

2019 JAPAN Critical Limb Ischemia Database (JCLIMB) Annual Report

The Japanese Society for Vascular Surgery JCLIMB Committee, NCD JCLIMB Analytical Team

Since 2013, the Japanese Society for Vascular Surgery has started the project of nationwide registration and tracking database for patients with critical limb ischemia (CLI) who are treated by vascular surgeons. The objective of this project is to elucidate the current status of the medical practice for CLI patients to contribute to the improvement of the quality of medical care. This database, called JAPAN Critical Limb Ischemia Database (JCLIMB), is created on the National Clinical Database (NCD) and collects data of patients' background, therapeutic measures, early results, and long-term prognosis as long as 5 years after the initial treatment. The limbs managed conservatively are also registered in JCLIMB, together with those treated with surgery and/or endovascular treatment (EVT). In 2019, 1070 CLI limbs (male: 725 limbs, 68%) were registered by 83 facilities. Arteriosclerosis obliterans (ASO) accounted for 98% of the pathogenesis of these limbs. In this manuscript, the background data and the early prognosis of the registered limbs are reported. Although the registration format for the simultaneous surgery of bilateral limbs in NCD was changed to one patient and two limbs, JCLIMB still counted two patients and two limbs to eliminate discrepancy with the past annual reports. (This is a translation of *Jpn J Vasc Surg* 2022; 31: 157–185.)

Keywords: arterial occlusive disease, leg ischemia, peripheral arterial disease (PAD), CLI, annual report

1. Introduction

Recently, an increasing number of patients with critical limb ischemia (CLI) have undergone medical care at

clinical practice sites. Improving the treatment outcome for these patients is an important and urgent issue. Since 2013, the Japanese Society for Vascular Surgery (JSVS) has initiated the project of a nationwide CLI registration and tracking database to obtain CLI epidemiological data that can be shared among the medical staff. The background of CLI limbs, treatment contents, early outcome, and long-term outcome until 5 years after surgery, including non-surgical limbs, are registered in this database. The database was named JAPAN Critical Limb Ischemia Database (JCLIMB) and established on the National Clinical Database (NCD). The primary objective of the JCLIMB project is to elucidate the current status of CLI treatment performed by vascular surgeons in Japan and inform physicians at practice sites of those, thus improving the quality of medical care. The initial registration data, and their tracking data 1 month after registration in 2013–2018, have already been published.^{1–6)} This article reports the basic data registered in 2019.

2. JCLIMB


Registration details, including the definition of CLI, have already been described in the 2013 annual report.¹⁾ The CLI to be registered was defined according to TASC II⁷⁾: chronic ischemic rest pain, ulcer, or gangrene attributable to objectively proven arterial occlusive disease. The CLI diagnosis should be confirmed by ankle pressure (AP) below 50 mmHg or toe pressure (TP) below 30 mmHg in limbs with rest pain and by AP below 70 mmHg or TP below 50 mmHg in limbs with ulcer or gangrene.

The same limb can be registered in JCLIMB only once within a 5-year tracking period. When the registered limb is treated at different times or at different institutions, such data should be added only to the tracking items of each limb in JCLIMB, avoiding registration overlap. However, details of the procedure are registered each time in the NCD apart from the registration in JCLIMB. On the other hand, the patient with bilateral CLI can be registered twice for each limb. Based on the NCD regulations, fixing of JCLIMB is done as follows:

Initial registration data: Early April in the following year, tracking data early after treatment (1 month)/6

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months after treatment: end of December in the following year, tracking data 1 year after treatment: end of December after 2 years.

Tracking data 2, 3, 4, and 5 years after treatment were registered until the end of December after 3, 4, 5, and 6 years, respectively.

As a general rule, the timing of tracking data registration is accepted within a ± 2 -month range until 12 months after treatment and within a ± 3 -month range thereafter. Although the day for tracking data fixing is specified, it is made flexible because in some limbs, follow-up data might be revealed later.

It is very difficult to require facilities participating in NCD to register CLI data because a significant number of registration items in JCLIMB would put too much burden on them. Thus, facilities wishing to participate were recruited. In total, 83 facilities, which registered CLI limbs in 2019 at the time of compiling in December 2021, are listed in the appendix.

Because JCLIMB is considered a registry study on NCD, patient consent to participate in the study and the ethical review of the study at the time of participation in NCD were adopted.

3. Comments on the Aggregated Data in 2019

The initial registration data in 2019 were fixed in early April 2020, and the tracking data early after treatment (1 month) were fixed in April 2021. In December 2021, 1070 limbs, belonging to 725 males (68%) and 345 females (32%), were registered in 83 facilities. All data and extracted data on arteriosclerosis obliterans (ASO) were collected according to the registered items. Because ASO accounted for 98% of all limbs, the overall and ASO data exhibited similar tendencies. In the comments, ASO data were presented in parentheses. In addition, because the WIfI classification of the Society for Vascular Surgery (SVS) was reported in 2014 (Tables 1-1-1-1-3),⁸⁾ JCLIMB made several changes and additions to the registered items, making the WIfI classification possible since 2015 (Tables 1-2-1-1-2-3). The total figure was not always consistent, mostly due to missing values, and an explanation for each inconsistency was added. Although the registration format for bilateral simultaneous surgery was changed from two limbs in two patients to two limbs in one patient in the NCD in July 2019, the data was calculated on a limb basis as before in the 2019 JCLIMB annual report to eliminate discrepancy with the past reports.

(1) Pretreatment patients' background

The pretreatment patients' background is presented in Tables 2-1-2-6. Good blood pressure control was defined

as blood pressure below 140/90 mmHg in the absence of diabetes and renal failure or blood pressure below 130/80 mmHg in the presence of these diseases. Good diabetes control was defined as hemoglobin A1c below 7.0% (National Glycohemoglobin Standardization Program [NGSP] value). Good dyslipidemia control was defined as low-density lipoprotein below 100 and 80 mg/dL in the absence and presence of other arteriosclerotic diseases, respectively. The presence of heart failure was judged clinically. The patient was regarded as having heart failure based on a past history of admission due to heart failure, clinical symptoms of heart failure, diagnosis of heart failure confirmed via echocardiography, or reduced cardiac function as revealed by echocardiography even with no clinical heart failure symptoms. Renal dysfunction was graded according to the new chronic kidney disease severity classification of the "Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease 2012"⁹⁾: Renal dysfunction was absent when the estimated glomerular filtration rate (eGFR) (mL/min/1.73 m²) was 60 or higher, and it was graded as G3a, G3b, G4, and G5 when the eGFR was 45–59, 30–44, 15–29, and below 15, respectively. eGFR below 15 in hemodialysis patients was graded as G5D.

The causes of the arterial occlusion of the limb were ASO in 1047 (98%) limbs, thromboangiitis obliterans (TAO) in 7, vasculitis (Takayasu's arteritis, collagen disease, Behçet's disease, and fibromuscular dysplasia excluding TAO) in 9, and others in 7. Comorbidities consisted of diabetes in 65% (66%) of the limbs, hypertension in 74% (74%), dyslipidemia in 41% (42%), ischemic heart disease in 40% (41%), heart failure in 15% (15%), cerebrovascular disease in 20% (20%), dialysis for renal failure in 41% (42%), past medical history of malignant neoplasm or that being treated in 11% (11%), arterial occlusive lesions in the contralateral limb in 73% (74%), and smoking (ex- and current) in 58% (58%).

The problems and considerations on these spreadsheets are described below. In Table 2-4, the total number of malignant neoplasm sites is larger than that of malignant neoplasms. This is because multiple selections of malignant neoplasm sites were possible. The blood flow data (ankle brachial index, toe brachial index [TBI], and skin perfusion pressure [SPP]) of contralateral limbs were omitted in this report as there were many missing values, though they had been displayed until 2018.

