

# Clinical Observation of Benphthalein Soft Capsule Combined with Edaravone in the Treatment of Cerebral Infarction

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**Abstract:** It is aimed to observe the application effect of benphthalein soft capsules and edaravone in cerebral infarction match. The thesis is developed with the method that a total of 100 patients with cerebral infarction from January 2019 to January 2020 were selected as the research object, and were randomly divided into two groups. The control group was treated with edaravone, and the experimental group was treated with benphthalein soft capsules and edaravone, and the curative effect was analyzed. It turns out that the total effective rate of the experimental group (94.00%) was higher than that of the control group (76.00%), and there was a significant difference between the two groups ( $P < 0.05$ ). The scores of neurological deficit in both groups were significantly lower than those before treatment, but the neurological deficit in the experimental group was significantly lower than that in the control group after treatment, with significant difference ( $P < 0.05$ ). The incidence of adverse reactions was 4.00% in the experimental group and 10.00% in the control group, and there was no significant difference between the two groups ( $P > 0.05$ ). To draw a conclusion, benphthalein soft capsule combined with edaravone can obviously improve the quality of life of patients with cerebral infarction, which is a method worthy of clinical application.

**Keywords:** Benphthalein soft capsules; Edaravone; Cerebral infarction; Clinical value

## 1. Introduction

Cerebral infarction is a common acute and severe disease in clinic, which has sudden onset and rapid progress, leading to high mortality and disability rate. According to clinical research, more than 70% patients with cerebral infarction will have sequelae after treatment, such as hemiplegia, which has a great impact on the healthy life of middle-aged and elderly people. Ultra-early thrombolysis within 5 hours after cerebral infarction has a high success rate, but this method requires high conditions and complicated operation, which is easy to cause important organ bleeding and intracranial hemorrhage [1]. At present, neurological drugs such as edaravone are mostly used in clinic. In order to improve the clinical efficacy of cerebral infarction, this topic intends to study the synergistic effect of edaravone and benphthalein ointment in cerebral infarction.

## 2. Data and methods

### 2.1 General information

100 patients with cerebral infarction from January 2019 to January 2020 were randomly divided into two groups. There were 25 males and 25 females in the control group, aged from 23 to 74 years, with an average age of (44.12 7.41) years. There were 27 males and 23 females in the control group, aged from 24 to 75 years, with an average age of 45.25 7.58 years. By comparison, there was no significant difference between the two groups ( $P > 0.05$ ).

The selection criteria are: a. According to the diagnostic criteria of "Guidelines for the Prevention and Treatment of Cerebrovascular Diseases in China"; b. It's the first onset, and the onset time does not exceed 48 hours; c. Family members or patients who participated in the study agreed to participate.

Exclusion criteria: a. Severe renal failure and cardiopulmonary insufficiency; b. Suffering from serious systemic diseases at the same time; c. Combined with serious cognitive impairment; D: It is difficult for patients and family members to cooperate actively.

## 2.2 Methods

The control group was given edaravone, and 30 mg edaravone was given intravenously after adding normal saline. The experimental group was given the compatibility of benphthalein soft capsule and edaravone, and the dosage was the same as that of the control group. Benphthalein soft capsule 0.5 g, twice a day, both groups of patients completed the above treatment within 3 weeks.

## 2.3 Observation indicators

Efficacy (cure: NIHSS neurological deficit score decreased from 85% to 100%, and the disability grade was 0; Remarkable effect: after the treatment, the neurological deficit index of NIHSS patients decreased, ranging from 50% to 85%, and the disability grade ranged from 1 to 3; Effective: the neurological deficit score of NIHSS decreased by 30%~50%; Invalid: not up to standard; The curative effects of the two groups of patients were compared, and the curative effects of the two groups of patients were compared respectively [2].

## 2.4 Statistical processing

The data were statistically analyzed by SPSS25.0, and the counting data of the effective rate of treatment and the incidence of side effects were tested by chi-square test, neurological deficit score and other measurement data by t test. When  $P < 0.05$ , there was significant difference between the two groups.

## 3. Results

### 3.1 Efficacy

The total effective rate of the experimental group (94.00%) was higher than that of the control group (76.00%), and there was a significant difference between the two groups ( $P < 0.05$ ); See Table 1.

Table 1 Efficacy [n(%)]

Group	case	Invalid	Effective	Obvious Effect	Heal	Total Effect
Control		12(24.00)	13(26.00)	13(26.00)	12(24.00)	47(94.00)
Experiment		3(6.00)	12(24.00)	16(32.00)	19(38.00)	38(76.00)
$X^2$						6.3529
P						0.012

### 3.2 Neurological deficit score

After treatment, the scores of neurological deficits in both groups decreased, and the scores of neurological deficits in the experimental group were significantly lower than those in the control group ( $P < 0.05$ ).

Table 2 neurological deficit score (x+s)

group	Number of cases	Before treatment (score)	After treatment (score)
control group	50	31.55±5.10	25.11±3.25
Experimental group	50	32.10±5.22	17.23±2.75
t		0.5529	13.0880
P		0.5820	0.0001

### 3.3 Adverse reactions

The incidence of adverse reactions was 4.00% in the experimental group and 10.00% in the control group, and there was no significant difference between the two groups ( $P > 0.05$ ), as shown in Table 3.

