Informed Consent Form

Trial product name: WeFlow-Arch modular inner branch stent-graft system

Model specification: All specifications

Sponsor: Hangzhou Endonom Medtech Co., Ltd.

Protocol name: A prospective, multicenter and single-arm study to evaluate the safety and efficacy of the WeFlow-Arch modular inner branch stent-graft system for aortic arch lesions

Version number and date of informed consent form: V1.0/December 7, 2020

Clinical trial institution:_____

Investigator:_____

Informed Consent Version Number: V1.0 / Version date: 20201207

STUDY PARTICIPANT INFORMATION SHEET

Dear participant:

You will be invited to participate in "A prospective, multicenter and single-arm study to evaluate the safety and efficacy of the WeFlow-Arch modular inner branch stent-graft system for aortic arch lesions". The following describes the trial background, purpose, methods, benefits and potential risks or inconveniences that this trial's medical device may cause you during the trial, as well as your rights. Please read it carefully before participating in the clinical trial. The information provided in this informed consent form can help you decide whether to participate in this clinical trial. If you have any questions, please ask the investigator in charge of the trial to ensure that you fully understand the relevant content. Your participation in this trial is voluntary. If you agree to participate in the clinical trial, please sign the statement of informed consent.

1. Background of the trial

Severe aortic dilation, such as aortic aneurysm, would seriously affect patients living quality and even cause patients death. Based on the location of the lesion, the condition may be classified as ascending aortic aneurysm, arch aneurysm, descending aortic aneurysm, abdominal aortic aneurysm, etc. More than 70% of patients with untreated thoracic aortic aneurysm eventually progress to aneurysm rupture, and more than 90% of such ruptures are fatal. Current consensus opinion states that symptomatic or large true aneurysms, penetrating ulcers and pseudoaneurysms, should be considered for operative and interventional procedures. Recent developments in the field, combined with both domestic and overseas experience suggest that open operation is typically required for aortic aneurysms involving the ascending aorta or the aortic arch due to the lack of an adequate anchoring zone. Surgical repair of aneurysms in the ascending aorta and aortic arch requires the use of deep hypothermic circulatory arrest, with mortality rates of 2%-16.5% and stroke rates of 2%-18% reported. Arch hybrid operation generally provides adequate proximal anchoring zone for endovascular repair and avoids the use of deep hypothermic circulatory arrest, but mortality and stroke rates remain high, with 0%-15% mortality and 0%-11% stroke rates reported.

In recent years, the development of fenestrated and branch stent-graft has provided new devices and methods for the treatment of complex aortic lesions, greatly reducing the high mortality rate (14% vs 8%) associated with open operation and endovascular intervention, with less injury, fewer complications, lower mortality, and faster recovery. This has allowed even elderly patients or patients with associated cardiac, pulmonary, hepatic, and renal insufficiency to be treated aggressively, who were previously deemed

unsuitable for open operation.

Parallel stenting and fenestration are currently used techniques in the procedure of endovascular aortic arch repair. The parallel stenting technique, also known as chimney stenting, preserves the branch vessels and expands the landing zone by releasing small stents along the outside of the aortic stent-graft. The technique relies on the close conformation of the aortic stent-graft and the aortic wall around the chimney stent, and the gutter between the small stent and aortic stent graft is considered one of the main sources of endoleak.

Fenestration technique can be either *ex vitro* or *in situ*. One of the main disadvantages of *ex vitro* fenestration is inaccurate alignment during the procedure. *In situ* fenestration prevents the risk of inaccurate alignment, but the technique still suffers from some drawbacks, including the risk of fenestration debris-related embolism as well as unsuitability for use in the treatment of torturous aortic lesion. Branch stent-graft technology, especially multi-branch stent-graft for aortic arch reconstruction, represents a major development direction for multivessel aortic arch reconstruction as it more closely conforms to normal anatomical structure and blood flow in the human body.

Global research on multi-branched stent-grafts remains in the preliminary stages, and the present study seeks to develop and design a modular inner branch stent-graft system to address the problems of current clinical endovascular repair techniques and products for the aortic arch.

The endografts of the modular inner branch stent-graft system consist of three modules: one ascending aorta stent-graft with two inner branches, bridging cover-stents, and one tubular aortic arch stent-graft. The ascending aorta stent-graft has two inner branches that can be combined with bridging cover-stents for endovascular reconstruction of the innominate artery, left common carotid artery or left subclavian artery. The aortic arch stent graft is combined with the ascending aortic stent-graft to address lesions present in the arch and descending aorta.

