ORIGINAL ARTICLE

NEUROTOXOPLASMOSIS BOARDING IN PATIENTS WITH HIV/AIDS IN INTENSIVE CARE UNIT

NEUROTOXOPLASMOSIS EM PACIENTES COM HIV/AIDS INTERNADOS EM UNIDADE DE TERAPIA INTENSIVA

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ABSTRACT

Objective: to investigate the clinical and epidemiological characteristics of toxoplasmic encephalitis in patients with HIV/AIDS.

Method: retrospective study, in the period 2004 to 2008, in the Intensive Care Unit of a referral hospital in infectious diseases in the State of Ceará, with a quantitative approach and sample comprised 75 records of patients diagnosed with HIV/AIDS and Neurotoxoplasmosis. Data collection was performed with structured form and previously tested in a pilot study. The data were tabulated in Excel program and then created a database where the percentages were calculated and frequency of events analyzed. Data were presented descriptively and analyzed in the literature. The study was conducted in accordance with the ethical principles of Resolution 196/96 of the institution (CEP 040/2004) and approved by the Ethics Committee of the institution (CEP 040/2004) with number CAAE 0052.0.042.000-08. Results: we identified the prevalence of males in 54 (72%) patients as compared to females (28%). With the diagnosis of cerebral toxoplasmosis, 69.3% (52) had been diagnosed for less than one year, 20% (15) for more than one year and 10.7% (8) was ignored. The length of ICU stay was less than 30 days in 90.3% (68) of cases and more than 30 days in 9.3% (7). Major complications were pressure ulcers, bleeding, pneumonia, shock and obstruction of the tracheostomy.

Conclusion: we conclude that despite the importance of intensive care patients with HIV/AIDS co-infections continue to be factors aggravating the clinical condition of these patients. Descritores: toxoplasmosis, cerebral; aids; aids-related opportunistic infections.

RESUMO

Objetivo: investigar as características clínicas e epidemiológicas da neurotoxoplasmose em pacientes com HIV/AIDS.

Método: estudo retrospectivo, no período de 2004 a 2008 na Unidade de Terapia Intensiva de um hospital referência em doenças infeciosas do Estado de Ceará, com abordagem quantitativa e amostra composta por 75 prontuários de pacientes com diagnóstico de HIV/AIDS e Neurotoxoplasmosis. A coleta de dados foi realizada com formulário estruturado e previamente testado em estudo piloto. Os dados foram tabulados no Programa Excel e, posteriormente, foi criado um banco de dados onde foram calculadas as percentagens e frequência dos eventos analisados. Os dados foram apresentados de forma descritiva e analisados com a literatura. O estudo foi realizado de acordo com os preceitos éticos da Resolução 196/96 do Conselho Nacional de Saúde e aprovado pelo Comitê de Ética da referida instituição (CEP 040/2008) com número do CAAE 0052.0.042.000-08. Resultados: foi identificada a prevalência do sexo masculino em 54 (72%) pacientes em relação ao sexo feminino (28%). Com relação ao diagnóstico de neurotoxoplasmose, 69,3% (52) já haviam sido diagnosticados há menos de um ano, 20% (15) há mais de um ano e 10,7% (8) foi ignorado. O tempo de internamento na UTI foi menor que 30 dias em 90,3% (68) dos casos e superior a 30 dias em 9,3% (7). As principais complicações foram úlceras de pressão, sangramento, pneumonia, choque e obstrução do traqueostomia.

Conclusão: apesar do importante dos cuidados intensivos com pacientes portadores do HIV/AIDS, as co-infecções continuam sendo fatores agravantes do quadro clínico desses pacientes. Descritores: toxoplasmosis cerebral; aids; infecções oportunistas relacionadas com a aids.

