Comparison of the Efficacy and Safety of Dopamine, Norepinephrine and Epinephrine in the Treatment of Pulmonary Hypertensive Crisis under Hemodynamic Monitoring

Informed Consent Form

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Informed Consent Form

We invite you to participate in the "Optimal Drug Treatment Strategy for Pulmonary Hypertensive Crisis Under the Guidance of Hemodynamics: a Comparative Study of the Efficacy and Safety of Dopamine, Norepinephrine and Epinephrine in the Treatment of Pulmonary Hypertensive Crisis under the Guidance of Hemodynamics" sponsored by the National Major Project of Science and Technology of the Ministry of Science and Technology of the People's Republic of China. This study has been approved by the Ethics Committee of Fuwai Hospital, Chinese Academy of Medical Sciences (Tel: 010-88396281, 010-88396282). Please read the instructions carefully to understand your rights and obligations in the study and to clarify the nature, content and risks of the study. Participation in this study is completely voluntary, whether or not to participate in this study will not affect your treatment in our hospital and other legitimate rights and interests. When the researcher explains and discusses the Informed Consent Form to you, you can always ask questions and have the researcher explain to you what you do not understand. You have plenty of time to discuss with your family, friends, and doctor whether to participate in the study. Please make a decision after thorough consideration.

If you are currently participating in other clinical studies, please let the investigators know.

This study was a multicenter study. The team leader was Fuwai Hospital of Chinese Academy of Medical Sciences, and the project leader was chief physician Gu Qing from the Emergency department and emergency ward of Fuwai Hospital of Chinese Academy of Medical Sciences.

1. Why is this study conducted?

The condition of patients with pulmonary hypertension crisis is dangerous. Either acute pulmonary hypertensive crisis induced by various stimuli, or pulmonary hypertension crisis in patients with chronic pulmonary hypertension will lead to the

rapid deterioration of the condition and the difficulty of treatment. Patients with pulmonary hypertension crisis are accompanied by hemodynamic instability, hypotension and even shock. Vasoactive drugs, vasopressor drugs (such as adrenaline or dopamine, norepinephrine) and other measures to increase cardiac contractility, and measures to maintain blood pressure and cardiac output are effective measures to rescue pulmonary hypertension crisis. Dopamine, norepinephrine and adrenals are commonly used in the treatment of hypotension and shock. The aim of this study is to compare the efficacy of dopamine, norepinephrine and epinephrine in the treatment of patients with pulmonary hypertension crisis under the guidance of hemodynamics, so as to improve the treatment ability of patients with pulmonary hypertension crisis and reduce mortality in China.

2. What is included in the study?

The investigator will explain the study process to you in detail. When you fully understand the explanation given by the investigator, you can sign this Informed Consent Form. After you agree to participate in this study and sign the Informed Consent Form, you may be randomly assigned to dopamine, norepinephrine, or epinephrine treatment. You are assigned to dopamine, norepinephrine, or epinephrine in a 1:1:1 ratio. Doctors will adjust drug dosage according to hemodynamic parameters, blood pressure and heart rate. The duration of study drug treatment is from the initial administration of dopamine, norepinephrine, and epinephrine to 72 hours of treatment. The researchers will collect your vital signs, hemodynamic parameters, arterial blood gases, BNP or NT-proBNP, and echocardiography during the treatment. With the exception of the study medication, all diagnostic tests and treatments will be performed according to routine medical practice. After discharge, the patients will be followed up every 3 months by outpatient or inpatient or telephone for a total of 3 years. During this period, the medication will be recorded, and the condition and treatment will be evaluated.

3. Who will be invited to participate in the study?

Inclusion criteria: patients over 18 years old with pulmonary hypertension crisis

who are diagnosed and treated in the hospital at the same time.

Exclusion criteria: unable to sign informed consent; Patients who are diagnosed only in the hospital and do not receive treatment.

If you meet the following criteria, you will be invited to participate in this study, voluntarily participate in this study, and sign an Informed Consent Form.

4. Study duration and number of participants

This study is a multicenter clinical study. We plan to recruit 75 study participants at three study sites, of which 59 are planned to be enrolled at our center. The planned duration of the study is from February 2025 to December 2028.