(2) Conditions of limb ischemia

Limb ischemia pretreatment conditions are presented in Tables 3-1 to 3-6. Regarding the walking function (Taylor classification),¹⁰⁾ patients who could walk outdoors or indoors independently, including with a cane, were regarded as "ambulatory," whereas those unable to walk but able to

stand on their own legs during transfer from the bed to a wheel chair were designated as “ambulatory/homebound.”

Regarding the state of local tissue defect (Texas University Classification),¹¹⁾ the most severe lesion, the main treatment target, was evaluated. SPP was measured on the foot (base of the toe, dorsum of the foot, or sole), and a lower value was used. To perform the Wifi classification, the ulcer and gangrene sites were separately registered. Although SPP is widely used as an objective index for evaluating ischemia in Japan, the ischemic grading criteria using SPP is not shown in the Wifi classification, in which TP is given top priority. Therefore, in JCLIMB, the SPP value was converted to TP using the conversion equation $SPP = 0.6853 \times TP + 14.48$ from the correlation data of SPP and TP reported in Japan¹²⁾ and applied for Wifi ischemic grading (Table 1-2-2). Because the ischemic grade of the Wifi classification based on the SPP value was newly defined in the Japanese PAD guideline revised in 2022, the classification method will be changed in the annual report after 2020.

The lesion was considered infected when it showed two or more of the following symptoms: local swelling or induration, erythema >0.5 cm around the ulcer, local tenderness or pain, local warmth, and purulent discharge (thick, opaque to white, or sanguineous secretion). In addition, local infections involving only the skin and the subcutaneous tissue, and those involving structures deeper than the skin and subcutaneous tissues, were separately registered. Local infections involving only the skin and the subcutaneous tissue were differentiated based on the size of the erythema around the ulcer, ≤ 2 or > 2 cm. Systemic inflammatory response syndrome, indicating systemic infection, was manifested by two or more of the following symptoms: temperature $> 38^{\circ}\text{C}$ or $< 36^{\circ}\text{C}$, heart rate > 90 beats/min, respiratory rate > 20 breaths/min or $\text{PaCO}_2 < 32$ mmHg, white blood cell count $> 12,000$ or $< 4,000$ cu/mm, or 10% immature (band) forms. The arteries in the ankle joint region were classified as foot arteries.

In the pretreatment, 60% (59%) of the patients were ambulatory, 20% (20%) were ambulatory/homebound, and 21% (21%) were non-ambulatory. On the Rutherford classification (R),¹³⁾ limbs with categories R4, R5, and R6 accounted for 19% (19%), 66% (66%), and 15% (15%) of the limbs, respectively. The median ABI, TBI, and SPP of the measured limbs were 0.62 (0.62), 0.31 (0.31), and 21 mmHg (21 mmHg), respectively. The occlusive lesion was located in the aortoiliac artery in 22% (22%) of the limbs, the femoropopliteal artery in 60% (61%) of the limbs, and the crural or foot artery in 61% (61%) of the limbs. The multiple occlusive lesions were located in the aortoiliac and femoropopliteal arteries in 12% (12%) of limbs, the aortoiliac artery and the crural or foot artery

in 6% (6%), the femoropopliteal artery and the crural or foot artery in 30% (30%), and the aortoiliac artery and the femoropopliteal artery and the crural or foot artery in 5% (5%).

We were able to apply the Wifi classification with sufficient data to 709 limbs (694 limbs). On the Wifi classification, limbs with the stages 1, 2, 3, and 4 accounted for 7% (7%), 9% (9%), 27% (27%), and 57% (57%) of the limbs, respectively.

The problems and considerations on these spreadsheets are described below. In Table 3-1, the total number of ambulatory function differed from the total number of the main sites of ulcer/gangrene to be treated. This is because there were missing values in the main sites of ulcer/gangrene to be treated. In Table 3-3, the total number of limbs in the TASC II classification differed from the number in each column of the site of occlusion. In the “aortoiliac” lesion, a decreased number of that in the TASC II classification may have been due to input omission. In the “femoropopliteal” lesion, an increased number of that in TASC II may have been due to the crural lesions. In Table 3-6, there was some dissociation between the R and Wound grades. This may be due to the R grade’s obscure definition. For example, extensive gangrene involving the forefoot is classified in R5 and W3, whereas a shallow ulcer without exposure of the distal leg bone is classified in R6 and W1. In Table 3-6, 82 limbs (81 limbs) were registered as ischemic grade 0 in the Wifi classification. By definition, a limb with ischemic grade 0 has an ABI 0.8 or higher or AP higher than 100 mmHg, or if arterial calcification precludes reliable ABI or AP measurements, TP of 60 mmHg or higher or TcPO_2 60 mmHg or higher (SPP 55 mmHg or higher in JCLIMB) (Table 1-1-2). There should be no limb with ischemic grade 0 because the CLI registered in JCLIMB is defined according to TASC II. The limbs might be clinically judged to be CLI irrespective of the objective ischemic index, although details are unknown. Table 3-6 demonstrates that there were three limbs (3 limbs) in which infection was confirmed in R4 limbs, despite the absence of a local wound by definition of R4. This may occur because tissue loss is not always requisite for fl grade. In Table 3-6, the numbers of wound, ischemia, foot infection, and stage are different. This is because there were missing values in items required for grading.

(3) Treatment

Tables 4-1 to 4-6 present the CLI treatment data. Revascularizations of the affected limbs were performed in 94% (95%) of the registered limbs, and primary major amputations were performed in 2.3% (2.4%) of the registered limbs. Among the surgical reconstruction procedures, distal bypass accounted for 54% (54%). Endovascular treatment (EVT), including EVT alone and hybrid treatment

with surgical reconstruction, accounted for 54% (55%) of the total revascularization procedures. The EVT applied to the crural or foot artery accounted for 37% (36%) of the total EVT.

The problems and considerations on these spreadsheets are described below. In **Table 4-1**, the sum of the number of cells in treatment is larger than that of the number of registered limbs, 1070 (1049), because more than one treatment method can be selected. In **Table 4-1**, the discrepancy in the number of major amputation to the number of detail of amputation was caused by “unused.” In the column of “vein usage” of **Table 4-3**, how the autologous veins were used was described when they were selected as vascular conduits. The sum of the number in the column of vein usage, “in-situ,” “non-reversed,” “reversed,” “spliced,” and “patch,” is larger than the sum of the number in the column of vein in vascular prosthesis. It could be because of selecting multiple vein usage for arterial reconstruction in a limb. The sum of the number in the column of vein in vascular prosthesis is identical to the sum of the number in the column of vein quality. Vascular prosthesis (–) included an endarterectomy without a patch angioplasty. In **Table 4-4**, the sum of the number of proximal anastomosis is not equal to the sum of the number of distal anastomosis. This was because multiple arteries could be selected in each anastomosis. The total number of distal anastomosis sites of the foot artery is larger than that of distal anastomosis “foot.” This was because multiple sites were selected in dual bypass.

Table 4-6 summarizes the vascular grafts used for the infrainguinal arterial reconstruction. For example, the total number of vascular graft in the column of femoral–proximal popliteal artery bypass was 50 (49), which was higher than 47 (46), the number of actual applications in **Table 4-2**. This was because multiple graft materials could be selected when multiple procedures, such as a sequential bypass procedure and TEA, can be performed simultaneously for arterial reconstruction in the lower limb.