REVIEW

Objective: Investigar las características clínicas y epidemiológicas de la encefalitis toxoplasmica en pacientes con VIH/ aids. Método: estudio retrospectivo en el periodo 2004 a 2008 en la Unidad de Cuidados Intensivos de un hospital de referencia de enfermedades infecciosas en el Estado de Ceará, con enfoque cuantitativo y se muestra compuesta de 75 historias clinicas de pacientes diagnosticados con VIH / SIDA y neurotoxoplasmosis. La recolección de datos se realizó con formulario estructurado y probado previamente en un estudio piloto. Los datos se tabularon en el programa Excel y luego creó una base de datos, donde los porcentajes fueron calculadas y la frecuencia de los eventos analizados. Los datos se presentan de manera descriptiva y analizados en la literatura. El estudio se realizó de conformidad con los principios éticos de la Resolución 196/96 Nacional de Salud y aprobado por el Comité de Ética de la Institución (CEP 040/2008) con el número de CAAE 0052.0.042.000-08. Resultados: se identificó la prevalencia de los varones en 54 (72%) pacientes, en comparación con las mujeres (28%). Con el diagnóstico de toxoplasmosis cerebral, el 69,3% (52) habían sido diagnosticados con menos de un año, el 20% (15) desde hace más de un año y un 10,7% (8) fue ignorado. La duración de la estancia fue de menos de 30 días en el 90,3% (68) de los casos y más de 30 días en el 9,3% (7). Las principales complicaciones fueron las úlceras de presión, sangrado, neumonía, choque y obstrucción de la traqueostomía. Conclusión: Se concluye que a pesar de la importancia de los pacientes de cuidados intensivos con el VIH / SIDA co-infecciones siguen siendo factores agravantes de la situación clínica de estos pacientes. Descritores: toxoplasmosis cerebral; sida; Infecciones oportunistas relacionadas con el sida.
INTRODUCTION

Neurotoxoplasmosis (NT) is the opportunistic infection most common which affects the Centricl Neuro System, it is caused by the reactivation of latent infection, provoked by an intracell parasite named Toxoplasma gondii. In the individuals immunologically compromised, the cysts of the toxoplasms persists by an indefinate period, and any significant immunosupresion can be followed by the reactivation of the toxoplasmosis.¹

The individuals affected by the HIV/Aids present high possibilities to develop the NT, due to clinical condition of immunosupression, being able to result in upheavals of the cognitive function, déficits in the mental processes, as attention, learning, memory, rapidity of the processing of information, sensorial and motor capacity of resolution of problems and symptoms.²

In Brazil, 608,230 thousand cases of HIV/Aids, 1980 had been notified the June of 2011, being 397,662 (65.4%) in masculine sex and 210,538 (34.6%) in the feminine one. It has, however, the trend of increase in the prevalence of the infection for the HIV in the young, therefore, in accordance with the taxes of incidence of HIV/Aids between young of 15 the 24 years, in 2010, the tax for the men was of two cases of AIDs and for the women she was of 1,6 cases for each 100 a thousand inhabitants.³

This infection is the cause most common of cerebral injuries in patients with HIV/Aids, especially in developing countries. The injuries are multifocal and detected with bigger frequency in brain (basal ganglia, cerebral cortex, cerebral trunk and cerebellum) e, in minor, the retina, the myocardium and the lungs.¹⁴

The incidence of NT in patients with HIV/Aids is proportional to the prevalence of the latent infection of the T. Gondii enters the population in general. Before the therapy with antirretrovirals, one in each three people infected for the HIV acquired NT, with intense gradual immunological deterioration, in case that the therapeutical Prophylaxis were not indicated of precocious form and precise.⁵

Thus, the treatment with antirretrovirais provided the reduction of the incidence of this infection, increasing the life expectancy and improving the quality of life.

The risk of infection of NT associated with the patient with HIV/Aids is about 3 to 50% of the cases and presents high morbidity and mortality if not diagnosed and treated precociously, in order to reduce the complications neurosiquiatric. In the practical clinic, the definitive diagnosis of NT requires the demonstration of taquizoítos in the brain for biopia or autopsy. However, generally, the treatment is initiated after diagnostic based in the clinical characteristics and the results of the examinations of image.⁸

Ahead of the incidence of NT in patients with HIV/Aids, it is important to know the frequency of this opportunist illness in patients interned in Units of Intensive Therapy (UTI), which are immunodepressed and live deeply the occurrence of invasive procedures daily that intensify the risk of the sprouting of other illnesses associates to the infection for the HIV. Of this form, they had been objective of the study to investigate the clinical characteristics and epidemiologists of the Neurotoxoplasmosis in patients with HIV/Aids and to describe the main complications associated and the incidence of deaths for the illness.