5. How will participating in this study affect your daily life?

To participate in this study, your relevant auxiliary examination indicators in the routine medical process (blood routine, blood biochemistry, blood gas analysis, N-terminal pro-brain natriuretic peptide/N-terminal brain natriuretic peptide, electrocardiographic results, chest X-ray results, echocardiography results, floating-catheter results, 6-minute walk distance results, and cardiopulmonary exercise test results) and medication assessment measures will be collected. In this study, the disease status of you or your guardian will be followed up every 3 months for a total of 3 years by outpatient or inpatient or telephone follow-up after discharge.

6. Is there a direct benefit from participating in the study?

You will not benefit directly from participating in this study, and you may or may not have an improvement in your condition, but you may have increased accuracy in diagnosis, assessment of your condition, and prognosis, as well as guidance during follow-up. The detailed description of the research content can help researchers understand their own condition and treatment plan, and alleviate the fear, anxiety, uneasiness and other negative emotions caused by the unknown nature of the disease. The diagnosis and treatment information and research results obtained in this study will help to carry out targeted management of patients with pulmonary hypertension crisis and improve the level of diagnosis and treatment.

7. Are there other treatment options if you do not enroll in this study?

You may choose not to participate in this study without any adverse effect on your access to usual care. You can discuss other treatment options with your doctor to decide whether to participate in this study. However, since patients with pulmonary hypertensive crisis often require vasoactive therapy, even if you do not participate in the study, your study physician will inform you that you may also need vasoactive therapy, such as dopamine, norepinephrine, or epinephrine, as part of subsequent therapy.

8. What are the costs and compensation for participating in the study?

The study is conducted at no additional cost to the study participants. Study medications (dopamine, norepinephrine, epinephrine) used for study participation are provided free of charge by study physicians for up to 72 hours. Although patients with pulmonary hypertensive crisis require regular echocardiography to assess changes in the patient's condition as part of routine care, the study participants will be compensated for four echocardiograms at randomization and at 24, 48, and 72 hours after treatment, free of charge. This study does not provide transportation costs, loss of work and other related compensation, no remuneration.

9. Treatment of study-related damages

This study will generally not cause harm to you or your guardians. If your health is compromised in connection with the study, please contact the research doctor Li Wen at 15101515761. We will take necessary medical measures in time and determine the compensation or compensation liability according to the relevant laws of our country.

10. Will your information be kept confidential?

Your information will be kept strictly confidential during the study. Your personal information will be kept confidential when your data or those under your custody are used in this trial, and all data will be stored and used for research

purposes only.

Information in the research database is strictly desensitized to eliminate personally identifying characteristics, and information that may identify you will not be disclosed to anyone other than the researcher unless you have given your permission.

Inspectors from health authorities, ethics committees, and investigators can access the original medical records of subjects to verify the process and data of clinical trials, provided that confidentiality and relevant regulations are not violated.

If the results of the study are published, your personal information or the personal information of your guardianship will not appear in any public medical records and publications, and we will not disclose this information to any person or institution.

11. What are your rights and interests during the research?

Your participation in this study is voluntary, and whether you agree to participate in this study or not will not affect the routine clinical treatment measures you are entitled to during your visit in our hospital. You may refuse to participate at any time or have the right to withdraw from this study at any stage during the study period without any reason, discrimination or retaliation, and the corresponding medical treatment and rights will not be affected. If you want to withdraw from the study during the course of participating in this study, please inform the researcher, complete the relevant examination before withdrawal as required by the researcher, and complete the relevant withdrawal procedures in writing as required. Your data will no longer be collected and used by researchers after withdrawal, but anonymized data collected before withdrawal cannot be deleted or withdrawn. After you withdraw, we may contact you again if we find new information related to your health and rights.

If you want to participate in this study, you need to read this Informed Consent Form carefully and confirm that you fully understand the relevant issues before signing this Informed Consent Form. You will not lose any legal rights granted to you by signing this Informed Consent Form. In the course of the study, you have the right

to obtain new information about the study, as well as the right to obtain an Informed Consent Form and to sign a new Informed Consent Form. If you agree to sign this Informed Consent Form, Fuwai Hospital will receive your research data free of charge, and our researchers can use your research data for the purpose of this research.