(4) Outcomes early (1 month) after treatment

Tables 5-1 to 5-8 present the outcomes early (1 month) after treatment. At the time of summary count at the end of April 2021, follow-up data 1 month after treatment were obtained in 886 limbs (83%), including 866 limbs (83%) with ASO. Data were collected according to the severity of the local limb conditions (Rutherford classification) and treatment measures (EVT alone or surgical reconstruction with/without EVT). The mortality rate was 3.6% (3.7%) in the whole series and 3.8% (3.9%) and 2.9% (3.0%) treated with EVT alone and with surgical reconstruction with/without EVT, respectively. The most common cause of death was cardiac disease, which accounted for 34% (34%) of all deaths. Postoperative

complications were cardiac disease in 3.0% (3.0%), cerebrovascular disease in 1.8% (1.7%), pneumonia in 2.4% (2.4%), and wound complication in 4.5% (4.5%). Complications at the puncture site were noted in 1.0% (1.0%) of the limbs treated with EVT alone.

The median ABI and SPP of the measured limbs, immediately after treatment and 1 month after treatment, were 0.85 (0.85) and 0.89 (0.89) and 41 (41) mmHg and 41.5 (41) mmHg, respectively. Stenosis, occlusion, infection, or other trouble occurred after revascularization by EVT alone in 11.6% (11.8%) and by surgical reconstruction with/without EVT in 9.4% (9.0%). The rate of secondary major amputation was 5.1% (4.9%) in EVT alone and 3.2% (3.0%) in surgical reconstruction with/without EVT. When ambulatory function at discharge was compared with that before surgery, the rate of ambulatory patients changed from 60% (59%) to 52% (52%), ambulatory/homebound patients from 20% (20%) to 22% (22%), and non-ambulatory patients from 21% (21%) to 26% (26%).

The problems, comments, and considerations on these spreadsheets are described below. The number of “bypass graft/EVT condition,” “clinical limb symptoms,” “ischemic wound,” and “ambulatory function at discharge” did not match (**Table 5-5**). The total number of “ambulatory function at discharge” was 886 (866), which was equal to the number of life prognoses (**Table 5-1**), indicating no “unused.” The number of “bypass graft/EVT condition” was not equal to the number of “ambulatory function at discharge” because the objective of “bypass graft/EVT condition” was to achieve survival with arterial reconstruction of the limbs and because more than one condition could be selected. The numbers of “clinical symptoms of limb” and “ischemic wound” were not identical. They must be identical because their objective was to achieve survival without major amputations. This is speculated to be due to the presence of “unused” in dead cases before registration. The discrepancy in the total number of “life prognosis,” “clinical limb symptom,” and “amputation” is due to the difference of condition for data aggregation. In **Table 5-3**, the presence of the puncture site complication in non-reconstruction group seems to be odd. The registration of complication at the puncture site was required in limbs where PTA/STENT was selected in the revascularization method. However, in JCLIMB, multiple treatment methods other than revascularization were selected, which caused the odd results. It is presumed to be due to input error or EVT failure.

The number of limbs of survivors with EVT was 405 (399 limbs) (**Table 5-1**), which was 9 (9) limbs less than the sum of the number in the column of minor reintervention or major reintervention in the row of limbs with EVT, 414 limbs (408 limbs) (**Table 5-6**). The number of limbs

of survivors with surgical reconstruction was 401 (389 limbs) (Table 5-1), which was 8 (8) limbs less than the sum of the number in the column of minor reintervention or major reintervention in the row of limbs with surgical reconstruction, 409 limbs (397 limbs) (Table 5-6). This is speculated to be due to death after reintervention. In Table 5-6, the objective for input of “revision for those excluding good bypass graft/EVT condition” is limb registered in stenosis, occlusion, deterioration, anastomosis disruption (aneurysm), infection, and others of “bypass graft/EVT condition.” The number of “bypass graft/EVT condition” of surgical reconstruction and total in Table 5-5 does not match the number of “revision for those excluding good bypass graft/EVT condition” in Table 5-6. This is because multiple items can be selected in “bypass graft/EVT condition,” and both “infection” and “anastomosis disruption (aneurysm)” were selected in a case. The total number of “the contralateral limb occlusive lesions” in Table 5-7 is 18 limbs (18 limbs) less than “life prognosis” in Table 5-1 due to missing values. The sum of the number of “treatment for contralateral limb” is less than that of “the contralateral limb occlusive lesions” as the objectives of “treatment for contralateral limb” excluded the limbs with no occlusive lesions in the contralateral limb. Because multiple registrations were possible, the sum of the number of “treatment for contralateral limb” was more than that of the limbs with occlusive lesions in the contralateral limb. When a patient died within 1 month, the information of “newly diagnosed malignant neoplasm” at death was registered in Table 5-8.

In addition to the above, there were some parts where the total number does not match in Tables 5-1 to 5-8. It might be because several items had multiple choices or missing values.

4. Conclusions

Vascular surgeons' contribution to the participating facilities is the sufficient amount of detailed data during busy clinical practice, which has gradually elucidated the current status of CLI treatment in Japan. Data on CLI in 2018 were elucidated, after the annual data in 2013–2017. The JCLIMB Committee is planning to continue publishing an annual report in the future. In 2017, the new concept, “chronic limb threatening ischemia,” was proposed instead of CLI,¹⁴⁾ and a new clinical guideline, the Global Vascular Guideline, was published instead of TASC in 2019.¹⁵⁾ The full name of JCLIMB has been changed to “Japan Chronic Limb-Threatening Ischemia Database,” and the data format has been revised to register the survey items according to the Global Vascular Guideline, which can be used in 2021.

The JCLIMB Committee expects that these study results

will be fed back to clinical situations to help develop medical care for CLI. The paper regarding 30 days' prediction model using the data of JCLIMB has been published,¹⁶⁾ and the paper regarding 2 years' prediction model was submitted. Facilities can participate in JCLIMB at any time by contacting the JSVS secretariat for details.

● “CLI” was used in this paper because the objectives registered in 2019 were based on CLI defined by TASC II.

5. Participant Facilities (83 Facilities in the Order of the Japanese Syllabary by Prefecture, Corporate Names are Omitted as a Rule)

Department of Vascular Surgery, Asahikawa Medical University Hospital

Department of Cardiovascular Surgery, National Hospital Organization Obihiro Hospital

Department of Cardiovascular Surgery, Nayoro City General Hospital

Department of Cardiovascular Surgery, Hirosaki University Hospital

Department of Surgery, Iwate Prefectural Isawa Hospital

Department of Surgery, Iwate Prefectural Chubu Hospital

Department of Vascular Surgery, Morioka Yuai Hospital

Department of Surgery, JR Sendai Hospital

Department of Cardiovascular Surgery, Sendai City Hospital

Department of Transplantation, Reconstruction and Endoscopic Surgery, Tohoku University Hospital

Department of Cardiovascular Surgery, Saiseikai Yamagata Saisei Hospital

Department of Vascular and Endovascular Surgery, Ibaraki Prefectural Central Hospital

Department of Cardiac and Vascular Surgery, Dokkyo Medical University Hospital

Department of Vascular and Endovascular Surgery, International University of Health and Welfare

Department of Vascular Surgery, Saiseikai Kawaguchi General Hospital

Department of Vascular Surgery, Saitama Medical Center, Saitama Medical University

Department of Cardiovascular Surgery, Saitama Medical Center, Jichi Medical University

