Estudio clínico de la cápsula blanda de butilftalida combinada con inyección de vinpocetina en pacientes con infarto cerebral agudo

Clinical Study of Butylphthalide Soft Capsule Combined with Vinpocetine Injection in Patients with Acute Cerebral Infarction

Sha Chen, Lanjun Shang*, Qun Zhang, Xiaoying Liu
Department of Internal Neurology, Binzhou People’s Hospital, Binzhou, China

*Correspondence author: Lanjun Shang, Email: Shanglanjun123@163.com

Resumen
Este artículo analiza el efecto clínico de la cápsula blanda de butilftalida combinada con la inyección de vinpocetina en pacientes con infarto cerebral agudo. El grupo control se trató con cápsula blanda de butilftalida. El grupo de observación se basó en esto. En combinación con la inyección de vinpocetina, el índice de reología de la sangre, el puntaje NIHSS y el puntaje ADL antes y después del tratamiento se compararon entre los dos grupos. El efecto clínico y las complicaciones después del tratamiento. Antes del tratamiento, no hubo diferencias significativas en el índice de reología de la sangre, el puntaje NIHSS y el puntaje ADL entre los dos grupos (P> 0.05). No hubo diferencias significativas en la incidencia de complicaciones entre los dos grupos después del tratamiento (P> 0.05); Puntaje de NIHSS en el grupo de observación Los índices de hemorheología de los dos grupos fueron más bajos que los del grupo de control (P <0.05). La puntuación de ADL y la tasa efectiva clínica total del grupo de observación fueron más altas que las del grupo de control (P <0.05). La cápsula blanda de butilftalida combinada con la inyección de vinpocetina tiene un efecto significativo en pacientes con infarto cerebral agudo. Puede mejorar efectivamente la capacidad de autocuidado de los pacientes, promover la recuperación de la función nerviosa y mejorar la tasa efectiva total de tratamiento. Es digno de aplicación.

Palabras clave: infarto cerebral agudo; Cápsula blanda de butilftalida; Inyección de vinpocetina

Abstract
This paper analyzes the clinical effect of butylphthalide soft capsule combined with vinpocetine injection on patients with acute cerebral infarction. According to the random number table method, 40 patients were divided into two groups. The control group was treated with butylphthalide soft capsule. The observation group was based on this. Combined with vinpocetine injection, the blood rheology index, NIHSS score and ADL score before and after treatment were compared between the two groups. The clinical effect and complications after treatment. Before treatment, there was no significant difference in blood rheology index, NIHSS score and ADL score between the two groups (P>0.05). There was no significant difference in the incidence of complications between the two groups after treatment (P>0.05); NIHSS score in the observation group The hemorheology indexes of the two groups were lower than those of the control group (P <0.05). The ADL score and the total clinical effective rate of the observation group were higher than those of the control group (P<0.05). Butylphthalide soft capsule combined with vinpocetine injection has a significant effect on patients with acute cerebral infarction. It can effectively improve the patients’ ability of self-care, promote the recovery of nerve function, and improve the total effective rate of treatment. It is worthy of application.

Key words: Acute cerebral infarction; Butylphthalide soft capsule; Vinpocetine injection

1. Introduction
Acute cerebral infarction (ACI) is a common disease in neurosurgery, which mainly refers to the occurrence of atherosclerosis in the cerebral artery, resulting in the lack or sudden interruption of cerebral blood supply, which leads to brain tissue necrosis, with the characteristics of acute onset and high disability rate. The common clinical symptoms of ACI include headache, dizziness, hemiplegia, dysphagia, etc., which will cause coma, death and other serious harm to the life safety of patients [1]. Butylphthalide soft capsule is a new type of anti cerebral ischemia drug, which can reduce brain edema by inhibiting platelet aggregation and increasing blood flow in cerebral ischemic area. It has been found in clinical investigation that vinpocetine injection can promote the metabolism of brain in patients with ACI, thereby improving the sequelae of patients with ACI [2].
Based on this, this paper studies the clinical effect of butylphthalide soft capsule combined with vinpocetine injection on patients with acute cerebral infarction.