Table 3 Adverse Reactions [n(%)]

group	Number of cases	anorexia	feel sick	other	amount
control group	50	1(2.00)	2(4.00)	2(4.00)	5(10.00)
Experimental group	50	1(2.00)	0(0.00)	1(2.00)	2(4.00)
$\chi^2$					1.3825
P					0.240

#### 4. Conclusion

Cerebral infarction is a very serious and acute disease in clinic. If it is not treated in time, it is likely to cause the patient's death and even leave sequelae, which will have a great impact on the patient's quality of life. There are many reasons for cerebral infarction, mainly due to the blood supply disorder of the brain, which in turn causes hypoxic damage to the brain tissue. Therefore, in the treatment of cerebral infarction, we must follow the basic principles of protecting brain cells, eliminating free radicals and improving microcirculation. Moreover, the development of cerebral infarction is very fast, and most of them are middle-aged and elderly patients, and they are often accompanied by other basic diseases, so it is difficult to treat them effectively. After cerebral infarction, due to the massive generation of free radicals, brain function will be damaged. Therefore, in the treatment of cerebral infarction, the first thing to do is to improve blood supply to brain tissue and remove free radicals. After cerebral infarction, the blood circulation of the brain will be affected, resulting in ischemia, hypoxia and injury of brain tissue. Patients will suffer from dysphagia, hemiplegia and other symptoms. Clinically, brain cells can be protected mainly by improving the blood supply of brain tissue. Benphthalein soft capsules and edaravone are the most popular treatment methods at present. Benphthalein can prevent damaged brain cells and increase the function of mitochondria, thus protecting hypoxic brain cells, and at the same time, it can reduce the release of  $Ca^{2+}$  and Glu in cells, thus reducing cell apoptosis. Edaravone is a free radical scavenger, which can remove hydrogen peroxide from cell membrane, increase the blood and oxygen supply of brain tissue, and prevent the continuous damage of free radicals to brain cells. Edaravone can prolong the time of thrombolysis and prevent the progress of stroke. Edaravone is a small molecule drug which can improve microcirculation.

Benphthalein is the main component of Benphthalein Soft Capsule (TNF- $\alpha$ ), which can effectively block many pathological links of brain injury, has good anti-ischemia, and can effectively improve the central nervous system function of patients. Edaravone is a brain protective agent, and its active ingredient is N- acetylaspartic acid, which can effectively scavenge free radicals, inhibit lipid peroxidation and prevent nerve cells, vascular endothelial cells and brain cells from oxidative damage. Benphthalein soft capsule combined with edaravone in patients with cerebral infarction can enhance its protective effect on cerebral ischemia, effectively improve blood flow and microcirculation in ischemic brain area, and reduce brain edema, thus improving the curative effect [3]. Benphthalein soft capsule is a new anti-cerebral infarction drug, which has a good protective effect on mitochondria in brain tissue, can improve blood flow, energy metabolism and microcirculation in brain tissue, and can effectively inhibit cell apoptosis in brain tissue, which has a good therapeutic effect in brain tissue and can well control the volume of cerebral infarction. The main effective component of benphthalein soft capsules is dl-3- n-benphthalein, which can promote the synthesis of prostaglandin and inhibit the production of thromboxane A<sub>2</sub>, and has obvious effects of preventing thrombosis, antiplatelet and inhibiting vasoconstriction [4]. Edaravone is a kind of radical scavenger with strong activity, which can inhibit the peroxidation, delay the apoptosis of nerve cells, reduce brain edema, and reduce the penumbra of blood vessels. At the same time, Edaravone has a small molecular volume, can quickly penetrate the blood-brain barrier, and has a good curative effect on brain diseases. Moreover, it is a very safe drug. Consistent with the research results of Yu Yan and others, our research group found that the total effective rate after treatment in the study was higher, the side effects were less, and the curative effect was significantly better than that of the control group. This study shows that the total effective rate of adding butylphthalide soft capsules in the experimental group with edaravone alone is 94.00%, which is higher than that in the control group with edaravone alone, which is 76.00%. The scores of neurological deficits in both groups decreased after rehabilitation training, but in rehabilitation training, the experimental group was significantly lower than the control group. The incidence of ADR in the experimental group was 4.00%, and that in the control group was 10.00%. There was no significant

difference between the two groups. Benphthalein soft capsules combined with edaravone have obvious curative effect. Edaravone is a common free radical scavenger, which can effectively scavenge hydroxyl free radicals in brain tissue, improve and inhibit the peroxidation of brain cells and nerve cells, effectively delay the occurrence of brain edema, enlarge the penumbra of vascular blood, and make nerve cells apoptosis later [6]. Edaravone is a drug with very small molecular weight, which can quickly penetrate the middle cerebral artery of patients and achieve the purpose of treatment. Butylphthalide soft capsule, as a new drug for treating cerebral infarction, is widely used in clinic, which has a certain protective effect on microcirculation after cerebral infarction and has the effect of treating neurological deficit of patients. With edaravone, the effect is better [5].

To sum up, the application of butylphthalide soft capsule and edaravone in cerebral infarction can not only improve patients' self-care ability, but also promote the recovery of patients' neurological function and improve their quality of life, which has good clinical application value.

## References

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