Department of Cardiovascular Surgery, Jichi Medical University

Department of Surgery, Saitama City Hospital

Department of Cardiovascular Surgery, Shimada General Hospital

Department of Cardiovascular Surgery, Chiba Cerebral and Cardiovascular Center

Department of Cardiovascular Surgery, Itabashi Chuo Medical Center

- Department of Cardiovascular Surgery, IMS Tokyo Katsushika General Hospital
- Department of Surgery, Edogawa Hospital
- Department of Surgery, Tokyo Metropolitan Health and Medical Treatment Corporation, Okubo Hospital
- Department of Cardiovascular Surgery, Kyorin University
- Department of Surgery, Keio University School of Medicine
- Department of Vascular Surgery, International University of Health and Welfare, Mita Hospital
- Department of Vascular Surgery, Tokyo Medical and Dental University
- Department of Cardiovascular Surgery, Tokyo Medical University Hachioji Medical Center
- Department of Cardiovascular Surgery, Tokyo Medical University Hospital
- Department of Vascular Surgery, The Jikei University Kashiwa Hospital
- Department of Vascular Surgery, The Jikei University Hospital
- Department of Vascular Surgery, The University of Tokyo Hospital
- Department of Cardiovascular Surgery, Tokyo Rinkai Hospital
- Department of Vascular Surgery, Nihon University Itabashi Hospital
- Department of Surgery, Shonankamakura General Hospital
- Department of Cardiovascular Surgery, St. Marianna University School of Medicine
- Department of Surgery, Tomei Atsugi Hospital
- Department of Cardiovascular Surgery, Yokosuka General Hospital Uwamachi
- Department of Cardiovascular Surgery, National Hospital Organization, Kanazawa Medical Center
- Department of Cardiovascular Surgery, Shizuoka Red Cross Hospital
- Department of Surgery II, Yamanashi University Hospital
- Department of Vascular Surgery, Aichi Medical University Hospital
- Department of Vascular Surgery, Ichinomiya Municipal Hospital
- Department of Vascular Surgery, Japanese Red Cross Nagoya Daiichi Hospital
- Department of Vascular Surgery, Nagoya University Hospital
- Department of Vascular Surgery, Osaka Rosai Hospital
- Department of Vascular Surgery, Aijinkai Inoue Hospital
- Department of Vascular Surgery, Nippon Life Hospital
- Department of Vascular Surgery, Kansai Medical University Medical Center
- Department of Cardiovascular Surgery, Toyonaka Municipal Hospital
- Department of Cardiovascular Surgery, Suita Tokushukai Hospital
- Department of Cardiovascular Surgery, Tsukazaki Hospital
- Department of Cardiovascular Surgery, Kobe University Hospital
- Department of Thoracic and Cardiovascular Surgery, Wakayama Medical University Hospital
- Department of Cardiovascular Surgery, Tottori Prefectural Kousei Hospital
- Department of Cardiovascular Surgery, Tottori Prefectural Central Hospital
- Department of Cardiovascular Surgery, Okayama University Hospital
- Department of Cardiovascular Surgery, Kawasaki Medical School General Medical Center
- Department of Cardiovascular Surgery, Kawasaki Medical School Hospital
- Department of Cardiovascular and Respiratory Surgery, Hiroshima Prefectural Hospital
- Department of Cardiovascular Surgery, National Hospital Organization, Higashihiroshima Medical Center
- Department of Cardiovascular Surgery, Hiroshima University Hospital
- Department of Surgery, Saiseikai Yamaguchi General Hospital
- Department of Surgery 1, Yamaguchi University Hospital
- Department of Cardiovascular Surgery, Ehime Prefectural Central Hospital
- Department of Cardiovascular Surgery, Matsuyama Shimin Hospital
- Department of Vascular Surgery, Matsuyama Red Cross Hospital
- Department of Cardiovascular Surgery, Kochi Health Sciences Center
- Department of Cardiovascular Surgery, Kochi University Hospital
- Department of Vascular Surgery, National Hospital Organization, Kyushu Medical Center
- Department of Surgery and Science, Kyushu University Hospital
- Department of Cardiovascular Surgery, Kurume University Hospital
- Department of Vascular Surgery, Kokura Memorial Hospital
- Department of Surgery, Saiseikai Fukuoka General Hospital
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Disclosure Statement

The authors have no conflict of interest.

Additional Remarks

This report was authorized by the institutional review board of Saiseikai Yahata General Hospital. (Authorization No.185)

Additional Note

The original Annual Report was published in Japanese Journal of Vascular Surgery Vol. 31 (2022) No. 3; however, errors in numerical data were detected after the publication. The errata were published in Vol. 31 (2022) No. 5 of the same journal. This translation reflects that correction.

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Table 1-1 SVS Wifl classification original¹⁴⁾**Table 1-1-1** Wound

Grade	Ulcer	Gangrene
0	No ulcer	No gangrene
	Clinical description: ischemic rest pain (requires typical symptoms + ischemia grade 3); no wound.	
1	Small, shallow ulcer(s) on distal leg or foot; no exposed bone, unless limited to distal phalanx	No gangrene
	Clinical description: minor tissue loss. Salvageable with simple digital amputation (1 or 2 digits) or skin coverage.	
2	Deeper ulcer with exposed bone, joint or tendon; generally not involving the heel; gangrenous changes limited to digits shallow heel ulcer, without calcaneal involvement	Gangrenous changes limited to digits
	Clinical description: major tissue loss salvageable with multiple (3) digital amputations or standard TMA±skin coverage.	
3	Extensive, deep ulcer involving forefoot and/or midfoot; deep, full thickness heel ulcer±calcaneal involvement	Extensive gangrene involving forefoot and/or midfoot; full thickness heel necrosis 6 calcaneal involvement
	Clinical description: extensive tissue loss salvageable only with a complex foot reconstruction or nontraditional TMA (Chopart or Lisfranc); flap coverage or complex wound management needed for large soft tissue defect	

TMA: transmetatarsal amputation

Table 1-1-2 Ischemia

Grade	ABI	AP (mmHg)	TP, TcPO ₂ (mmHg)
0	≥0.80	>100	≥60
1	0.60–0.79	70–100	40–59
2	0.40–0.59	50–70	30–39
3	≤0.39	<50	<30

ABI: ankle brachial (pressure) index; PVR: pulse volume recording; SPP: skin perfusion pressure; TP: toe pressure; TcPO₂: transcutaneous oximetry

Patients with diabetes should have TP measurements. If arterial calcification precludes reliable ABI or TP measurements, ischemia should be documented by TcPO₂, SPP, PVR. If TP and ABI measurements result or in different grades, TP will be the primary determinant of ischemia grade.

Flat or minimally pulsatile forefoot PVR=grade 3

Table 1-1-3 Foot Infection

Grade	Clinical manifestation of infection	IDSA/PEDIS infection severity*
0	No symptoms or signs of infection	Uninfected
1	Infection present, as defined by the presence of at least 2 of the following items: Mild <ul style="list-style-type: none"> • Local swelling or induration • Erythema >0.5 to 2 cm around the ulcer • Local tenderness or pain • Local warmth • Purulent discharge (thick, opaque to white, or sanguineous secretion) Local infection involving only the skin and the subcutaneous tissue (without involvement of deeper tissues and without systemic signs as described below) Exclude other causes of an inflammatory response of the skin (e.g., trauma, gout, acute Charcot neuro-osteopathy, fracture, thrombosis, venous stasis)	Mild
2	Local infection (as described above) with erythema >2 cm, or involving structures deeper than skin and subcutaneous tissues (e.g., abscess, osteomyelitis, septic arthritis, fasciitis), and no systemic inflammatory response signs (as described below)	Moderate
3	Local infection (as described above) with the signs of SIRS, as manifested by two or more of the following: <ul style="list-style-type: none"> • Temperature >38°C or <36°C • Heart rate >90 beats/min • Respiratory rate >20 breaths/min or PaCO₂ <32 mmHg • White blood cell count >12000 or <4000 cu/mm or 10% immature (band) forms 	Severe

*SVS adaptation of Infectious Diseases Society of America (IDSA) and International Working Group on the Diabetic Foot (IWGDF) perfusion, extent/size

PaCO₂: partial pressure of arterial carbon dioxide; SIRS: systemic inflammatory response syndrome

An ischemia may complicate and increase the severity of any infection. Systemic infection may sometimes manifest with other clinical findings, such as hypo-tension, confusion, vomiting, or evidence of metabolic disturbances, such as acidosis, severe hyperglycemia, new-onset azotemia.

