Treatment and Clinical Study of Hypertensive Patients

Xiangyi Zhang

Yunnan Medical Health College, Kunming 650000, Yunnan, China

Abstract: Objective: This study aims to investigate the treatment and clinical effect of hypertensive patients, and to compare the differences between personalized treatment and conventional treatment. Methods: 100 hypertensive patients from August 2022 to April 2023 were randomly sampled and equally divided into observation and control groups. The control group received traditional conventional therapy, and the observation group received personalized treatment. Statistical analysis of the data was performed using SPSS22.0. Results: The observation group showed advantages in drug use, changes in blood pressure level, incidence of drug side effects, mood control and medication compliance. The medication effect in the observation group was significantly better than the control group, with a large reduction in blood pressure levels and a relatively low incidence of drug side effects. Emotional control rate and medication compliance were also higher in the observation group. Conclusion: Personalized treatment is important for hypertensive patients. Through the individualized treatment plan, the treatment effect and the quality of life of the patients can be effectively improved. Therefore, in the treatment of hypertension, the individual differences of patients should be fully considered, and personalized treatment plans should be developed to achieve better treatment results.

Keywords: hypertension, personalized treatment, conventional treatment, change in blood pressure level, drug compliance

1. Introduction

Hypertension is a common chronic disease and is considered to be one of the main risk factors for cardiovascular and cerebrovascular diseases. [1]If hypertension is not effectively treated and controlled, it will increase the risk of cardiovascular and cerebrovascular complications, such as heart disease, stroke, kidney disease, and so on.[2] The treatment of hypertensive patients generally includes two aspects: non-drug treatment and drug treatment. Non-pharmacological treatment includes dietary adjustment, physical exercise and stress reduction.In clinical research, numerous studies have been conducted on the treatment and management of hypertension, including evaluating the efficacy and safety of different drug treatments through randomized controlled trials, developing personalized treatment plans based on individual characteristics by genetic testing and biomarkers; studying whether the combined application of different drugs can improve the safety and tolerance; and assessing the impact of non-drug treatment on reducing blood pressure and improving cardiovascular and cerebrovascular health.

The goal of these clinical studies is to optimize the treatment strategies of hypertensive patients, improve the treatment effect and the quality of life of the patients, and reduce the risk of cardiovascular and cerebrovascular complications. [3] However, the condition of each patient varies, and the treatment plan needs to be determined according to the guidance of the physician and the specific circumstances of the patient. Therefore, in the treatment and clinical study of hypertensive patients, this paper chooses personalized treatment and explores the effect of personalized treatment in the treatment of hypertensive patients.

2. Study data and methods

2.1 General information

The study in this paper mainly used the random sampling method, and the study subjects selected in this paper were hypertensive 120 patients from January 2023 to September 2023. Then it is then evenly divided into two groups, the control group and the observation group, and the control group implements conventional treatment, and the observation group implements personalized treatment. Specific details of patients are shown in Table 1.

Table 1. General data of patients with hypertension

Group	n	Male / Female (n)	Age (years, $\overline{X} \pm s$)	Mean age (years, $\overline{X} \pm s$)
Observation group	60	37/23	30-60	48.9±11.2
Control group	60	39/21	31-61	48.9±11.6
P		> 0.05	> 0.05	> 0.05

This is a table of general information on hypertensive patients, divided into observation and control groups, each with 60 participants. In the observation group, there were 37 men and 23 women; in the control group, there were 39 men and 21 women. The age range for the observation and control groups was 30 to 60 years and 31 to 61 years, respectively. The mean ages of the observed and control groups were 48.9 ± 11.2 years and 48.9 ± 11.6 years, respectively. This means that the mean age of both groups was similar. There are three P-values in the table, corresponding to sex, age, and mean age. All these P-values were greater than 0.05. which means that there was no statistically significant difference between the observation and control groups in terms of sex, age and mean age, indicating that the general data profile of the two groups could not be compared.

Conditions for inclusion: 1. Participants have been diagnosed as hypertensive by a professional doctor. 2. Participants need to express a desire to participate in treatment and follow-up and to be able to meet their obligations during the study. 3. Participants need to have sufficient cognitive ability to understand the purpose, process, risks and benefits of the study and to sign an informed consent form.

Exclusion criteria: 1. Exclude patients with other serious diseases that may affect the study results or interfere with the treatment effect. 2. Individuals with allergic reactions or adverse reactions to the treatments used in the study. 3. Patients who have experienced serious cardiac events.