2. Materials and methods

2.1 General information
From September 2017 to September 2018, 80 patients with ACI received by our hospital were randomly divided into two groups, 40 in each group. In the observation group, there were 22 males and 18 females, aged 43-75 years, with an average age of (54.22 ± 1.63) years, 18 with diabetes, 12 with hypertension and 10 with coronary heart disease; in the control group, there were 21 males and 19 females, aged 44-76 years, with an average age of (54.37 ± 1.50), 17 with diabetes, 11 with hypertension and 12 with coronary heart disease. The general data of the two groups were compared (P > 0.05).

2.2 ACI diagnostic criteria
The acute stage of cerebral infarction was confirmed by MRI; the onset time was less than 72h; the patient had no symptoms such as vomiting and headache, and had consciousness disorder within 48h after onset; walking instability and sudden deafness; the onset was related to atherosclerosis; internal carotid system symptoms occurred. If any 3 or more items are met, ACI will be diagnosed.

2.3 Inclusion exclusion criteria
Inclusion criteria: ① Meet the relevant diagnostic criteria of acute cerebral infarction in International Journal of cerebrovascular disease [3]; ② Have no hematological disease or malignant tumor; ③ Have no mental disease or consciousness disorder; ④ Have complete clinical data and agree to participate in the study.

Exclusion criteria: ① Heart, liver and other important organ dysfunction; ② Anemia, hypotension and other systemic diseases; ③ Cerebrovascular malformation or brain tumor; ④ Allergic to the study drug; ⑤ Withdrawal from the investigation.

2.4 Method
The patients in the observation group were treated with butylphthalide soft capsule and vinpocetine injection, that is to say, the medical staff instructed the ACI patients to take 0.2g butylphthalide soft capsule (gyzz h20050299 stone medicine group enbip Pharmaceutical Co., Ltd.) orally, three times a day, intravenous drip 30g vinpocetine injection (gyzz h20133334 Suicheng Pharmaceutical Co., Ltd.) and 500ml normal saline once a day. In the control group, only the soft capsule of butylphthalide was taken orally, the usage was the same as that in the observation group. 7 days is a course of treatment, two groups of patients were treated for two courses. In addition, the doctors and nurses will give the patients regular drugs such as antihypertensive and hypoglycemic drugs for symptomatic treatment.

2.5 Observation indicators
① The hemorheology indexes of the two groups before and after treatment were compared. In the morning, when the patient was fasting, 6ml of venous blood was taken out and sent to the laboratory to detect the high cut whole blood viscosity, blood cell sedimentation rate and total cholesterol (TC). The reference values were 4.44-4.90mpa/s, 0-30mm / h and 2.8-6.2mmol/l respectively. ② NIHSS score and ADL score were used to compare the degree of neurological deficit and life activity ability of the two groups before and after treatment. NIHSS score was 42 in total, the higher the score was, the more serious the deficit was; ADL score was 100 in total, the higher the score was, the stronger the life ability was. ③ Compare the clinical effect of the two groups, evaluation criteria [4]: Cure: NIHSS score reduction ≥ 91%, no clinical symptoms; significant effect: NIHSS score reduction 46% ~ 90%, clinical symptoms significantly improved; effective: NIHSS score reduction 18% ~ 45%, clinical symptoms improved; ineffective: NIHSS score reduction ≤ 17% or increase, clinical symptoms no significant improvement or aggravation. Total effective rate = cure + effective + effective. ④ The complications of the two groups were recorded, including hypotension, pulmonary infection and transaminase elevation.

2.6 Statistical analysis
The data were included in spss22.0 software analysis, and the measurement data were ( x ± s), t-test; the count data were (%), chi square test, P < 0.05.

3. Results

3.1 Comparison of hemorheology indexes between the two groups
Before treatment, there was no significant difference between the two groups (P > 0.05); after treatment, the level of hemorheology indexes in the two groups was decreased and the observation group was lower than the control group (P < 0.05), as shown in Table 1.

**Table 1:** Comparison of hemorheological indexes between the two groups (\( \bar{x} \pm s \))

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>High cut whole blood viscosity (mPa/s)</td>
<td>Blood cell sedimentation rate (mm/h)</td>
</tr>
<tr>
<td>Observation group</td>
<td>40</td>
<td>10.14±1.25</td>
<td>42.20±1.52</td>
</tr>
<tr>
<td>Control group</td>
<td>40</td>
<td>9.97±1.30</td>
<td>42.13±1.40</td>
</tr>
<tr>
<td>t</td>
<td></td>
<td>0.596</td>
<td>0.214</td>
</tr>
<tr>
<td>p</td>
<td></td>
<td>0.552</td>
<td>0.830</td>
</tr>
</tbody>
</table>

3.2 Comparison of NIHSS score and ADL score between the two groups

Before treatment, there was no significant difference in NIHSS score and ADL score between the two groups (P > 0.05); after treatment, NIHSS score and ADL score of the two groups were improved, and NIHSS score of the observation group was lower than that of the control group, and ADL score of the observation group was higher than that of the control group (P < 0.05), as shown in Table 2.