The clinical trial has been approved by the ethics committee of the Chinese PLA General Hospital (2020-034) and each participating hospital (institution:_____, approval code:_____)

2. Trial objective

The goal of the study is to evaluate the safety and efficacy of WeFlow-Arch modular inner branch stent-graft system in the endovascular interventional treatment of patients with aneurysmal lesions of the aortic arch.

3. Trial content and methods

This is a prospective, multicenter and single-arm study to evaluate the safety and efficacy of the WeFlow-Arch modular inner branch stent-graft system for aortic arch lesions, including: true aortic arch aneurysms, pseudo-aortic arch aneurysms and aortic arch ulcers. Duration of the participation, the trial

device will be implanted during the procedure and will be follow up for a period of 5 years, respectively, at 30 days, 6 months, 12 months, 2 years, 3 years, 4 years, and 5 years after stent implantation. Therein, CTA (CT angiography) examinations were performed at 30 days, 6 months, and 12 months after the procedure.

4. The trial process

The clinical trial you participate in will be divided into three phases:

1). Screening period:

If you are willing to participate in this study, the doctor will ask for and record your medical history before you are selected for the study, and you will be required to undergo a series of medical examinations to help the doctor determine whether you are eligible to participate in this clinical study. (Refer to: Trial flow chart)

2). Treatment period:

If you meet the inclusion criteria and do not meet any exclusion criteria, your doctor will perform endovascular repair of the aortic arch on the first day of the treatment period. The main procedure is as follows:

The procedures are not at all painful and performed under general anesthesia in a hybrid operating room. Before the endovascular procedure, bypass between the left common carotid artery and left subclavian artery is performed through a neck incision. The vascular accesses for endovascular procedure are established through the left common carotid artery, the right brachial artery or axillary artery, left radial artery, and the femoral artery on one limb by percutaneous puncture or direct vision puncture. After evaluating the conditions of your aortic arch lesion, the stent-graft will be implanted into the correct position of aorta using standard interventional protocol. In this process, the doctor will use X-rays and a contrast agent to observe the conditions of your aorta. And generally, the doses of X-rays and a contrast agent you receive will be no more than those used in routine procedures on other complex aortic diseases.

After the procedure, you will be transferred to the post-anesthesia care unit or intensive care medicine, and then to general wards when the condition is stable.

3). Follow-up period:

According to the study protocol, you need to undergo vital signs, blood routine, urine routine, coagulation function, liver and kidney function tests, and other examinations before leaving the hospital. And at 30 days, 6 months, and 12 months after the operation, you will receive regular telephone follow-up or outpatient review and reexaminations, including CTA. At the 2, 3, 4, and 5 years after the operation, you will be followed up by regularly telephone to assess your health statuses

See the **Trial flow chart** below for details:

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Trial flow chart

Trial Procedure	**Screening period**	**Operation**	**Follow-Up**				
Visit	V1	V2	V3	V4	V5	V6	V7-10
Days	Day -15 ~ -1	0	Before discharge	30 days after operation ± 7 days	6 months after operation ± 30 days	12 months after operation ± 30 days	2-5 years after operation ± 30 days
Signing of Informed Consent Form	X						
Inclusion/Exclusion Criteria	X						
Medical History/Demographic Data	X						
Pregnancy Test	X						
Physical Examination	X	X	X				
Blood routine examination	X		X				
Urine routine examination	X		X				
Coagulation Function test	X		X				
Liver and Kidney Function	X		X				
Evaluation of Clinical Symptoms (Modified Rankin Score)	X		X	X	X	X	
12-lead ECG	X		X				
Echocardiography	X						
Chest X-ray	X						
CTA	X			X	X	X	
DSA		X					
Operation Records		X					
Medication Record	X	X	X	X	X	X	X
Adverse Event Record	X	X	X	X	X	X	X

Notes:

- Pregnancy test: Women of childbearing age during screening as well as women who are suspected of being pregnant during the course of screening will be subject to this test (urine or blood pregnancy test);
- Physical examination: Heart rate, respiration, blood pressure, body temperature and arterial pulsation in the upper and lower extremities;
- Blood routine examination: Erythrocytes, leukocytes, platelet count and hemoglobin;
- Urine routine examination: pH, leukocytes, erythrocytes and proteins;
- Liver and kidney function: Creatinine (Cr), alanine aminotransferase (ALT), aspartate aminotransferase (AST), total bilirubin (TBIL), direct bilirubin (DBIL), indirect bilirubin (IBIL);
- Coagulation function testing: Activated partial thromboplastin time (APTT), prothrombin time (PT), international standard ratio (INR), fibrinogen (FIB), thrombin time (TT), D dimer D-dimer:
- Data pertaining to past medication and past medical history for the 3 months preceding the date on which informed consent is obtained will be collected;
- CTA measurement data during the screening period needs to be reviewed and confirmed by the team leader, and enrollment can proceed after confirmation;
- Before discharge (visit 3): refers to a visit from before the operation to a day before discharge, and the results of the last laboratory test before discharge are collected;
- CTA data obtained prior to the operation and at 30 days ± 7 days after the operation, 6 months ± 30 days after the operation and 12 months ± 30 days after the operation will be collected;
- Medication records created prior to the operation, during the operation, prior to discharge and at 30 days ± 7 days after the operation, 6 months ± 30 days after the operation and 12 months ± 30 days after the operation as well as adverse event records created after informed consent is obtained, during the operation, prior to discharge and at 30 days ± 7 days after the operation, 6 months ± 30 days after the operation and 12 months ± 30 days after the operation will be collected;
- Participants' modified Rankin scores obtained 90 days after stroke onset will be collected;
- Where feasible, laboratory test data obtained 15 days prior to participant enrollment (prior to signing of informed consent) as well as CTA and ultrasound, 12-lead ECG data, and chest radiography obtained 30 days prior to enrollment (prior to signing of informed consent) may be used as baseline assessment data without any need for re-examination.
- Participants were followed up for 2, 3, 4, and 5 years (± 30 days) by telephone follow-up, and adverse events and medications related to adverse events were recorded.

5.Trial funding

Hangzhou Endonom Medtech Co., Ltd. will be responsible for relevant testing expenses possibly required for device implantation or the study.

6. No-cost diagnosis and treatment and other subsidies that may be obtained during the trial

1). By participating in this trial, you can receive a free WeFlow-Arch modular inner branch stent-graft system.

2). By participating in this trial, you can be provided with international clinical trial insurance. (Insurance company name:_____, insurance code:_____)

3). During the study, blood routine examination, urine routine examination, liver and kidney function, coagulation function, electrocardiogram, echocardiography, chest X-ray examination, CTA examination, and a pregnancy test (urinary/blood pregnancy) can be performed for free before the operation. A free blood routine examination, urine routine examination, liver and kidney function, coagulation function, and electrocardiogram examination will be performed at the time of discharge, and a free CTA examination will

be performed at 30 days, 6 months, and 12 months after the operation. You will not be able to participate in this study if you are pregnant and/or breastfeeding.

4). You will not receive remuneration for taking part in this study.

7. Potential benefits of participating in this study

Your potential benefits, following endovascular repair, primarily include alleviation of swelling and pain symptoms caused by the aortic aneurysm, prevention of local tissue ischemia and tissue or organ compression, recovery of normal blood circulation, and even saving your life. However, it is not possible to ensure that you will obtain the benefits herein. The possible benefits you may get from participating in this study also include good medical care by medical staff and attention to your condition. You may not receive benefits other than these, but the medical data provided by your participation in this study may help other patients with the same disease in the future.

8. Possible risks and discomfort

Over the course of many years of clinical applications, endovascular repairs have been proven safe and effective. However, it is an interventional procedure, and, as in other interventional procedures, there are intraoperative and postoperative possibilities of some adverse events, including but not limited to intraoperative respiratory/circulatory failure-induced cardiac arrest, sudden death, malignant arrhythmia, acute heart failure, acute myocardial infarction, cerebrovascular accident, bleeding risk, anesthesia risk, allergies, systemic inflammatory response, rupture of aneurysm, hemorrhagic shock, and cardiac tamponade; device-related complications, including stent-graft migration or collapse, kinking , endoleak due to inadequate seal at the site of the graft attachment, stent-graft fracture, and graft-related infection; and postoperative new-onset lung infection, pleural effusion, hypostatic pneumonia, acute kidney injury, acute upper limb ischemia, visceral ischemia, aortic dissection or rupture, retrograde type A dissection, paraplegia, cerebral stroke, spinal ischemia, access-related complication, coagulation disorder, pain, etc.

