered.

RESULTS: From all evaluated patients, 65.9% had loss of tactile, thermal or painful sensitivity, indicating involvement of skin fibers; 4.31% of them had severe pain at palpation of some nerve, especially tibial (50%), ulnar (43.8%), radial (21.9%) and fibular (21.9%). Initial symptoms for these patients were white or reddish spots (56.2%), decreased sensitivity (40.6%), decreased muscular strength (15.6%) and physical incapacity (12.5%).

CONCLUSION: The incidence of skin manifestations was more prevalent, followed by neurological manifest-

ations being radial, fibular, ulnar and tibial nerves the most affected in patients with pain complaints.

Keywords: Hansen's disease, Neuropathy, Pain.

RESUMO

JUSTIFICATIVA E OBJETIVOS: O comprometimento dos nervos periféricos é uma característica marcante da hanseníase, podendo causar incapacidade física e deformidade no paciente. O objetivo deste estudo foi analisar as características clínico-epidemiológicas dos pacientes hanseníase com queixas algicas, com o intuito de elaborar ações de saúde direcionadas ao diagnóstico precoce e tratamento da doença.

MÉTODO: Estudo retrospectivo em 732 prontuários de pacientes com diagnóstico presuntivo ou confirmado de hanseníase, atendidos no Centro de Referência Dermatológica em Fortaleza; atendidos no período de janeiro a dezembro de 2008. Foi considerada incapacidade física a presença de deformidade nos olhos como lagofalmo, triquíase, opacidade corneana e diminuição da acuidade visual, mãos em garra, mãos ou pés caídos, contratura de tornozelos e reabsorção óssea.

RESULTADOS: Do total de pacientes analisados 65,9% apresentava perda de sensibilidade tátil, térmica ou dolorosa, o que indicava acometimento de fibras cutâneas, sendo que 4,31% deles apresentavam dor intensa à palpção de algum nervo, sendo mais acometidos, respectivamente o tibial (50%), o ulnar (43,8%), o radial (21,9%) e o fibular (21,9%). Os sintomas precedentes nesses pacientes foram manchas brancas ou avermelhadas (56,2%), diminuição de sensibilidade (40,6%), diminuição de força muscular (15,6%) e incapacidade física (12,5%).

CONCLUSÃO: A incidência de manifestações cutâneas foi a mais prevalente, seguida das manifestações neurológicas, sendo os nervos radial, fibular, ulnar e tibial os mais acometidos nos pacientes que apresentavam queixas algicas.

Descritores: Dor, Hanseníase, Neuropatia.

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INTRODUCTION

Hansen's disease is an infectious disease of slow evolution, caused by the *Mycobacterium leprae* (ML), also known as Hansen's bacillus. It is a pathogen of high infectivity and low pathogenicity. ML is a neurotropic bacterium with special predilection for Schwann cells involving peripheral nerve axons. This disease affects peripheral nerves in addition to skin and mucosa^{1,2}

According to the World Health Organization (WHO), Hansen's disease is confirmed when patients present positive bacilloscopy, skin injury with change in sensitivity or neural thickening. The disease may be divided in four types: indeterminate (when there is no nervous trunks involvement), tuberculoid (when there are sensitivity disorders), borderline (which is a transition form) and Virchowian (which is the only contagious type). Some people may be resistant to Hansen's bacillus and represent cases of paucibacillary (PB). Those without resistance to the bacillus are multibacillary cases (MG), being the major transmitters of the disease¹.

The involvement of peripheral nerves is a major feature of this disease, with potential to cause physical incapacity and deformity, especially reaching economically active population⁴.

According to WHO, Brazil is the second in number of new Hansen's disease cases, with very unequal distribution in different Brazilian regions. Only the Southern region was able to meet WHO proposed goal, with less than one case for every 10 thousand inhabitants. In the Northeastern region, Ceará is one of the states where the disease is more endemic, being the 9th in number of new cases^{1,6}.

Pain is one of the most disabling symptoms of this disease and since there are few data on the subject, this study aimed at evaluating clinical-epidemiological characteristics of Hansen's disease patients with pain complaints, aiming at developing health actions directed to the early diagnosis and treatment of the disease.