METHOD

The research consisted of retrospective and descriptive study, with quantitative boarding, carried through of January the April of 2009, in a hospital reference in infectious illnesses of Ceará, integrant of the Only System of Health (SUS), representing a center of excellency in the diagnosis, the treatment, education, the research and prevention of these illnesses, recognized national and internationally. Initially, survey of all was carried through the patients who had been taken care of in UTI of the related hospital in a period of four years, through the system of information available by the institution.

The population was constituted by 507 handbooks of patients who had been interned in the UTI in the period of July of 2004 until July of 2008 with diagnosis of HIV/Aids. For the formation of the sample, the inclusion criteria had been applied: presence of medical diagnosis in the handbook of Neurotoxoplasmosis as co-infection by AIDS, confirmed by finding of computerized or laboratorial cat scan or clinical evidence. The exclusion criterion was: low quality of information in the handbook, translated for impossibility of the minimum fulfilling of 80% of the requested information for the form. After survey, analysis of handbooks and application of the criteria of inclusion and exclusion, the sample was composed of 75 handbooks of patients admitted in this sector with HIV/Aids associated with the NT.

The collection of data occurred with structurized form job, previously tested in study pilot, where characteristic
RESULTS

In the period of 2004 to 2008, 507 patients with diagnosis of HIV/Aids had been the 2008 admitted, in the UTI of the related institution. Of these, 75 had been enclosed in the study, having the prevalence of 14.8% individuals with diagnosis of Neurotoxoplasmosis as co-infection by HIV/Aids.

It was possible to identify the prevalence of the masculine sex in 54 (72%) patient ones in relation to the feminine sex (28%). The distribution by age group disclosed that 44% (33) were between 31 and 40 years, 32% (24) between 41 and 50 years, 16% (12) were above 50 years and only 8% (6) were between 21 and 30 years.

Related to naturality, the majority of patients was born in the agricultural zone of Ceará, totaling 60% (45) of the sample, whereas 28 (37.3%) were natural of Fortaleza and two (2.7%) handbooks did not contain the information. One observed that 41 (54.7%) of the individuals were resident of Fortaleza or the region metropolitan, 33 (44%) proceeded from the cities of the interior of the State and one (1.3%) only had the ignored information.

Related to the scholarity level, 29 (38.7%) had concluded basic education, 16 (21.3%) were alphabetized, 12 (16%) average education, eight (10.7%) had had the ignored information, six (8%) were illiterate and only four (5.3%) had concluded superior education.

Referring to the clinical variable, the time of knowledge of the seropositivity of infection by the HIV was minor than one year in 48 (64%) patients and above one year in 22 (29.3%) cases. In five (6.7%) handbooks, the information was ignored. With regard to the diagnosis of Neurotoxoplasmosis, 69.3% (52) already had been diagnosed less of one year, 20% (15) have one year more than and 10.7% (8) were ignored.

The time of internment in the UTI was minor than 30 days in 90.3% (68) of the cases and superior than 30 days in 9,3% (7). The illnesses associated had been: respiratory insufficiency (22.7%), pulmonary tuberculosis (14.7%), diarrheah (6.6%), moniliasis (4%) and other co-infections (26.7%). Nineteen (25.3%) patient ones had not had no associated illness. Relating to the carried through examinations, 77.3% (58) had made the cat scan of the skull, 21.4% (16) the sorology for toxoplasmosis and the 1.3% (1) magnetic resonance.

The main used drug therapies had been: vasoactive antibiotic therapy (73.3%), sedation (61.3%), analgesia (54.3%), drugs (42.7%) and prophylactic anticoagulation (29.3%). Inherent complications to the internment in the UTI had been identified, as ulcer by pressure (21.3%), bleed (20%), pneumonia (13.4%), shock (10.7%) and blockage of traquestomus (4.1%).