Table 1-2 SVS Wifl classification: Correlation of Wifl and items in JCLIMB

Table 1-2-1 Wound

Grade	Rutherford classification	Ulcer		Sites of gangrene
		Depth of ulcer (University of Texas classification: grade)	Sites of ulcer	
0	Class 4		No ulcer	No gangrene
1	Class 5, 6	I	Any portion	No gangrene
		II, III	Limited to digits	
2	Class 5, 6	I	Heel	Limited to digits
		II, III	Foot: distal metatarsal excluding heel	
3	Class 5, 6	II, III	Foot: proximal metatarsal, heel, ankle, lower leg	Extensive proximal to forefoot

Table 1-2-2 Ischemia

Grade	SPP (mmHg; calculating from the formula*)
0	>55
1	42–55
2	35–41
3	<35

* SPP=0.6853×TP+ 14.48

SPP: skin perfusion pressure; TP: toe pressure

Table 1-2-3 Foot Infection

Grade	Local infection: foot	Systemic infection (SIRS)
0 (-)		(-)
1 (+)	Involving only the skin and the subcutaneous tissue (Erythema around the ulcer; 0.5–2 cm)	(-)
2 (+)	Involving only the skin and the subcutaneous tissue (Erythema around the ulcer; >2 cm), or involving structures deeper than skin and subcutaneous tissues (e.g., abscess, osteomyelitis, septic arthritis, fasciitis)	(-)
3 (+)		(+)

Table 2 Patients' background**Table 2-1** Patients' background 1

a. Total

	n	Sex		Laterality		BMI (Median)	Pathogenesis				Age at registration			
		Male	Female	Right	Left		ASO	TAO	Vasculitis	Others	ASO	TAO	Vasculitis	Others
											Mean (±SD)	Mean (±SD)	Mean (±SD)	Mean (±SD)
Rutherford 4	204	134	70	96	108	21.1	203	0	1	0	74.7 (11.0)	—	74.0 (—)	—
Rutherford 5	709	482	227	395	314	21.3	691	7	6	5	75.1 (9.9)	62.3 (18.3)	72.0 (3.2)	70.0 (9.8)
Rutherford 6	157	109	48	71	86	20.8	153	0	2	2	73.9 (10.9)	—	78.5 (12.0)	70.5 (26.2)
Total	1070	725	345	562	508	21.2	1047	7	9	7	74.9 (10.3)	62.3 (18.3)	73.7 (5.7)	70.1 (13.3)

b. ASO

	n	Sex		Laterality		BMI (Median)	Age at registration
		Male	Female	Right	Left		Mean (±SD)
Rutherford 4	203	134	69	96	107	21.1	74.7 (11.0)
Rutherford 5	691	473	218	387	304	21.3	75.1 (9.9)
Rutherford 6	153	107	46	69	84	21.0	73.9 (10.9)
Total	1047	714	333	552	495	21.2	74.9 (10.3)

Vasculitis: Takayasu's arteritis, Collagen disease, Behcet disease, FMD etc., excluding TAO

Others: others including debranch bypasses for TEVAR or EVAR

ASO: arteriosclerosis obliterans; TAO: thromboangiitis obliterans; FMD: fibromuscular dysplasia; BMI: body mass index;

TEVAR: thoracic endovascular aortic aneurysm repair; EVAR: endovascular aortic aneurysm repair

Simultaneous bilateral treatments in one case were counted as 2 limbs in 2 cases.

Table 2-2 Patients' background 2

a. Total

	Diabetes			Diabetes therapy			Hypertension			Dyslipidemia			Smoking		
	(+) Management			Diet therapy	Medication	Insulin therapy	(+) Management			(+) Management			(+) Ex-smoker Current smoker		
	(-)	Management					(-)	Management		(-)	Management		(-)	Ex-smoker	Current smoker
		Good	Poor	Good	Poor	Good		Poor							
Rutherford 4	91	87	26	21	63	29	60	132	12	132	67	5	104	67	33
Rutherford 5	237	349	123	75	221	176	172	458	79	403	273	33	281	334	94
Rutherford 6	50	68	39	18	34	55	45	89	23	92	56	9	60	73	24
Total	378	504	188	114	318	260	277	679	114	627	396	47	445	474	151

b. ASO

	Diabetes			Diabetes therapy			Hypertension			Dyslipidemia			Smoking		
	(+) Management			Diet therapy	Medication	Insulin therapy	(+) Management			(+) Management			(+) Ex-smoker Current smoker		
	(-)	Management					(-)	Management		(-)	Management		(-)	Ex-smoker	Current smoker
		Good	Poor	Good	Poor	Good		Poor							
Rutherford 4	90	87	26	21	63	29	60	131	12	131	67	5	103	67	33
Rutherford 5	223	346	122	74	218	176	168	445	78	391	269	31	274	325	92
Rutherford 6	46	68	39	18	34	55	43	87	23	90	54	9	58	72	23
Total	359	501	187	113	315	260	271	663	113	612	390	45	435	464	148

HbA1c: hemoglobin A1c; LDL: low-density lipoprotein; NGSP: national glycohemoglobin standardization program

Blood pressure management good: diabetes or renal failure (-) <140/90 mmHg (+) <130/80 mmHg. Diabetes management good: HbA1c <7.0% (NGSP). Dyslipidemia management good: other sclerotic lesions (-) LDL <100 mg/dL, (+) LDL <80 mg/dL.

Table 2-3 Patients' background 3

	a. Total													
	Ischemic heart disease				Heart failure		Cerebrovascular disease		Renal dysfunction					
	(-)	(+) Medical treatment			(-)	(+)	(-)	(+)	(-)	(+) G3a G3b G4 G5 G5D				
Rutherford 4	156	17	19	12	179	25	170	34	94	13	19	7	1	70
Rutherford 5	403	79	132	95	610	99	561	148	223	77	60	38	4	307
Rutherford 6	84	23	29	21	118	39	130	27	56	14	13	5	3	66
Total	643	119	180	128	907	163	861	209	373	104	92	50	8	443

	b. ASO													
	Ischemic heart disease				Heart failure		Cerebrovascular disease		Renal dysfunction					
	(-)	(+) Medical treatment			(-)	(+)	(-)	(+)	(-)	(+) G3a G3b G4 G5 G5D				
Rutherford 4	155	17	19	12	178	25	169	34	93	13	19	7	1	70
Rutherford 5	386	79	131	95	596	95	544	147	212	75	56	37	4	307
Rutherford 6	81	23	28	21	115	38	126	27	53	14	13	5	3	65
Total	622	119	178	128	889	158	839	208	358	102	88	49	8	442

PCI: percutaneous coronary intervention; CABG: coronary arterial bypass grafting

Heart failure (+): history of admission due to heart failure, clinical symptoms due to heart failure confirmed by ultrasound examination, apparently decreased cardiac function by ultrasound examination without clinical symptoms

