Clinical significance of Mr MRS in the diagnosis of early alzheimer's disease

Yuan-Ming Jiang, Ming-Yu Ren, Jian-Nan Xiao, Xu Han, Bao-Ying Sheng

The First Affiliated Hospital of Jiamusi University, Heilongjiang Jiamusi 154003

ARTICLE INFO

Article history:
Received 24 Apr 2018
Received in revised form 10 May 2018
Accepted 18 May 2018
Available online 28 May 2018

Keywords:
Nursing intervention
Allergic rhinitis
Mental state
Therapeutic compliance

ABSTRACT

Objective: To explore the clinical diagnosis effect of mri MRS on early alzheimer's disease.

Methods: A total of 40 patients with alzheimer's disease who visited our hospital from December 2015 to December 2016 were selected as the study subjects, and they were treated as observation group. Another 40 patients were selected as control group. Mri MRS diagnosis was performed in both groups, and the clinical indicators of the two groups were compared.

Results: observation group of patients on the left side of the hippocampus MI/Cr, NAA, MI/NAA/Cr, Cho/Cr scoring (0.68 0.12), respectively (1.32 0.12), (0.85 0.29), (0.49 0.06), compared with the control group patients score increased significantly, the contrast between the data set there is statistical significance; Observation group of patients on the right side of the MI/Cr, NAA/Cr, MI/NAA, Cho/Cr scoring (0.64 0.12), respectively (1.38 0.19), (0.83 0.24), (0.56 0.08), compared with control group score increased slightly, there are differences between the contrast between the data set, there is statistical significance.

Discussion: the application of MRI in the diagnosis of early alzheimer's disease can effectively improve the diagnosis rate and provide accurate diagnosis basis for the treatment and prevention of patients.

1. Introduction

With the continuous improvement of people's living standard, the number of patients with alzheimer's disease in the elderly population is on the rise, which poses a certain risk to the life and health of the elderly[1]. Alzheimer's disease has been become the senile dementia, belongs to a kind of lesions in the central nervous system disease, its morbidity hidden, and for a long time and not easy to be found, in old age dementia is one of the most common type. There are no effective drugs in clinical practice[2]. Therefore, early diagnosis and prevention of this chronic disease is very necessary.This paper takes one year to our hospital suffering from 40 patients with alzheimer's disease as investigation object, and on the nuclear magnetic resonance (NMR) in patients with early alzheimer's disease clinical diagnosis significance, is presently as follows the results reported.

2. Materials and methods.

2.1. General information

The 40 patients with alzheimer's disease admitted by our hospital from December 2015 to December 2016 were selected as the study subjects and treated as observation group. Another 40 patients were selected as control group. Among them, there were 25 males and 15 females in the observation group, with the age of 50 to 70 years old and the mean age (59 ± 5). In the control group, 28 male patients and 12 female patients were aged 55 to 80 years old, with an average age of (63 ± 6). All patients in the observation group were clinically diagnosed as early alzheimer's patients, all of whom were informed and signed the consent form. Exclusion criteria: persons with mental illness; Patients with systemic chronic disease; Patients with substantial brain lesions[3]. The gender, age and other general data of the two groups were compared, and there was no significant difference in the data comparison, no statistical significance (P > 0.05).
2.2. Detection method

The patients were scanned by superconducting nuclear magnetic resonance (NMR) instrument, and other factors affecting the test results were excluded[4]. Although there are some problems in nuclear magnetic resonance instrument in clinical detection, but the high signal intensity of nuclear magnetic resonance instrument, of brain tissue in the human body detection has high sensitivity, has certain forest farm application value. The mri machine was used to detect the brain excitation area of the patients, and the data detected by the computer system was analyzed and processed[5].

2.3. Observation indexes

The area of NAA, cholinergic complex (Cho/Cr), creatine and phospholipid creatine (Cr) and inositol (MI) were observed in bilateral hippocampal N- acetyl aspartate[6].

2.4. Statistical methods

All data of 80 patients were treated with SPSS 17.0 software, and two groups of measurement data were compared with (Mean ± SD). The counting data was expressed as (%), and the chi-square value test was adopted, and the difference was statistically significant when the comparison between the groups was shown (P<0.05).

3. Results

3.1 test results of the left hippocampal metabolite ratio

Comparison found that the observation group of patients with MI/Cr, NAA/Cr, MI/NAA, Cho/Cr scoring (0.68 0.12), respectively (1.32 0.12), (0.85 0.29), (0.49 0.06), compared with the control group patients score increased significantly, contrast between the data set there is statistical significance (P < 0.05), see table 1.

3.2 analysis of the ratio of the right hippocampal metabolites

Observation group of patients on the right side of the MI/Cr, NAA/Cr, MI/NAA, Cho/Cr scoring (0.64 0.12), respectively (1.38 0.19), (0.83 0.24), (0.56 0.08), compared with control group score increased slightly, there are differences between the contrast between the data set, there is statistical significance (P<0.05), are shown in table 2.