2.2 Experimental method

This study aimed to investigate the treatment and clinical effects of hypertensive patients. To achieve the study objectives, a controlled trial will be used and eligible patients will be randomly divided into experimental and control groups. The control group will receive traditional conventional treatment, and the experimental group will receive personalized treatment measures, including the following aspects:

Pharmacological intervention: The treatment of hypertension usually requires pharmacological intervention, including diuretics, ACE inhibitors, ARBs, calcium channel blockers, and β blockers. In personalized treatment, doctors will choose drugs based on the patient's specific circumstances (such as age, gender, race, complications, lifestyle, etc.) and their personal preferences.At the same time, doctors and caregivers regularly monitor patients' blood pressure levels to ensure treatment results.

Dietary regimen: Doctors and caregivers will advise patients to reduce sodium intake because sodium is an important factor in hypertension. Doctors and caregivers also advise patients to increase their potassium intake because potassium can help lower blood pressure. In addition, physicians and caregivers will advise patients to increase their dietary fiber intake, as this helps to lower cholesterol levels and weight control. Physicians and caregivers will tailor their diet to their physical condition and preferences.

Personalized exercise plan: Before the patients in the experimental group start the personalized exercise program, the physical condition of the first experimental group is fully evaluated. Considering the individual differences of each patient, develop a personalized exercise plan. This included the patient's physical fitness level, exercise history, health status, and any potential exercise restriction factors.[4] Select the appropriate exercise type according to the patient's preference and physical condition. Develop the appropriate exercise intensity and duration to ensure that the treatment can be achieved and adapt to the patient's physical condition. This may involve adjusting the exercise schedule according to the heart rate, perceived exercise intensity, or other physiological measures. Provide patients with health education about the positive effects of exercise on the treatment of hypertension and the importance of proper exercise.[5]

Lifestyle intervention: For the patient's weight status, personalized treatment includes setting reasonable weight management goals and providing appropriate dietary and exercise advice to achieve or maintain a healthy weight level. Patients in the experimental group received personalized advice on coping with stress, such as relaxation techniques, meditation, or psychological support, to reduce the overall stress level. Personalized treatment involves sleep management recommendations to ensure that patients receive adequate high-quality sleep.[6] Patients in the experimental group will undergo regular health assessments to ensure that the lifestyle intervention still meets their health needs. When necessary, the intervention program will be adapted to accommodate the patient's life changes and disease progression.

2.3 Observation indicators

When evaluating the treatment and clinical effects of hypertensive patients, the observation indicators cover multiple aspects, including drug use comparison, mood control, and medication compliance.

(1) Comparison of drug use: In the course of treatment, it is necessary to compare the experimental group with the control group to determine which treatment is more effective. For example, the change in blood pressure level and the incidence of drug side effects can be compared between the two groups.

(2) Emotional control: People with high blood pressure often have emotional problems such as anxiety and depression, which will affect their treatment effect. Therefore, the emotional state of the patients needs to be considered when evaluating the treatment effect. For example, scales can be used to measure patient emotional status and compare emotional control between the experimental and control groups.

(3) Drug compliance: Drug therapy is one of the most important means of hypertension treatment, but many patients are difficult to adhere to the medication due to various reasons. Therefore, patient medication adherence needs to be considered when evaluating treatment efficacy. For example, questionnaires can be used to measure patient adherence to treatment options and to compare compliance between the experimental and control groups.

2.4 Research and count statistics

Statistics were performed with SPSS22.0, With the $\pm$ s-test and the t-test, $P<0.05$ indicates a difference was significant.

3. Bear fruit

3.1 Comparison of drug use

Table 2. Comparison of drug use ($\overline{X}$ ±s, %)

Group	n	Changes in blood pressure levels	Incidence of drug side effects	P
Observation group	60	9.2±1.3	4%	P < 0. 05
Control group	60	7.8±1.0	8%	P < 0. 05

In this randomized controlled trial, the control group received traditional conventional treatment, while the experimental group received personalized treatment measures. There were statistically significant differences in the changes in blood pressure levels and the incidence of drug side effects between the two groups of patients.

The change in blood pressure level in the control group was 9.2 ± 1.3, and the incidence of drug side effects was 4%. The change in blood pressure level in the experimental group was 7.8 ± 1.0, and the incidence of drug side effects was 8%. A P-value less than 0.05 indicates a statistically significant difference between the two groups. Therefore, it can be concluded that personalized treatment measures have more advantages in the treatment and clinical efficacy of hypertension patients compared to traditional conventional treatment.

3.2 Comparison of emotional control

Table 3. Comparison of emotional control ($\overline{X}$ ±s, %)

Group	n	Anxiety Scale Score	Depressive Scale Score	Emotional control rate
Observation group	60	5.2±1.1	4.8±1.2	80%
Control group	60	7.3±1.4	6.9±1.5	70%
P		P < 0. 05	P < 0. 05	P < 0. 05

Based on the data in Table 3, the following conclusions can be drawn: there were significant differences between the experimental and control groups in the anxiety scale and the depression scale. The experimental group scale scored 5.2 ± 1.1 and the depression scale 4.8 ± 1.2, while the control group scored 7.3 ± 1.4 and the depression scale 6.9 ± 1.5. This indicates that the experimental group had a higher rate of emotional control and was better able to control their emotions. A P-value less than 0.05 indicates a statistically significant difference between the two groups. Therefore, it can be concluded that personalized treatment measures have better emotional control in hypertensive patients and can be used as a supplement to conventional treatment.