Renal dysfunction: (-) ($60 \leq$), G3a (45~59), G3b (30~44), G4 (15~29), G5 (<15), G5D (<15 with hemodialysis). New CKD risk stratification by eGFR (mL/min/1.73m²) in "Clinical Practice Guidebook for Diagnosis and Treatment of Chronic Kidney Disease 2012"

eGFR: estimated glomerular filtration rate; CKD: chronic kidney disease

Table 2-4 Patients' background 4

	a. Total														
	Malignant neoplasm				Site of malignant neoplasm										
	(-)	(+) History of cancer			Head and neck	Esophagus	Lung	Stomach	Hepatobiliary pancreas	Colon	Breast	Uterus	Ovary	Prostate	Others
Rutherford 4	179	16	8	1	2	2	4	5	2	6	1	0	0	0	4
Rutherford 5	635	47	21	6	3	0	11	19	5	14	3	3	0	7	13
Rutherford 6	139	11	6	1	2	2	2	5	1	2	1	0	0	1	3
Total	953	74	35	8	7	4	17	29	8	22	5	3	0	8	20

	b. ASO														
	Malignant neoplasm				Site of malignant neoplasm										
	(-)	(+) History of cancer			Head and neck	Esophagus	Lung	Stomach	Hepatobiliary pancreas	Colon	Breast	Uterus	Ovary	Prostate	Others
Rutherford 4	178	16	8	1	2	2	4	5	2	6	1	0	0	0	4
Rutherford 5	620	45	20	6	3	0	10	18	5	13	3	3	0	7	13
Rutherford 6	136	11	6	0	2	2	2	5	1	2	1	0	0	1	3
Total	934	72	34	7	7	4	16	28	8	21	5	3	0	8	20

*Including palliative therapy or recurrence

Table 2-5 Patients' background 5

a. Total

	Contralateral limb occlusive lesions							Vascular lesions excluding occlusion																	
	(-)	(+) <table border="1"> <thead> <tr> <th>Asymptomatic</th> <th>Intermittent claudication</th> <th colspan="3">CLI</th> <th>Post-treatment</th> </tr> <tr> <th></th> <th></th> <th>R4</th> <th>R5</th> <th>R6</th> <th></th> </tr> </thead> </table>						Asymptomatic	Intermittent claudication	CLI			Post-treatment			R4	R5	R6		(-)	TAA	AAA (including IAA)	Peripheral artery aneurysm	Carotid stenosis	Others
		Asymptomatic	Intermittent claudication	CLI			Post-treatment																		
		R4	R5	R6																					
Rutherford 4	65	44	16	29	0	0	41	186	2	7	0	5	4												
Rutherford 5	187	212	37	16	117	3	125	652	6	16	0	21	14												
Rutherford 6	34	53	4	1	12	19	29	136	0	1	2	13	5												
Total	286	309	57	46	129	22	195	974	8	24	2	39	23												

b. ASO

	Contralateral limb occlusive lesions							Vascular lesions excluding occlusion																	
	(-)	(+) <table border="1"> <thead> <tr> <th>Asymptomatic</th> <th>Intermittent claudication</th> <th colspan="3">CLI</th> <th>Post-treatment</th> </tr> <tr> <th></th> <th></th> <th>R4</th> <th>R5</th> <th>R6</th> <th></th> </tr> </thead> </table>						Asymptomatic	Intermittent claudication	CLI			Post-treatment			R4	R5	R6		(-)	TAA	AAA (including IAA)	Peripheral artery aneurysm	Carotid stenosis	Others
		Asymptomatic	Intermittent claudication	CLI			Post-treatment																		
		R4	R5	R6																					
Rutherford 4	65	44	16	29	0	0	40	185	2	7	0	5	4												
Rutherford 5	176	209	36	15	116	3	124	637	5	15	0	21	13												
Rutherford 6	31	52	4	1	12	19	29	134	0	1	0	13	5												
Total	272	305	56	45	128	22	193	956	7	23	0	39	22												

CLI: critical limb ischemia; TAA: thoracic aortic aneurysm; AAA: abdominal aortic aneurysm; IAA: iliac artery aneurysm

Table 2-6 Patients' background 6

a. Total

	Fatty acid							
	Arachidonic acid (AA)		Eicosapentaenoic acid (EPA)		Docosahexaenoic acid (DHA)		EPA/AA	
	n	Median	n	Median	n	Median	n	Median
Rutherford 4	5	201.6	5	85.4	5	154.5	5	0.4
Rutherford 5	12	188.2	12	48.2	12	100.9	12	0.3
Rutherford 6	3	66.8	3	26.3	3	58.5	3	0.4
Total	20	193.7	20	53.7	20	100.9	20	0.3

b. ASO

	Fatty acid							
	Arachidonic acid (AA)		Eicosapentaenoic acid (EPA)		Docosahexaenoic acid (DHA)		EPA/AA	
	n	Median	n	Median	n	Median	n	Median
Rutherford 4	5	201.6	5	85.4	5	154.5	5	0.4
Rutherford 5	12	188.2	12	48.2	12	100.9	12	0.3
Rutherford 6	3	66.8	3	26.3	3	58.5	3	0.4
Total	20	193.7	20	53.7	20	100.9	20	0.3

Table 3 Pretreatment condition
Table 3-1 Pretreatment condition 1

Ambulatory function (Taylor's classification)		Site of ulcer				Depth of ulcer (University of Texas classification: grade)				Site of gangrene				Main site of ulcer/gangrene to be treated										
Ambulatory	Ambulatory/ non-ambulatory	Foot distal metatarsal	Foot proximal metatarsal	Heel	Ankle	Lower leg	Only gangrene w/o ulcer	I	II	III	Digits	Foot distal metatarsal	Foot proximal metatarsal	Heel	Ankle	Lower leg	Only ulcer w/o gangrene	Digits	Foot distal metatarsal	Foot proximal metatarsal	Heel	Ankle	Lower leg	
Rutherford 4	148	28	28	57	17	9	74	403	112	127	332	49	13	27	4	3	303	544	86	14	42	15	6	
Rutherford 5	431	143	135	46	10	14	26	29	37	68	51	47	28	42	10	10	21	33	39	18	46	9	12	
Rutherford 6	58	40	59	44	103	27	23	432	149	195	383	96	41	69	14	13	324	577	125	32	88	24	18	
Total	637	211	222	549	132	43	100	432	149	195	383	96	41	69	14	13	324	577	125	32	88	24	18	
b. ASO																								
Ambulatory function (Taylor's classification)		Site of ulcer				Depth of ulcer (University of Texas classification: grade)				Site of gangrene				Main site of ulcer/gangrene to be treated										
Ambulatory	Ambulatory/ non-ambulatory	Foot distal metatarsal	Foot proximal metatarsal	Heel	Ankle	Lower leg	Only gangrene w/o ulcer	I	II	III	Digits	Foot distal metatarsal	Foot proximal metatarsal	Heel	Ankle	Lower leg	Only ulcer w/o gangrene	Digits	Foot distal metatarsal	Foot proximal metatarsal	Heel	Ankle	Lower leg	
Rutherford 4	147	28	28	57	17	9	73	394	108	123	326	48	11	27	4	3	294	530	84	12	42	15	6	
Rutherford 5	417	140	134	46	10	13	25	28	36	67	48	46	26	41	10	10	21	32	38	18	45	9	11	
Rutherford 6	56	39	58	44	103	27	22	422	144	190	374	94	37	68	14	13	315	562	122	30	87	24	17	
Total	620	207	220	536	128	41	98	422	144	190	374	94	37	68	14	13	315	562	122	30	87	24	17	

University of Texas classification: grade I: superficial, not involving tendon, capsule, or bone, II: penetrating to tendon/capsule, III: penetrating to bone or joint)