In accordance with the results, the evolution of Neurotoxoplasmosis associated with HIV/Aids had as outcome the death in 47 (62.7%) cases, followed of improvement of the picture in 22 (29.3%) patient ones, five (6.7%) transferences for another institution and absence of the information in one (1.3%) handbook.

DISCUSSION

The neurological illnesses continue being frequent causes of complications of the infection by the HIV/Aids in Brazil and the opportunist infections are the main etiologies of the illnesses of the nervous system. Factors as low adhesion to the antirretroviral therapy, less powerful regimen and bankruptcy the retrovirals multiples regimes can contribute for the increase of the risk of neurological complications.9

The tax of prevalence of Neurotoxoplasmosis between patients with HIV/Aids interned in the UTI was of 14.8%. Study carried through in Cuiabá with objective to identify sisthemical ringworm in these critical patients it identified to a prevalence of 14% of NT in the units specialized.10 In Belo Horizonte, the prevalence of toxoplasmosis was of 42.3% between the patients interned in a tertiary public hospital for carriers of the HIV/Aids, being the more common opportunist infection in the SNC.1
The place of the study collaborates for the accomplishment of the research, since the same it is reference for population with contagious infectious illnesses. The parameters of prevalence and incidence of this place have trend to be superior to the too much hospitals that the patients with differentiated profile take care of.

The predominance of the masculine sex was compatible with another study, which evaluated the clinical characteristics and epidemiologists of the patients with HIV that had searched for attendance in a hospital reference in Belo Horizonte, where 57.6% of the patients were men. This bigger incidence of the illness in men can be associated to the incauciousness of the masculine classroom in not using condom during the sexual act. The data of the bulletin are outstanding of epidemiologist of 2011, whose prevalence of the illness in the masculine sex is of 65.4%, confirming a bigger number of citizen with the illness of this sex. The relation between the sexos comes diminishing to each year, passing of 26 cases, in the masculine sex, for each woman with the infection, today the relation meets in 1.7 cases for the man in relation to the opposing sex.

Gradually, is perceived the dissemination of the infection between the feminine sex. In this study, it was verified that the incidence between the women was of 28%. The transmission of the HIV in women accent in populations with lesser scholarity and income, with restricted access to the services of health and the public politics of health destined to the prevention and the treatment of the infection by the HIV. Some factors can be related to this change, as bigger vulnerability of the feminine organism to the infection for the HIV, due to bigger prevalence of illnesses sexually transmissible asymptomatics and to the biggest risk of infection in the sexual intercourse.

The more frequent age group of the patients diagnosed with Neurotoxoplasmosis was of 31-40 years (44%), being these compatible data with study realised in the Brazilian frontier, composed of 588 cities with geopolitical division with French Guyana, Suriname, Guyana, Venezuela, Colombia, Peru, Bolivia, Paraguay, Argentina and Uruguay, that the predominance of the age group between 24 and 43 evidenced, 65.7% of the cases.

It is given credit that geographic and socioeconomical factors influence the clinical evolution of the infection for the HIV-1, contributing for the increase of the risk of exposition to other infectious agent. Was verified that 41 (54.7%) of the individuals was resident of the region metropolitan of Fortaleza and 33 (44%) proceeded from the cities of the interior of the State.

In Brazil, the profile epidemiologist of HIV/AIDS suffered many alterations since the first registers from the cases at the beginning of the decade of 1980. Is observed, currently, an internalization process, where if it perceives the propagation of the infection for the HIV/AIDS in distant cities of the main metropolitan areas, reaching the population in communities less attended in infrastructure. This process understands diverse aspects as the scattering of the epidemic of the biggest urban centers, located in its majority in the coast of the country, for other regions.

Another referring process to the progression of the epidemiological aspect is the pauperization, where is observed the rise of the number of cases between people with a lesser level of scholarity, what it thus favors the involvement of the kept out of society populations and vulnerable. So, the results of this study strengthen the data gifts in literature, since the level of prevalent scholarity were of basic education (38.7%), followed for alphabetized (21.3%) and, later, of average education (16%) and the superior level (5.3%).