3.3 Comparison of medication compliance

Table 4. Medication compliance (sub, $\overline{X}\pm s$)

Group	n	Compliance
Observation group	60	58.3±2.5
Control group	60	41.6±2.5
P		P < 0.05

Based on the data in Table 4, the following conclusions can be drawn: there are significant differences in drug compliance between the experimental and control groups. Compliance in the experimental group was 58.3 ± 2.5, compared with 41.6 ± 2.5 in the control group. This indicates that the experimental group had a better medication compliance and a better adherence to the doctor's advice for treatment. A P-value less than 0.05 indicates a statistically significant difference between the two groups. Therefore, it can be concluded that personalized treatment measures have better results for drug compliance in patients with hypertension and can be used as a supplement to conventional treatment options.

4. Research and analysis

In recent years, the prevalence of hypertension has gradually increased and become a global public health problem. There are obvious differences in hypertension between different regions and different populations, which may be related to many factors such as genetics, environment and lifestyle. Current treatment for hypertension mainly includes both pharmacological and non-pharmacological treatment, but there are differences in patient response to different treatment options. [7]Some patients may work better to one class of drugs and less responsive to another. Therefore, finding a more effective personalized treatment scheme has become an important direction of research. To evaluate the treatment effect in hypertensive patients, a clinical trial was conducted with the following analysis:

The 100 patients with hypertension were divided into observation and control groups by randomization. The observation group received personalized treatment, and the control group received conventional treatment. The results showed that in the aspect of drug use, the change in the observed group was significantly lower than the control group, and the incidence of drug side effects was slightly higher than the control group. The difference was statistically significant (P<0.05). Regarding emotion control, both the anxiety and depression scale scores of the observation group were significantly lower than those of the control group, indicating that personalized treatment had a positive effect on improving emotional control in patients. The emotional control rate was 80% in the observation group and 70% in the control group, and the difference was statistically significant (P<0.05). In terms of medication compliance, the medication adherence score in the observation group was significantly higher than that of the control group (P<0.05), indicating that personalized treatment can improve patient medication compliance. In conclusion, personalized treatment has shown better therapeutic results in hypertensive patients. An individualized treatment regimen can effectively reduce blood pressure levels, improve mood control and improve medication adherence.

5. Conclusion

According to the study results, the observation group was better to the control group in terms of drug treatment effect, mood control and medication compliance. The mean blood pressure level changed significantly less in the observation group than in the control group, and the incidence of drug side effects was relatively low. Meanwhile, the emotional control rate and medication compliance were higher in the observation group than in the control group. This indicates that personalized treatment can better meet the needs of patients and improve their treatment effectiveness and quality of life. Therefore, for patients with hypertension, the individual differences of patients should be taken into account in the treatment process, and personalized treatment plans should be developed to achieve better treatment results.

References

[1] Chen Ping, Qin Youjuan. Clinical analysis and treatment study of hypertensive patients with peptic ulcer disease [J]. The Electronic Journal of Cardiovascular Diseases of Integrated Traditional Chinese Medicine and Western Medicine, 2022, 10(07): 37-39+101.
[2] Song Lili. Observe and analyze the clinical manifestations and treatment methods of elderly hypertensive patients [J]. World's Latest Medical Information Abstract, 2019, 19(62): 42-43.

[3] Yang Baolin. Study on the clinical treatment of hypertension in the elderly [J]. Electronic Journal of Clinical Medical Literature, 2019, 6(45): 20-21.

[4] Zhao Ming. Clinical treatment of amlodipine in patients with hypertension and atrial fibrillation [J]. The World's Latest Medical Information Abstract, 2018, 18(95): 112+119.

[5] Zuo Xiaoxiao, Wu Wensheng. Clinical research progress on the treatment of elderly hypertension with integrated Traditional Chinese and Western medicine [J]. Clinical Journal of Traditional Chinese Medicine, 2018, 30(10): 1945-1948.

[6] Guo Zhen. Progress in community care intervention for elderly hypertensive patients [J]. The Electronic Journal of Practical Clinical Nursing, 2018, 3(28): 192-194.

[7] Wang Aiguo. Analysis of the clinical characteristics and treatment methods of elderly hypertensive patients [J]. World's Latest Medical Information Abstract, 2018, 18(01): 48+50.