Table 3-2 Pretreatment condition 2

		Blood test										Hemodynamics						Infection*1)						
Temperature >38°C		WBC		CRP		Alb		Cr		ABI		TBI		SPP		Toe pressure		Local (foot)		Systemic				
	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median	≤2cm	>2cm	(+)	(-)		
	(-)																							
Rutherford 4	200	4	201	6500	196	0.52	193	3.6	200	1.35	109	0.57	6	0.55	85	19.0	7	76.0	24	1	1	3	199	
Rutherford 5	694	15	698	7130	676	1.13	673	3.4	695	1.64	450	0.62	33	0.29	440	21.0	36	35.0	444	168	41	54	9	700
Rutherford 6	131	26	153	8800	151	4.06	150	2.9	152	1.40	88	0.68	4	0.21	79	24.0	5	33.0	45	30	26	56	13	144
Total	1025	45	1052	7235	1023	1.19	1016	3.3	1047	1.53	647	0.62	43	0.31	604	21.0	48	36.5	513	199	68	111	25	1043
a. Total																								
b. ASO																								
		Blood test										Hemodynamics						Infection*1)						
Temperature >38°C		WBC		CRP		Alb		Cr		ABI		TBI		SPP		Toe pressure		Local (foot)		Systemic				
	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median	≤2cm	>2cm	(+)	(-)		
	(-)																							
Rutherford 4	199	4	200	6500	195	0.52	192	3.6	199	1.36	108	0.57	6	0.55	84	19.0	7	76.0	23	1	1	3	198	
Rutherford 5	676	15	681	7100	659	1.13	656	3.4	678	1.71	441	0.62	33	0.29	429	21.0	36	35.0	433	163	39	54	9	682
Rutherford 6	127	26	150	8750	148	4.00	148	2.9	150	1.42	88	0.68	4	0.21	78	24.0	5	33.0	45	29	25	54	13	140
Total	1002	45	1031	7200	1002	1.19	996	3.3	1027	1.57	637	0.62	43	0.31	591	21.0	48	36.5	501	193	65	109	25	1020

WBC: white blood cell; CRP: C reactive protein; Alb: albumin; Cr: creatinine; ABI: ankle brachial (pressure) index; TBI: toe brachial (pressure) index; SPP: skin perfusion pressure; SIRS: systemic inflammatory response syndrome
 *1) Presence of infection was defined as by the presence of at least 2 of the following issues: ①Local swelling or induration, ②erythema >5mm to ≤2cm around the ulcer, ③Local tenderness or pain, ④Local warmth, ⑤Purulent discharge (thick opaque to white, or sanguineous secretion)

*2) Local infection are skin and subcutaneous tissue was classified by the spreading of erythema (≤2cm or >2cm around the ulcer/gangrene)

*3) Local infection involving structures deeper than skin and subcutaneous tissues (e.g., abscess, osteomyelitis, septic arthritis, fasciitis)

*4) The signs of SIRS are manifested by two or more of the following: ①Temperature >38°C or <36°C, ②Heart rate >90beats/min, ③Respiratory rate >20 breaths/min or PaCO₂<32mmHg, ④White blood cell count >12000 or <4000cu/mm or 10% immature (band) forms

Table 3-3 Pretreatment condition 3

	Diagnostic imaging			Site of occlusion			TASC II classification aortoiliac					TASC II classification femoropopliteal				
	IADSA	CTA	Others	Aortoiliac	Femoropop	Lower leg/foot	A	B	C	D	No lesion	A	B	C	D	No lesion
	Rutherford 4	111	116	13	55	137	89	11	14	7	13	4	6	20	28	93
Rutherford 5	435	410	19	144	423	457	50	23	18	36	9	86	97	89	246	105
Rutherford 6	101	91	3	36	84	105	13	3	3	17	0	21	14	17	54	28
Total	647	617	35	235	644	651	74	40	28	66	13	113	131	134	393	147

b. ASO

	Diagnostic imaging			Site of occlusion			TASC II classification aortoiliac					TASC II classification femoropopliteal				
	IADSA	CTA	Others	Aortoiliac	Femoropop	Lower leg/foot	A	B	C	D	No lesion	A	B	C	D	No lesion
	Rutherford 4	110	116	13	55	137	88	11	14	7	13	4	6	20	28	93
Rutherford 5	427	397	18	139	415	445	46	23	18	35	9	86	96	87	241	100
Rutherford 6	99	88	3	35	82	102	13	3	3	16	0	21	14	17	53	26
Total	636	601	34	229	634	635	70	40	28	64	13	113	130	132	387	139

IADSA: intra-arterial digital subtraction angiography; CTA: computed tomography angiography

Table 3-4 Pretreatment condition 4

a. Total

	Bollinger Score													
	Common femoral		Deep femoral		Superficial femoral: proximal		Superficial femoral: distal		Popliteal: proximal		Popliteal: distal		Tibioperoneal trunk	
	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median
Rutherford 4	62	1.0	62	1.0	62	6.0	62	6.0	61	4.0	61	3.0	61	3.0
Rutherford 5	312	1.0	313	1.0	310	3.0	310	4.0	312	3.0	312	2.0	309	3.0
Rutherford 6	79	2.0	79	1.0	79	4.0	79	4.0	79	3.0	80	2.0	80	4.0
Total	453	1.0	454	1.0	451	4.0	451	5.0	452	3.0	453	2.0	450	3.0

b. ASO

	Bollinger Score													
	Common femoral		Deep femoral		Superficial femoral: proximal		Superficial femoral: distal		Popliteal: proximal		Popliteal: distal		Tibioperoneal trunk	
	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median
Rutherford 4	62	1.0	62	1.0	62	6.0	62	6.0	61	4.0	61	3.0	61	3.0
Rutherford 5	309	1.0	310	1.0	307	3.0	307	4.0	309	3.0	309	2.0	306	3.0
Rutherford 6	78	2.0	78	1.0	78	3.5	78	4.0	78	3.0	79	2.0	79	4.0
Total	449	1.0	450	1.0	447	4.0	447	5.0	448	3.0	449	2.0	446	3.0

Table 3-5 Pretreatment condition 5

a. Total

	Bollinger Score													
	Posterior tibial: proximal		Posterior tibial: distal		Anterior tibial: proximal		Anterior tibial: distal		Peroneal: proximal		Peroneal: distal		Foot	
	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median
Rutherford 4	61	15.0	61	13.0	60	5.0	59	6.0	58	4.0	58	4.0	49	3.0
Rutherford 5	306	13.0	305	13.0	308	13.0	306	13.0	307	6.0	306	6.0	281	6.0
Rutherford 6	80	15.0	79	13.0	80	11.5	79	6.0	80	6.0	79	6.0	67	13.0
Total	447	13.0	445	13.0	448	13.0	444	13.0	445	6.0	443	6.0	397	6.0

b. ASO

	Bollinger Score													
	Posterior tibial: proximal		Posterior tibial: distal		Anterior tibial: proximal		Anterior tibial: distal		Peroneal: proximal		Peroneal: distal		Foot	
	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median
Rutherford 4	61	15.0	61	13.0	60	5.0	59	6.0	58	4.0	58	4.0	49	3.0
Rutherford 5	304	13.0	303	13.0	305	13.0	303	13.0	305	6.0	303	6.0	278	6.0
Rutherford 6	79	15.0	78	13.0	79	12.0	78	6.0	79	6.0	78	6.0	66	13.0
Total	444	13.0	442	13.0	444	13.0	440	13.0	442	6.0	439	6.0	393	6.0

Table 3-6 SVS Wifl classification

a. Total

	Wound				Ischemia				foot Infection				Stage			
	0	1	2	3	0	1	2	3	0	1	2	3	1	2	3	4
Rutherford 4	204	0	0	0	14	30	17	83	24	1	1	1	4	17	1	1
Rutherford 5	0	236	317	144	55	84	70	382	444	165	93	5	46	42	185	310
Rutherford 6	0	5	25	115	13	14	10	72	45	27	72	13	2	2	8	91
Total	204	241	342	259	82	128	97	537	513	193	166	19	52	61	194	402

b. ASO

	Wound				Ischemia				foot Infection				Stage			
	0	1	2	3	0	1	2	3	0	1	2	3	1	2	3	4
Rutherford 4	203	0	0	0	14	29	17	83	23	1	1	1	3	17	1	1
Rutherford 5	0	228	311	140	54	84	68	372	433	160	91	5	46	41	180	303
Rutherford 6	0	5	25	111	13	14	10	71	45	26	69	13	2	2	8	90
Total	203	233	336	251	81	127	95	526	501	187	161	19	51	60	189	394