The attainment of the diagnosis of infection by the HIV lesser than one year (64%) was predominant in the study, being in accordance with the findings of another study, where 40.4% of the participants had knowledge concerning the soroconversion were more than five years. The chronic evolution of the illness are related to the use of the antiretrovirals and the precocious prophylaxis against the opportunist illnesses, what makes possible the reduction of the morbidity mortality of these patients, with bigger quality of life and increase of the longevity of the same ones.

One evidenced that 69.3% (52) already had the diagnosis of Neurotoxoplasmosis less than year. The diagnosis is based on clinical history, in the neurological examination, the sorological examination and in the studies of image. In some cities, the precocious diagnosis of Neurotoxoplasmosis is limited by the not invasive equipment lack of images, of bigger sensitivity and specificity. The computerized scan (TC) of skull and the magnetic resonance (RM) are of great diagnostic value when showing injuries isodenses or hypodenses, only or multiple, with effect of mass and that they catch the contrast of ring form or nodular. In this study, 77.3% (58) of the patients had carried through
the TC and the only 1.3% (1) magnetic resonance. The magnetic resonance of encephalus is superior than the computerized scan of skull, beyond allowing to the demonstration of injuries hiperintenses and, relatively, symmetrical in the white substance.2

The confirmation of the diagnosis needs a criterious evaluation, therefore the clinical signals and symptoms and the findings of the studies radiological image can be confused with the ones of other illnesses that compromise the central nervous system of these patients, moreover definitive the ethiologic diagnosis can demand invasive and risky procedures.7

The sorological profile of these patients was similar to the one of the general population with chronic infection. The IgG antibodies commonly are not detected and the IgG antibodies do not discriminate between latent and active. The monitoring of the titulation of the serical antibodies can be useful to determine if the levels increase during the reactivation of the illness, being efficient for ends of diagnosis and the precocious intervention with prophylactic and therapeutical measures.7

The delayed diagnosis contributes for the cognitive compromise of the patient, clinically significant when it affects the functioning of the daily activities. The individuals infected with light cognitive alterations can present occupational problems, except in the initial periods of training of the illness. Individuals HIV-positives with cognitivas alterations, mainly, in executive powers and processes of learning present, generally, minor performance at work.2

Some patients had presented, beyond the association of Neurotoxoplasmosis with the HIV/Aids, the development of other illnesses such as respiratory, pulmonary tuberculosis, diarrheah insufficiency and moniliasis with predominance of the respiratory insufficiency (22.7%) and of the pulmonary tuberculosis (14.7%). The respiratory picture of Insufficiency, presented in the patients, justified the admission in the center of intensive therapy, in the majority of the cases, confirming the occurrence of this complication in the patients. The individual with HIV/Aids is suscetptil to the emergent and neglected illnesses, which could be followed by the health services.

Functionally, the patients with illnesses neuromusculars present reduction in the vital capacity and pulmonary total. The gradual form of the accomplishments of the respiratory muscles in the illnesses neuromusculars produces alterations of the sanguineous gases due to alveolar hipoventilação, causing hypoxaemia and hipercaopia.1 Atelectasis, pneumonias and respiratory insufficiency, initially during sleep and later, exactly in the vigil, are the complications waited in this situation.15

The hospital respiratory infections occur in virtue of repeated secretion aspirations of superior aerial ways, broncoaspiration of gastric contents or exogen contamination by contaminated articles. spirometry, the oximetria of pulse, the capnografía, the measures of the peak of flow of the cough, the maximum inspiratória pressure and the maximum expiratória pressure allows to foresee the patients who need attended cough and ventilatory support. 15

The sedatives and analgesics are the drugs more used in the units of intensive therapy, are useful in the reduction of the anxiety and of the consumption of oxygen.17 After the analysis of the data, evidenced that 61.3% of the patients had needed sedation and 54.3% of analgesia.