METHOD

After the approval of the Ethics and Research Committee, Dermatological Center Dona Libânia (CDDL) from the city of Fortaleza, protocol n. 02/2009, this retrospective study was carried out reviewing records of patients with presumed or confirmed Hansen's disease diagnosis, treated by CDDL from January to De-

ember 2008. Presumed Hansen's disease diagnosis was made by the assistant physician. Final diagnosis was considered the diagnosis present in the Ministry of Health notification card.

Physical incapacity was considered the presence of eyes deformity such as lagophthalmos, trichiasis, corneal opacity and decreased vision, claw hands, drop hands or feet, ankle contracture and bone reabsorption. Data were analyzed by the Epi Info 3.5 program.

Table 1 – Demographics of Hansen's disease patients (n = 732)

Variables	N	%
Age bracket		
0-20	77	10,5
21-40	206	28,2
40-60	304	41,5
Above 60	145	19,8
Residence		
Fortaleza	586	80
Other cities	146	20

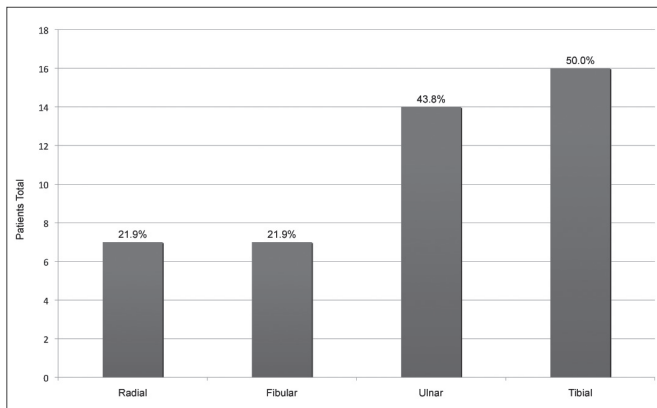
RESULTS

CDDL received 732 patients with suspected or diagnosed Hansen's disease, being 399 males (54.5%) and 333 females (45.5%) (Table 1). Possible infection source in 187 (25.6%) was contact within the household in 16.3% and neighborhood in 9.3%.

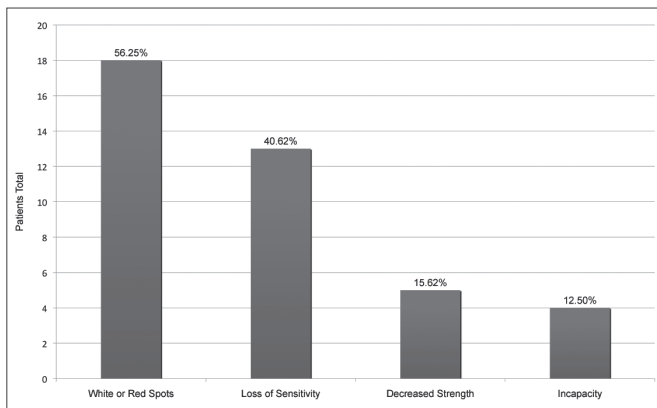
The diagnosis of Hansen's disease types at admission was: 35.9% borderline, 25% tuberculoid, 15.3% Virchowian and 3.5% indeterminate. The type of Hansen's disease was not classified in 148 patients (20.2%). Final diagnosis was similar to admission diagnosis: 46.7% borderline, 28% tuberculoid, 19.3% Virchowian and 3.1% indeterminate. Hansen's disease type was not classified in 21 patients (2.9%).

From all evaluated patients, 65.9% had loss of tactile, thermal or painful sensitivity, indicating involvement of cutaneous fibers and 4.31% of them presented severe pain at palpation of some nerve. The most affected nerves were tibial (50%), ulnar (43.8%), radial (21.9%) and fibular (21.9%). Early symptoms for those patients were white or reddish spots (56.2%), decreased sensitivity (40.6%), decreased muscle strength (15.6%) and physical incapacity (12.5%) (Graph 1).

In addition to pain, patients presented other associated symptoms. Most prevalent symptoms in patients with pain complaints and neural involvement were white or reddish spots, loss of sensitivity, decreased strength and incapacity (Graph 2).