**Table 2:** Comparison of NIHSS score and ADL score between two groups (\( \bar{x} \pm s, \text{min} \))

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NIHSS</td>
<td>ADL</td>
</tr>
<tr>
<td>Observation group</td>
<td>40</td>
<td>25.71±2.11</td>
<td>35.24±2.43</td>
</tr>
<tr>
<td>Control group</td>
<td>40</td>
<td>25.44±2.28</td>
<td>34.96±2.38</td>
</tr>
<tr>
<td>t</td>
<td></td>
<td>0.549</td>
<td>0.520</td>
</tr>
<tr>
<td>p</td>
<td></td>
<td>0.584</td>
<td>0.604</td>
</tr>
</tbody>
</table>

3.3 Comparison of clinical effects between the two groups

The total clinical effective rate of the observation group was higher than that of the control group (P < 0.05), as shown in Table 3.

**Table 3:** Comparison of clinical effects between the two groups [n (%)]

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Cure</th>
<th>Markedly effective</th>
<th>Effective</th>
<th>Invalid</th>
<th>Total effective rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation group</td>
<td>40</td>
<td>15 (37.50)</td>
<td>17 (42.50)</td>
<td>6 (15.00)</td>
<td>2 (5.00)</td>
<td>38 (95.00)</td>
</tr>
<tr>
<td>Control group</td>
<td>40</td>
<td>9 (22.50)</td>
<td>13 (32.50)</td>
<td>10 (25.00)</td>
<td>8 (20.00)</td>
<td>32 (80.00)</td>
</tr>
<tr>
<td>( x^2 )</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>10.285</td>
</tr>
<tr>
<td>p</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>0.001</td>
</tr>
</tbody>
</table>

3.4 Comparison of complications between the two groups

There was no significant difference in the incidence of complications between the two groups (P > 0.05), as shown in Table 4.

**Table 4:** Comparison of complications between the two groups [n (%)]

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Hypotension</th>
<th>Pulmonary infection</th>
<th>Transaminase rise</th>
<th>Incidence rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation group</td>
<td>40</td>
<td>2 (5.00)</td>
<td>1 (2.50)</td>
<td>1 (2.50)</td>
<td>4 (10.00)</td>
</tr>
</tbody>
</table>
4. Discussion

In recent years, the incidence of ACI in China has increased year by year, and its pathogenesis is complex, mainly related to diseases such as hypertension and diabetes, often accompanied by symptoms such as hemiplegia, disturbance of consciousness and weakness of limbs. Once there is a blood supply disorder in the brain tissue, it will lead to necrosis and softening of the brain tissue of the patient, which will cause damage to the brain function, affecting the limb's ability to move, and have a certain impact on the patient's quality of life and life and health [5]. Foreign scholars [6] found that giving patients with ACI reasonable drug treatment, such as butylphthalide soft capsules, vinpocetine injection, can effectively expand the blood vessels of the brain, promote blood flow, and accelerate the brain tissue by reducing blood viscosity. The uptake of glucose, in turn, increases the oxygen consumption of brain tissue and improves its metabolic capacity. Based on this, this article specifically analyzes the clinical effects of butylphthalide soft capsule combined with vinpocetine injection on patients with acute cerebral infarction. The content is as follows.

