

Alterations in episodic memory in patients with systemic lupus erythematosus[☆]

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Abstract

The purpose of this paper was to examine memory performance in patients with SLE by studying the overall deterioration in memory, analyzing the differences and frequency of impairment in the variables from the visual and verbal memory tests, and studying the alterations in the memory. This study included 59 patients with a diagnosis of systemic lupus erythematosus (SLE) and 18 with a diagnosis of chronic discoid lupus (CDL), who were administered the Spanish complutense verbal learning test (TAVEC) and the Rey complex figure test (RCFT). Statistically significant differences were detected between the two groups on the immediate visual recall and delayed visual recall variables, with the mean of the SLE group being lower than that of the CDL group. The difference between the frequency of verbal and visual impairment could be explained by various factors, one of which would be a lateralization of memory impairment.

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1. Introduction

Systemic lupus erythematosus (SLE), prototype of the autoimmune diseases, is a systemic disease characterized by an alteration in the immunological response, with a production of antibodies directed toward mainly nuclear

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antigens, thus affecting multiple organs and systems. The course of the disease includes a wide spectrum of clinical manifestations, different anatomopathological findings and a series of immunological abnormalities (Jiménez-Alonso & López-Gómez, 1991; Aula Acreditada, 2003).

The neuropsychiatric manifestations are present in SLE in 14–75% of the cases, and they make up what is called neuropsychiatric lupus (NPSLE) (ACR Ad Hoc Committee on Neuropsychiatric Lupus Nomenclature). Included are central nervous system syndromes, such as aseptic meningitis, cerebrovascular disorders, demyelination syndrome, headache (migraine and benign intercranial hypertension), movement disorders (including chorea), myelopathy, states of confusion, anxiety disorders, mood disorders, cognitive impairment and psychosis, as well as peripheral nervous system syndromes, such as Guillain–Barre, autonomic disorders, mononeuropathy, severe myasthenia, cranial neuropathy, plexopathy and polyneuropathy.

Since 1999, the American College of Rheumatology (ACR) has included the neuropsychological alterations in the neuropsychiatric alterations of SLE; therefore, these alterations have become a sign of involvement of the nervous system in a disease where diverse organs, among them the brain, can be affected. Some recent studies show that the prevalence of psychiatric abnormalities present in SLE is 90% (Haupt, 2004), if the mild cognitive impairments are included.

The alterations in the nervous system and neuropsychological functioning in patients with systemic lupus erythematosus (SLE) have been the subject of numerous studies, with impairments found in diverse areas, among which memory, attention, verbal fluency, cognitive flexibility and visuomotor coordination are the most noteworthy, and with a prevalence of impairment of about 25% (Carbotte, Denburg, & Denburg, 1986; Denburg, Carbotte, & Denburg, 1987; Monastero et al., 2001; Sabbadini et al., 1999; Spangenberg, Möller, Hugo, Halland, & Whitelaw, 2000). The neuropsychological research on SLE is in a descriptive stage. The most important studies on the topic show the panorama of the general neuropsychological deterioration in this type of patients. However, the difficulty in finding patterns of neuropsychological impairment has not yet been resolved, as the literature refers to a great variability in the domains altered. The heterogeneity of the results obtained is, in part, due to the pathogenic processes of the disease themselves, which even today are not very well understood (Barr & Merchut, 1992), and, in part, to the methodological deficiencies of some of the studies (Skeel, Johnstone, Yangco, Walker, & Komatireddy, 2000).

In spite of all this, memory is one of the areas where impairments have systematically been found in the majority of the studies (Ainiala, Loukkola, Peltola, Korpela, & Hietaharju, 2001; Carbotte et al., 1986; Denburg et al., 1987; Hanly, 1992; Hay, 1992; Kutner, Busch, Mahnood, Racis, & Proebe, 1988; Monastero et al., 2001; Sabbadini et al., 1999; Spangenberg et al., 2000), although not in all of them (Ginsburg et al., 1992; Papero, Bluestein, White, & Lipnick, 1990; Wekking, Nossent, van Dam, & Swaak, 1991). This difference may be due to the use of small samples, non-standard tests, lack of a control group or the use of an inappropriate control group (Skeel et al., 2000). There has still not been enough research carried out to clarify which types of memory and processes are altered or intact. It can be hypothesized, based on the research that evaluates general neuropsychological deterioration, that the processes most frequently impaired are those of free recall, rather than those of recognition. However, there is a lot of controversy about the type of memory impaired, as some studies reveal damage in both verbal and visual memory (Ainiala et al., 2001; Carbotte et al., 1986; Denburg et al., 1987; Hanly, 1992; Hay, 1992; Kutner et al., 1988; Monastero et al., 2001; Spangenberg et al., 2000), and others only in visual memory (Hay, 1992; Ferstl, Niemann, Biehl, Hinrichsen, & Kirch, 1992).

On the other hand, these neuropsychological results obtained in other countries cannot be extrapolated to a Hispanic population. As the literature has shown, culture has an important effect on neuropsychological tests (Puente & Agranovich, 2004; Puente & Pérez-García, 2000; Rosselli & Ardila, 2003). For this reason, it is important to use neuropsychological tests adapted to each population, in order to avoid any cultural effects (Puente & Pérez-García, 2000), and to examine whether the results found in other populations are also found in the Spanish population.

Therefore, the purpose of this study is to investigate the memory alterations in patients with SLE, including frequency, type and processes in a Spanish population. The objective of specifying the type of process impaired is important in order to increase knowledge about the neuropsychological alterations of this autoimmune disease, to find out whether the pattern of memory deficits is similar to that of other types of patients and, finally, but not less important, to develop a specific intervention plan that is appropriate for the neuropsychological rehabilitation of these patients in this cognitive area.

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