If you experience any discomfort during the study period, or if there is a new change in your condition, or any unexpected situation, regardless of whether it is related to the study, you should notify your doctor promptly, and the doctor will make a judgment and give appropriate medical treatment.

9. Treatment and financial compensation for trial-related injury

If there is a need for treatment during the study period, if your injury was caused by study equipment or study procedures, the sponsor will provide free treatment and provide reasonable compensation; inspection and treatment costs caused by non-study devices or study procedures will be borne by you or your medical insurance.

10. Alternative diagnosis and treatment methods other than this trial

If you decide not to participate in this clinical trial, your doctor will choose a suitable alternative

treatment, such as medication or surgical treatment, based on your physical condition.

11. Confidentiality of medical records

Your medical records (including research medical records and physical and chemical test reports, etc.) will be kept in the hospital as required. Except for investigators, ethics committees, inspections, audits, competent authorities, and other relevant personnel that are allowed to view your medical records, other personnel not related to the trial will not have the right to view your medical records without permission. In addition, if you consent, your private doctor will be informed of your participation in the study. The public report of the results of this trial will not disclose your personal identity. We will make every effort to protect the privacy of your personal medical data within the permitted scope.

12. Loss to follow-up

If, after the clinical trial is approved, a participant is unable to complete the follow-up for a participant-related reason, the investigators should use all available avenues to contact the participant in order to inquire after the reason, including investigating the whereabouts of the participant by looking up civil registration information; if the participant drops out due to an adverse event, and the follow-up ultimately determines that there is a causal relationship with the trial device, the event must be recorded in the eCRF and the sponsor should be notified accordingly.

13. Voluntary participation and withdrawal from the trial

You can choose not to participate in this trial, or you can withdraw from the trial after informing the investigator at any time without being discriminated or retaliated against. None of your medical treatment and rights will be affected by this.

If you need other diagnosis/treatment, or you did not follow the trial plan, or for any other reasonable reasons, the investigator can terminate your continued participation in this trial.

14. Relevant contact information for new information

If there is any important new information during the study that may affect your willingness to continue participating in the study, your doctor will notify you promptly. If you are interested in your own study data, or after the trial is over, you want to know the findings of this trial, you can ask any questions about this trial at any time and get corresponding answers. Please call and (investigator or related personnel).

The Ethics Committee has reviewed and approved the trial. If you have any questions related to your rights/interests, or if you want to report difficulties, dissatisfaction, or concerns encountered in the process of participating in this trial, please contact:_____ , the Ethics Committee, tele:_____ .

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Participant's signature sheet

15. Participant statement

I have read this informed consent form carefully. I have had the opportunity to ask questions and all questions have been answered. I understand that participation in this trial is voluntary. I can choose not to participate in this trial, or I can withdraw after informing the researcher at any time without being discriminated or retaliated against. None of my medical treatment or rights will be affected by these.

If I need other diagnosis/treatment, or I did not follow the trial plan, or there are other reasonable reasons, the investigator can terminate my continued participation in this clinical trial.

I permit the competent authorities, the sponsor, and the insurer to review my files. Since the study will be conducted in several countries, I likewise consent to the review of my personal study data by the competent authorities of the relevant countries.

I also consent to the scientific publication of the study results so long as data protection regulations are observed.

I agree to having my primary care physician notified regarding my participation in this study.

I voluntarily agree to participate in this clinical trial, and I will receive a signed copy of the "Informed Consent Form."

Participant's signature: _____ Date:_____Year _____ Month _____ Day

Participant's contact phone number: _____

※If the participant is unable to sign informed consent due to incapacity or other reasons, it shall be signed by a legal guardian or authorized person.

Guardian or authorized person's signature: _____ Date:_____Year ____ Month ___ Day

Relationship with the participant: _____

Reason why the participant cannot sign the informed consent form: _____

_____

Guardian's contact phone number: _____

※If the participant or their guardian is not able to read, a witness should be present during the informational process (if involved):

Witness signature: _____ Date:_____Year _____ Month _____ Day

16. Investigator's Statement

I have accurately informed the participant of the contents of the informed consent form and answered their questions. The participant voluntarily participates in this clinical trial.

Investigator's Signature: _____ Date:_____Year _____ Month _____ Day