Graph 1 – Distribution of affected nerves in patients with pain complaints



Graph 2 – Distribution of most prevalent symptoms in patients with pain complaints concomitant to neural involvement

DISCUSSION

The city of Fortaleza (Ceará) is considered priority for actions to eliminate Hansen's bacillus, however Hansen's disease is still a major public health problem. Neural involvement and pain manifestations in Hansen's disease patients prove that the disease still requires attention aiming at preventing or minimizing progression and avoiding sequelae.

In a study in the city of Rio de Janeiro, the incidence of neurological manifestations in patients with diagnosed or suspected Hansen's disease was 25%, being this the most prevalent manifestation in such patients⁷. Our study had similar results, however the incidence of neurological manifestations, which was the second most prevalent complaint, was even higher, of approximately 40.6%.

It is important to stress that Hansen's disease is not only a dermatological disease with neurological complications and the physician should be careful because a single skin

injury does not mean that the disease is restricted to the site of such manifestation, and other signs and symptoms should be investigated⁷. In our study, 56.2% of patients had as most prevalent concomitant symptom skin manifestations, such as white or reddish spots.

Loss of tactile, thermal or painful sensitivity was observed in 40.6% of patients, however pain at palpation was found in 13.8% of patients, being that 4.3% of them had neural involvement of at least one nerve. Most affected nerves in patients with pain complaints were radial, fibular, ulnar and tibial nerves, respectively.

The involvement of peripheral nerves is a major characteristic of the disease, responsible for physical incapacity and deformities. Superficial nervous trunks normally affected by the disease are ulnar, common fibular, posterior tibial, facial and great auricular⁴. In our study, most frequently affected nerves were tibial, ulnar and fibular, differently from other study where most affected nerves were ulnar, auricular and radial⁷.

Physical incapacity was found in 12.5% of patients and is the major problem of Hansen's disease, causing negative impact on the daily life of patients. A study performed in Brasilia has identified incapacity in 8% of patients, or a lower prevalence than that found in this study. The authors justify this low prevalence with the success in detecting new cases⁸. A study carried out in Manaus, including patients up to 15 years of age, has shown an even lower incapacity of approximately 2.9%. Silent neuritis can only be detected by sequential follow-up, allowing the careful evaluation of disease-related incapacities⁷.

Hansen's disease neuropathy results from an inflammatory process of peripheral nerves, the intensity, extension and distribution of which depends on the clinical manifestation, on the evolution of the disease and on acutization phenomenon during reaction episodes (reaction type 1 or reverse reaction and reaction type 2 or erythema nodosum leprosum) and may affect cutaneous branches or the nervous trunk, in an isolated (mononeuropathy) or multiple (multiple mononeuropathy) way¹.

Reaction episodes involving nerves are clinically known as neuritis and represent spontaneous pain or pain at palpation of a nervous trunk, followed or not by neural involvement, or even the isolated involvement of the nervous function, detected during sequential evaluation of patients with no pain.

Hansen's disease affects autonomic, sensory and motor fibers and may cause several symptoms, depending on the affected fiber. Hansen's disease neuropathy may be acute or chronic. The former is suddenly presented with pain and edema, without functional impairment, while

the latter is insidious, with pain and functional impairment depending on the area innervated by the affected nerve, evolving with variable pain symptoms¹⁰, Hansen's disease reactions are treated with steroids, being prednisone the most widely used in the dose of 1-2 mg/kg of body weight, in general orally administered. Venous use is only indicated for patients with very severe symptoms or neurological presentations difficult to control. Steroid therapy not always relieves pain and sometimes it has to be used for a long time, exposing patients to adverse effects of the drug. Other drugs may be necessary to control persistent pain, such as antidepressants and anticonvulsants¹⁰.

This study reinforces the importance of a routine neurological follow-up for patients with established Hansen's disease diagnosis with pain complaints suggesting neural involvement, to decrease permanent neural injuries and disabling sequelae of the disease.

CONCLUSION

The incidence of skin manifestations was the most prevalent, followed by neurological manifestations, being radial, fibular, ulnar and tibial the most affected nerves in patients with pain complaints.

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