12. Circumstances and reasons for your possible termination of the study?

If any of the following conditions occur during the study, the investigator will ask you to withdraw from the study:

(1) when a serious adverse event occurred that was not suitable for further study;

(2) your poor compliance;

(3) other circumstances that the investigators considered necessary to withdraw from the study (the reasons for withdrawal should be recorded in detail).

If this trial is stopped early, you will be notified, and your study staff will advise you on next treatment options based on your health status. For participants who drop out, a final follow-up visit is scheduled for safety reasons, and you have the right to decline. If you opt-out, we may contact you again if new information related to your health and rights is found.

After you withdraw from the study, no new data regarding you will be collected in the future. The relevant information before you withdraw from the study will be kept strictly by the investigator until final destruction, and will not be used or disclosed. However, in rare cases, it is necessary to use this information, such as when the government supervision department conducts supervision, inspection, and statistics, it will require to see all the research information, including the relevant information of your participation in the study at that time.

13. Are you willing to participate in future research?

With your consent, we would like to preserve the data collected in this study for use in subsequent approved cardiovascular disease-related research. Participation in future studies will not increase the risk or financial burden for you or your guardians.

all data of future studies will be properly stored in Fuwai Hospital of Chinese Academy of Medical Sciences and strictly confidential. You may voluntarily choose to participate in future research and may withdraw from the study in writing at any time by contacting the research staff.

14. Who should you contact if you have a problem or difficulty?

You can have any questions about the trial answered at any time by contacting the study physician Li Wen, Tel: 15101515761. If you have any questions about your rights and interests, please contact the Ethics Committee of Fuwai Hospital at 010-88396281, 010-88396282.

Thank you for taking the time to read this Informed Consent Form. If you agree to participate in this study after full consideration, we hope that you will complete the study in accordance with the requirements of the researchers. Before participating in this study, please complete and sign the last page of this document (signature page) with your investigator in duplicate, and each of you and our hospital should keep a signed Informed Consent Form.

Signature Sheet

Statements by Study Participants

I have carefully read, understood and agreed to all terms of this Informed Consent Form.

I have been informed of the research purpose, content, procedures, possible risks of the research, research compensation, and my rights and interests. I had ample time and opportunity to ask questions and received satisfactory answers.

I agree to participate in this study and authorize your hospital to collect my biological samples and research data for this study.

I promise that the information I provide is true; If false information is provided, I promise to be responsible for the consequences.

I was also told who to contact if I had questions or wanted further information.

I confirm that the contact information left in the signature place is my valid contact information. If I change the contact information, I shall promptly inform your hospital. Otherwise, I am willing to bear the consequences of being unable to contact and receive the notice.

I know that I can withdraw from this study at any time, which will not affect the medical treatment and rights that I should receive. I also know that the investigator may suspend/terminate my participation in this study at any time.

I will be provided with an original copy of this Informed Consent Form with my signature and that of the investigator.

I agreed to participate in the study.

Consent to participate in future research: I □ agree /□ Do not consent (please select) to use my clinical practice, research data, and long-term follow-up data for future research. I authorize the investigator and the co-investigator of the relevant medical research project to use and process my anonymized data in the approved medical research.

Name of Study Participant: Signature:

Date:

(If the research participant is a person with no capacity or limited capacity, the guardian's signature is required. If the research participant is a person with full civil capacity, the guardian's content is not required.)

Guardian's name: Signature:

Relationship with study participants: Date:

(If a study participant or guardian is unable to read, an impartial witness is required to read the Informed Consent Form and other written materials to the study participant or guardian and witness the informed consent process. If study participants or their guardians can read, they do not need to fill in the information about impartial witnesses.)

I confirm that the information in the Informed Consent Form was correctly interpreted and understood by the study participants or their guardians. Study participants voluntarily participate in the study.

Name of Impartial Witness: Signature:

Date:

Statement by the Investigators

I confirm that the study details were explained to the study participants. Questions were answered, and a signed informed consent was given to study participants. Study participants volunteered to participate in the study.

Investigator's Name: Signature:

Date: