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Informed Consent Form for Collection of Information

project name	**A multicenter cohort study on precision antithrombotic therapy**
Principal Investigator	**Zuo Xiaocong**
administrative or technical offices	**Department of Pharmacy, Xiangya Third Hospital, Central South University**
Version Number of the Informed Consent Form	**2.0**
Version Date of the Informed Consent Form	**27 February 2026**

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shalom ：

We invite you to participate in a multicenter cohort study on precision antithrombotic therapy conducted by the Department of Pharmacy at Xiangya Third Hospital, Central South University. This informed consent form will outline the purpose, content, methodology, and potential risks and benefits of the study. Please review it carefully before making a informed decision regarding your participation.

1. Research Background

In clinical practice, physicians frequently employ novel oral anticoagulants (such as rivaroxaban, apixaban, edoxaban, and dabigatran etexilate) to prevent and treat thrombotic disorders (e.g., stroke caused by atrial fibrillation, deep vein thrombosis in the lower extremities), or use indobutafen to prevent recurrence of ischemic stroke. Currently, these medications are typically administered at fixed doses, with selection primarily based on the patient's age, body weight, and hepatic/renal function.

However, during medication administration, we observed that even when the same dosage of a drug is administered, there may be significant variations in drug concentrations in the blood among different patients. These variations can affect both the efficacy and safety of the drug: an excessively low concentration may result in insufficient preventive or therapeutic effects and increase the risk of thrombotic events, whereas an excessively high concentration may elevate bleeding risks. Currently, there is no well-defined, universally accepted reference range for blood drug concentrations to assist physicians in achieving more precise dose adjustments for such medications.

2. purpose of research

We plan to conduct this study with the aim of evaluating the safe and effective blood concentration range of antithrombotic agents by measuring their in vivo drug concentrations and meticulously documenting efficacy and safety parameters during treatment, thereby enhancing the effectiveness and safety of pharmacotherapy.

3. research contents

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This study enrolled patients with the corresponding diseases who were currently taking or about to begin taking one of the following five medications (rivaroxaban, apixaban, dabigatran etexilate, edoxaban, or indobutafen).

The primary objective of this study is to determine the optimal concentration range of the drug, identify influencing factors, and investigate potential associations with thrombotic or hemorrhagic events by measuring drug concentrations in your blood and documenting treatment-related data.

This study is an observational study and will not alter your current treatment regimen. The types and dosages of medications you are using are determined by your attending physician based on your condition and current clinical guidelines. This study solely involves the observation and documentation of your treatment process.

(1) Patients with thrombotic disorders requiring monitoring of serum NOAC concentrations (rivaroxaban, apixaban, dabigatran etexilate, edoxaban)

Inclusion criteria: ① Age ≥ 8 years; ② Diagnosed with one of the following conditions requiring long-term anticoagulation therapy: non-valvular atrial fibrillation (CHA_2DS_2-VA score ≥1); venous thromboembolism (deep vein thrombosis or pulmonary embolism); ③ Currently receiving NOAC therapy (rivaroxaban, apixaban, dabigatran etexilate, or edoxaban); ④ Willing and able to comply with the study protocol requirements and follow-up schedule; ⑤ Capable of understanding and signing the informed consent form.

Exclusion criteria: ① Allergy or contraindication to NOACs; ② Pregnant, lactating women, or women of childbearing age unwilling to use effective contraceptive measures; ③ life expectancy<1 month; ④ Mental or emotional disorders preventing participation in follow-up; ⑤ Participation in other clinical trials within 30 days prior to enrollment; ⑥ Inability to complete blood drug concentration monitoring (e.g., difficult intravenous access).

(2) Ischemic stroke patients requiring indobutafen blood concentration

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monitoring

Inclusion criteria: ① Age ≥ 18 years; ② Classified as having high bleeding risk within 72 hours after symptom onset; ③ Received first treatment with indobutafen upon hospital admission; ④ Voluntary and capable of adhering to the study protocol requirements and follow-up schedule; ⑤ Able to understand and sign the informed consent form.

Exclusion criteria: ① Allergy or contraindication to indobutafen; ② Need for change of antithrombotic agents or concomitant antiplatelet/anticoagulant therapy (e.g., clopidogrel, ticagrelor, warfarin, heparin) during the study period; ③ Cardiogenic stroke or stroke induced by angioplasty/vascular surgery; ④ History of aneurysm (intracranial or peripheral); ⑤ Severe hepatic or renal dysfunction (ALT> 3 × ULN, AST> 2 × ULN, creatinine> 2 × ULN); ⑥ Pregnancy, lactation, or women of childbearing age unwilling to use effective contraceptive measures; ⑦ life expectancy<3 months; ⑧ Mental or emotional disorders preventing participation in follow-up; ⑨ Participation in other clinical trials within 30 days prior to enrollment; ⑩ Inability to complete blood concentration monitoring (e.g., difficult intravenous access).

This study was conducted simultaneously in 38 hospitals across the country, with a total of approximately 5,000 eligible patients participating. Xiangya Third Hospital of Central South University enrolled approximately 1,500 patients in this study, which was conducted from January 1, 2026, to June 30,2027.

4. The content, methods, and procedures for specimen collection and information acquisition

If you agree to participate in this study, we will request your cooperation in completing the following tasks:

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(1) Specimen Collection

Collection details: This study requires an additional small blood sample to be drawn from your arm vein, specifically for measuring the concentration of the investigational drug in your bloodstream.