4. Discussion

Alzheimer's disease has become the senile dementia, belongs to a kind of lesions in the central nervous system disease, its morbidity hidden, and for a long time and not easy to be found, in old age dementia is one of the most common type[7]. At present the pathogenesis of the disease is not yet clear, and mainly to the new memory disorders in clinical, cognitive disorders, personality changes, degradation and clinical symptom such as mental illness, serious influence on the life and safety of life of old people[8]. This disease is divided into three stages, the first phase (1-3 years), and the main clinical manifestations are cognitive decline, forgetfulness and language communication. In the second stage (2-10 years), the clinical manifestations of memory loss and movement disorder were the main indications[9]. In the third period (8-12), the period was characterized by severe mental decline and physical activity. Therefore, in view of the early alzheimer's patients should take effective monitoring methods, in order to prevent alzheimer's disease progression, a drug treatment, improve patient's cognition, intelligence, sports, and other functions, improve the quality of life of patients[10].

Along with the advance of medical technology, nuclear magnetic resonance (NMR) diagnostic instrument as a new non-invasive examination means, caught the attention of the majority of doctors and patients, the diagnosis technology effectively applied to the diagnosis of early alzheimer's disease, not only improve the diagnosis rate of patients, and to achieve the goal of alzheimer's disease early detection, early treatment to provide diagnostic basis[11]. The specific detection method is as follows: the scanning of patients by superconducting nuclear magnetic resonance device will eliminate other factors that affect the test results. Although there are some problems in nuclear magnetic resonance instrument in clinical detection, but the high signal intensity of nuclear magnetic resonance instrument, of brain tissue in the human body detection has high sensitivity, have some applied value forest[12]. The application of NMR is used to detect the brain excitation area of the patients, and the data detected by the computer system is analyzed and

Table 1.
comparative analysis of the metabolic indexes of the left hippocampus in the two groups.

<table>
<thead>
<tr>
<th>Grouping</th>
<th>n</th>
<th>MI/Cr</th>
<th>NAA/Cr</th>
<th>MI/NAA</th>
<th>Cho/Cr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>40</td>
<td>0.68±0.12</td>
<td>1.32±0.12</td>
<td>0.85±0.29</td>
<td>0.49±0.06</td>
</tr>
<tr>
<td>Control</td>
<td>40</td>
<td>0.52±0.10</td>
<td>1.21±0.11</td>
<td>0.54±0.21</td>
<td>0.34±0.07</td>
</tr>
<tr>
<td>t</td>
<td>6.478 2</td>
<td>4.273 6</td>
<td>5.475 8</td>
<td>10.289 9</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>0.000 0</td>
<td>0.000 1</td>
<td>0.000 0</td>
<td>0.000 0</td>
<td></td>
</tr>
</tbody>
</table>
In the survey, choose to our hospital for one year of 40 cases of senile dementia patients and 40 cases of normal human subjects, nuclear magnetic resonance examination was carried out on the two groups, respectively, compared two groups of patients with bilateral hippocampal metabolic test value of test results. The study shows that contrast found that observation group of patients with MI/Cr, NAA/Cr, Cho/Cr scoring (0.68 ±0.12), respectively (1.32 ±0.12), (0.85 ±0.29), (0.49 ±0.06), compared with the control group patients score increased significantly, contrast between the data set there is statistical significance (P<0.05); Observation group of patients on the right side of the MI/Cr, NAA/Cr, MI/NAA, Cho/ Cr scoring (0.64 ±0.12), respectively (1.38 ±0.19), (0.83 ±0.24), (0.56 ±0.08), compared with control group score increased slightly, there are differences between the contrast between the data set, there is statistical significance (P<0.05). To sum up, in the early application of nuclear magnetic resonance (NMR) in diagnosing alzheimer’s disease, which can effectively improve the diagnosis rate, for patients to provide the accurate diagnosis, treatment and prevention of high clinical value.

Table 2. comparative analysis of the metabolic indexes of the right hippocampus in both groups.

<table>
<thead>
<tr>
<th>Grouping</th>
<th>n</th>
<th>MI/Cr</th>
<th>NAA/Cr</th>
<th>MI/NAA</th>
<th>Cho/Cr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>40</td>
<td>0.64±0.12</td>
<td>1.38±0.19</td>
<td>0.83±0.24</td>
<td>0.56±0.08</td>
</tr>
<tr>
<td>Control</td>
<td>40</td>
<td>0.52±0.10</td>
<td>1.21±0.12</td>
<td>0.71±0.21</td>
<td>0.34±0.07</td>
</tr>
<tr>
<td>t</td>
<td></td>
<td>4.858 6</td>
<td>4.784 4</td>
<td>2.379 8</td>
<td>10.289 9</td>
</tr>
<tr>
<td>P</td>
<td></td>
<td>0.000 0</td>
<td>0.000 1</td>
<td>0.019 8</td>
<td>0.000 0</td>
</tr>
</tbody>
</table>

Reference


[9] Lou Yan-fang, Zhang Xia-jun, Du Wen-yuan. The kidney and spleen party treatment the curative effect of mild and moderate alzheimer's disease and serum IL-1 beta, IL-6, the influence of the level of TNF alpha. Modern Combine Tradit Chin Western Med J 2017; 26(15): 1646-1649.