The results of this study found that patients with ACI were treated with butylphthalide soft capsule combined with vinpocetine injection. Before treatment, there was no significant difference in blood rheology index, NIHSS score and ADL score between the two groups. After treatment, the observation group The NIHSS score and blood rheology index were lower than the control group, and the ADL score of the observation group was higher than that of the control group. Analysis of the reasons can be seen, the main cause of ACI patients is abnormal blood rheology indicators and pathological changes of the cerebral vascular wall, showing that the patient's blood pressure is decreased, the blood flow in the brain is gradually reduced and the flow is slow, and the blood viscosity is continuously increased. Causes vasospasm, which leads to cerebral vascular occlusion or microthrombus formation, which ultimately causes ischemia and nerve function damage in the brain tissue of patients [7]. Foreign scholars [8] found that when ACI patients are onset, local ischemia and hypoxia in the brain tissue of patients will seriously damage the mitochondrial structure and function in tissue cells, causing abnormalities in the metabolism of tissue cells, thereby inducing multiple enzymatic reactions and aggravating cell damage. Sun Guixiang [9] and other scholars found that butylphthalide soft capsule is a new type of multi-target anti-cerebral ischemia drug with good anti-ischemic effect. When patients have pathological links such as ischemia and hypoxia in brain tissue, butylphthalide soft capsule can improve blood circulation of the brain by improving mitochondrial function in brain tissue cells, inhibiting the release of glutamate and increasing the activity of antioxidant enzymes. Promote the circulation of cerebral blood flow, prevent and reduce the area of cerebral infarction, and achieve the goal of reducing the level of blood rheology of patients. Moreover, butylphthalide soft capsule can promote the recovery of nerve function by inhibiting the apoptosis of nerve cells. Chen Guangsheng [10] and others have shown that butylphthalide soft capsule has a good clinical effect in the treatment of acute cerebral infarction, which can significantly improve the neurological deficit, improve the quality of life and reduce the blood viscosity, which is consistent with the results of this study. Some foreign scholars [11] found that in the oleander family, a vinpocetine alkaloid was extracted, which promotes the metabolism of brain tissue. Vinpocetine can reduce the cerebral vasculature by inhibiting the dependence of smooth muscle calcium ions on phosphodiesterase in the cerebral blood vessels, thereby increasing the blood viscosity of the patient by inhibiting platelet aggregation. Red blood cells are deformed, and the ability of brain tissue to absorb glucose is increased, which increases the brain oxygen consumption and brain metabolism.

The results of this study found that the total effective rate of the observation group was higher than that of the control group, and there was no significant difference in the incidence of complications between the two groups. Analysis of the reasons can be seen, the treatment of ACI patients with butylphthalide soft capsules can significantly improve the blood circulation of patients with brain tissue, reduce the high rhesus whole blood viscosity, blood cell sedimentation rate and other blood rheology indicators; and vinpocetine injection can promote brain tissue takes up glucose and accelerates metabolism. The combined use of two groups of drugs can effectively improve the reduction of neurological deficits and improve the body's ability to move. Xiong Wenli [12] and other studies have shown that the NIHSS score of the experimental group is higher than that of the control group, which can promote the recovery of neurological function, which is consistent with the study. Giving patients butylphthalide soft capsules can effectively prevent the occurrence of hypotension complications by improving blood circulation in the brain and promoting blood circulation. Gao Jiangfei [13] and others in the study of butylphthalide soft capsules in the treatment of ACI patients found that after treatment, the total effective rate of the treatment group was higher than the control group. Moreover, the treatment with vinpocetine injection can inhibit the activity of transaminase during the process of accelerating brain metabolism, thereby improving the clinical treatment effect of patients. The results of Feng Shiting et al [14]
showed that the total clinical effective rate of the observation group was significantly higher than that of the control group, which was consistent with the study, which further indicated that the above two drugs are important for improving the clinical symptoms of patients. Moreover, the combination of butylphthalide soft capsule and vinpocetine injection can promote blood circulation and brain metabolism, and effectively protect the nerve function of ischemic tissue. The combination of the two has a synergistic effect and does not increase the incidence of adverse reactions. Wang Hong [15] and other studies have shown that the total effective rate of the treatment group is higher than that of the control group, and there is no significant difference in the adverse reaction rate between the treatment group and the control group, which is consistent with the results of this study, further indicating that the butylphthalide soft capsule and The combination of vinpocetine injection can improve the total effective rate of treatment and does not increase the incidence of adverse reactions.

5. Conclusion

In summary, the treatment of ACI patients with butylphthalide soft capsule combined with vinpocetine injection can effectively reduce the level of hemorheology, improve the patient's neurological function, improve their self-care ability, and thus improve the clinical treatment effect. Moreover, the combination of drugs does not increase the probability of complications, and it is safe and worthy of application.

References