The majority of the patients of UTI lived deeply episodes of pain, fear and anxiety. The analgesia and the sedação are basic to supply comfort to the patient, to reduce stress and to prevent the retardation in the recovery and it means of the ventilation mechanics. The inadequate sedation causes pain, anxiety, agitation, removed of catheters, miocardical ischemia and hypoxaemia, whereas the extreme or drawn out sedation causes to scabs, compression of nerve, delirium and ventilation drawn out mechanics.18

Corticoteroides must be used only in cases of expansive injuries with significant edema or effect of mass. The reduction of the inflammatory process generates clinical improvement of the patient who does not correspond, necessarily, to the improvement of the opportunist illness. Corticoedanes can mask the presence of different cerebral expansiva injury of toxoplasme cerebral.19

The use of anticonvulsives does not have to be routine, recomending the administration after the presence of convulsions. These medicines present numerous adverse effect and drug interactions, having to be used criteriously.19

Beyond the drug treatment for the complications and clinical manifestations of the NT, specific medications exist that act to cure the individual. The treatment of choice of toxoplasme cerebral is constituted by the association of sulfadiazina, pirimetamina and acid fonilic.19 Even so already antitoxoplasma...
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exists other medicines with recognized activity, as the clindamicina, sulfametazol, trimetoprim and the espirimicina, none has the effectiveness of the sulfonamidas combination of pirimetamina with and it does not present activity against the cysts of parasita. The quimioprofilaxis is a strategy that diminishes the occurrence of NT in imunodepressive patients with HIV/Aids.

Between the studied population, 73.3% of the patients had used antibiopic therapy per in the maximum 30 days. This prophylactic treatment, generally, is used to prevent the occurrence of other opportunist illnesses associated to neurotoxoplasmosis.

Between the complications presented by the patients, are distinguished ulcers for pressure, shock, pneumonia, acute renal insufficiency, bleed with transfusion necessity and blockage of traquestomous. The incidence of ulcers by pressure is bigger in patients interned in UTI in relation to those which are lodged in other units of hospital. These complications will extend the internment time and to provide to greater risk for infections, increasing the cost in the treatment.

The mechanic ventilation consists of a method of support for the treatment of patients with respiratory insufficiency, which has as main objective the adequate maintenance of the gaseous exchanges, beyond allowing to the correction of the hypoxaemia and acidose respiratory associate to the hipercapnia, diminishing the fatigue, to alliviate the work of the respiratory muscles and to minimize the oxygen consumption, improving the respiratory discomfort.

Encefalic toxoplasmosis is one of the main causes of morbidity and mortality in the infected patients by the HIV and can be the initial manifestation of this afection. The evolution for death occurred in 62,7% of the participants, what it corroborates the founds of another study, which had the death as outcome in 41,3% of the studied cases.

CONCLUSION

From the analysis of the results, was evidenced, although the advances technological and scientific, that the Neurotoxoplasmosis continues compromising patient with HIV/Aids, having presented similar prevalence compared with other Brazilian studies. It is stood out, also, the identification of the feminization process, internalization and pauperization of the epidemic. Although the feminine sex comes if detaching in the referring statisticians to the cases of HIV/Aids, still the predominance of the masculine sex is observed. For these patients, the escape for other cities makes possible the construction of a new life between people who are unaware of its illness.

The predominance of the evolution of the cases the death in more than the half of the citizens confirmed the state of depletion of the imunológico system of the carrier of the alert HIV/Aids and for the necessity of efficient interventions that they aim at to reduce decurrent complications of the opportunist illneses associated to the infection by the HIV.

It becomes evident a greater concern on the part of the professionals of the area of Health during the given assistance this clientele, since carrying of HIV they are imunocomprometidos and they possess bigger easiness for acquisition of other infections, moreover presents some complications during the period of internment. Of this form, the coinfeccions remain as factors aggravations of the clinical picture of these patients and the Neurotoxoplasmosose follows as important infection that causes alterations the quality of life of carriers, beyond configuring itself as potential factor of risk of life to the carrying patients of the HIV/Aids.

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