Number of blood draws and timing: Once your medication regimen has stabilized, we will perform one blood draw at each of two specific time points within a single treatment cycle.

First measurement (valley concentration): Collect within 30 minutes before your next scheduled medication administration.

Second measurement (peak concentration): Collected 2 to 4 hours after medication administration (the exact time will be communicated in advance by the researchers).

Volume collected: Each blood draw involves approximately one small test tube of blood (4－6 mL). If you miss the scheduled blood collection due to special circumstances, or if a bleeding or thrombotic event of clinical concern occurs during the study, we may arrange a supplementary blood draw within 24 hours (with a maximum total of three draws).

(2) Information Collection

Information Content: We will collect information related to your condition and treatment, primarily including:

Your basic information (e.g., age, weight), medical history, and current medication regimen.

Routine laboratory test results during the study period (e.g., complete blood count, liver and kidney function tests).

Did you experience any bleeding events (such as gingival bleeding, skin ecchymosis, etc.) or thrombotic events (such as new-onset stroke, myocardial infarction, thrombosis, etc.) during the study period?

collection method ：

Follow-up and Recording: Researchers will contact you at months 1, 3, and 6

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after enrollment for follow-up (potentially via outpatient visits, telephone calls, or WeChat) to inquire about your health status and review your medical records.

5. Risk, inconvenience

This study requires an additional venous blood sample collection for drug concentration determination. The blood draw involves a single-visit venipuncture, with risks comparable to those of routine blood tests, primarily including transient pain at the puncture site, mild cyanosis or swelling, and in rare cases, local infection or needle phlebitis. All procedures will be performed by trained professionals in strict adherence to aseptic techniques to minimize risks.

Additionally, you will need to allocate some time to complete the study follow-up and questionnaire, which may cause minor inconvenience to your daily life. The research team will endeavor to minimize disruption to your routine through flexible methods (e.g., telephone follow-ups).

6. Possible Benefits

Your participation will enable physicians to obtain more reliable research data, facilitating a deeper understanding of the pharmacological mechanisms of the medications you use in humans. In the future, this will facilitate the development of safer and more effective personalized medication guidance protocols for patients with similar conditions. Additionally, it may advance medical progress in the field of antithrombotic therapy, benefiting a broader patient population.

7. Costs and compensation for participating in the research

This study is an observational study. All treatment regimens and routine examinations were conducted in accordance with standard medical practices, and related costs were settled under conventional healthcare policies. The expenses for additional blood drug concentration testing and associated blood collection consumables specifically performed for this study will be borne by the research project; you are not required to pay any fees.

We fully understand that additional blood sampling requires your time and may cause minor inconvenience. To express our gratitude for your contribution and efforts to this study, appropriate compensation (such as transportation subsidies, nutritional

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allowances, or other forms of healthcare services) will be provided after each scheduled research visit involving blood collection. The specific compensation details will be communicated to you by the research team during or following the visit.

8. Privacy and Confidentiality

During the research process, we will implement necessary technical and organizational measures to safeguard your privacy. Your personal data will be kept confidential. When necessary, government regulatory authorities or ethics committees may access your personal data in accordance with regulations. Upon publication of the research findings, no identifying information about you will be disclosed.

9. Your Rights

Your participation in this study is entirely voluntary. If you do not wish to participate, you may decline without any adverse impact on your current or future medical care. Even after agreeing to participate, you may withdraw from the study at any time without any justification. Should you decide to discontinue participation, please promptly inform your physician.

10. Continued preservation and utilization of remaining specimens

All blood drug concentration measurements in this study will be conducted at central laboratories that comply with national regulations and possess the requisite qualifications. Your blood samples will adhere to stringent standard operating procedures throughout collection, processing, transportation, testing, and storage to ensure sample quality and data reliability. Your blood samples will be used exclusively for the drug concentration measurements and related analyses specified in this protocol. Upon completion of the study, your anonymized remaining blood samples may be retained for future scientific research approved by the ethics committee, particularly those related to cardiovascular and cerebrovascular diseases or pharmaceutical studies. Under strict confidentiality and without disclosure of your personal identity, your research data and remaining samples may be shared within the scientific community with other researchers addressing similar scientific questions to maximize their scientific value and promote public health. Any such future use or sharing must receive additional specialized approval from the ethics committee.

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11. contact information

If you have any questions about your rights, please contact us during working hours on national statutory workdays:

Ethics Committee of Xiangya Third Hospital, Central South University

Contact number: 0731-88618938

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Agreement Statement

Volunteer Statement: I have read the aforementioned introduction to this study and fully understand the potential risks and benefits associated with participation. I voluntarily agree to participate in this study. I will receive an informed consent form signed with my name and date.

Volunteer:

Name (regular script):_____ sign one's name ： _____

date ： _____year_____moon_____Contact Information:_____

Guardian (if applicable):

Name (regular script):_____ sign one's name ： _____

date ： _____year_____moon_____Contact Information:_____

Relationship with volunteers: _____

Guardian (if applicable):

Name (regular script):_____ sign one's name ： _____

date ： _____year_____moon_____Contact Information:_____

Relationship with volunteers: _____

Doctor's Statement: I confirm that the details of this study have been explained to the volunteers, and all relevant questions from them have been answered. The volunteers participated on a voluntary basis. This informed consent form is prepared in duplicate, with one signed copy retained by both the hospital and the volunteer.

Name (regular script):_____ sign one's name ： _____

date ： _____year_____moon_____Contact Information:_____