Table 4 Treatment
Table 4-1 Treatment 1

	a. Total																				
	Treatment				Angiogenic therapy					Amputation				Reoperation							
	Pharmacological therapy	Angiogenic therapy	Arterial reconstruction	Major amputation	Lumber sympathectomy	Bone marrow	Bone marrow	Peripheral blood	Others	Toe	Metatarsal	Chopart/Lisfranc	Syme	Below knee	Above knee-disarticulation	Hip disarticulation	Unknown	(-)	(+)		
																		1X	2X	3X \leq	
Rutherford 4	66	0	189	1	0	0	0	0	0	0	0	0	0	0	0	0	1	141	33	14	15
Rutherford 5	212	1	675	10	0	0	0	0	1	14	9	0	0	0	0	0	9	542	86	28	44
Rutherford 6	45	1	147	14	0	0	0	1	0	1	3	0	0	2	1	0	4	130	16	6	1
Total	323	2	1011	25	0	0	0	1	1	15	12	0	0	2	1	0	14	813	135	48	60
b. ASO																					
	b. ASO																				
	Treatment				Angiogenic therapy					Amputation				Reoperation							
	Pharmacological therapy	Angiogenic therapy	Arterial reconstruction	Major amputation	Lumber sympathectomy	Bone marrow	Bone marrow	Peripheral blood	Others	Toe	Metatarsal	Chopart/Lisfranc	Syme	Below knee	Above knee-disarticulation	Hip disarticulation	Unknown	(-)	(+)		
																		1X	2X	3X \leq	
Rutherford 4	65	0	188	1	0	0	0	0	0	0	0	0	0	0	0	0	1	140	33	14	15
Rutherford 5	205	1	659	10	0	0	0	0	1	14	8	0	0	0	0	0	9	531	82	27	42
Rutherford 6	45	1	143	14	0	0	0	1	0	1	3	0	0	2	1	0	4	127	15	6	1
Total	315	2	990	25	0	0	0	1	1	15	11	0	0	2	1	0	14	798	130	47	58

Table 4-2 Treatment 2

a. Total	Bypass												TEA		
	Aorta-aorta (with suprarenal clamp) femoral*	Aorta-femora-proximal popliteal	Femora-distal popliteal	Femoral-crurol/foot	Popliteal-crurol/foot	Anatomical others	Axillary-femoral	Femoral-femoral	Extraanatomical others	Aorta/iliac	Femoral/popliteal	Others	EVT		
														TEA	
Rutherford 4	0	0	10	10	20	2	2	3	2	3	13	0	112		
Rutherford 5	0	30	40	94	109	3	4	4	4	2	44	6	408		
Rutherford 6	0	7	8	11	24	0	4	6	1	0	11	1	90		
Total	0	47	58	125	152	5	10	13	7	5	68	7	610		
b. ASO															
	Bypass												TEA		
	Aorta-aorta (with suprarenal clamp) femoral*	Femora-proximal popliteal	Femora-distal popliteal	Femoral-crurol/foot	Popliteal-crurol/foot	Anatomical others	Axillary-femoral	Femoral-femoral	Extraanatomical others	Aorta/iliac	Femoral/popliteal	Others	EVT		
														TEA	
Rutherford 4	0	10	10	20	18	2	2	3	2	3	13	0	112		
Rutherford 5	0	30	40	89	107	3	4	4	1	2	44	6	401		
Rutherford 6	0	6	6	11	24	0	4	5	1	0	11	1	90		
Total	0	46	56	120	149	5	10	12	4	5	68	7	603		

TEA: thromboendarterectomy; EVT: endovascular treatment/therapy
 *Including aorta-femoral, aorta-iliac, ilio-femoral bypass

Table 4-3 Treatment 3

a. Total	EVT												Vein usage					
	Aorta/iliac	Femoral/popliteal	Tibioperoneal/foot	Others	Vascular material			Vein			Vein quality							
					Polyester	ePTFE	Vein	Others	(-)	In-situ	Non-reversed	Reversed	Spliced	Patch	Good	Poor		
Rutherford 4	37	61	36	7	4	16	58	0	17	4	17	26	4	9	5	50	3	
Rutherford 5	105	200	196	4	11	34	254	3	36	34	109	80	18	20	13	231	10	
Rutherford 6	23	51	50	1	2	15	47	1	11	1	21	20	0	5	3	39	5	
Total	165	312	282	12	17	65	359	4	64	39	147	126	22	34	21	320	18	
b. ASO																		
	EVT												Vein usage					
	Aorta/iliac	Femoral/popliteal	Tibioperoneal/foot	Others	Vascular material			Vein			Vein quality							
					Polyester	ePTFE	Vein	Others	(-)	In-situ	Non-reversed	Reversed	Spliced	Patch	Good	Poor		
Rutherford 4	37	61	36	7	4	16	57	0	17	4	16	26	4	9	5	49	3	
Rutherford 5	102	198	192	4	11	34	247	3	34	33	106	79	16	20	13	224	10	
Rutherford 6	23	51	50	1	2	14	44	1	11	1	19	19	0	5	3	36	5	
Total	162	310	278	12	17	64	348	4	62	38	141	124	20	34	21	309	18	

ePTFE: expanded polytetrafluoroethylene

Table 4-4 Treatment 4

		Distal bypass																	
		Proximal anastomosis					Distal anastomosis			Distal anastomosis: site of crural artery			Distal anastomosis: site of foot artery						
External iliac	Common femoral	Deep femoral	Superficial femoral	Proximal popliteal	Distal popliteal	Crural	Others	Crural	Foot	Tibioperoneal trunk	Posterior tibial	Anterior tibial	Peroneal	Posterior tibial	Anterior tibial	Peroneal	Dorsal pedis	Plantar	
Rutherford 4	1	13	2	4	5	5	6	3	23	16	2	14	3	4	3	3	0	9	1
Rutherford 5	0	54	4	34	25	71	7	7	77	126	4	42	24	7	22	17	2	77	12
Rutherford 6	0	6	1	4	8	15	0	1	17	18	2	10	4	1	4	2	0	11	1
Total	1	73	7	42	38	91	13	11	117	160	8	66	31	12	29	22	2	97	14
b. ASO																			
		Distal bypass																	
		Proximal anastomosis					Distal anastomosis			Distal anastomosis: site of crural artery			Distal anastomosis: site of foot artery						
External iliac	Common femoral	Deep femoral	Superficial femoral	Proximal popliteal	Distal popliteal	Crural	Others	Crural	Foot	Tibioperoneal trunk	Posterior tibial	Anterior tibial	Peroneal	Posterior tibial	Anterior tibial	Peroneal	Dorsal pedis	Plantar	
Rutherford 4	1	13	2	4	5	5	3	22	16	2	13	3	3	4	3	3	0	9	1
Rutherford 5	0	53	4	32	23	70	6	7	76	120	4	42	24	6	20	17	1	75	10
Rutherford 6	0	6	1	4	8	15	0	1	17	18	2	10	4	1	4	2	0	11	1
Total	1	72	7	40	36	90	11	11	115	154	8	65	31	11	27	22	1	95	12

Table 4-5 Treatment 5

a. Total

	Pharmacological therapy					
	Antiplatelet	Anticoagulant	Prostaglandin	Heparin	Statin	Others
Rutherford 4	96	15	1	6	14	6
Rutherford 5	289	31	23	32	56	23
Rutherford 6	66	9	7	8	9	3
Total	451	55	31	46	79	32

b. ASO

	Pharmacological therapy					
	Antiplatelet	Anticoagulant	Prostaglandin	Heparin	Statin	Others
Rutherford 4	95	15	1	6	14	5
Rutherford 5	283	30	23	32	55	20
Rutherford 6	66	9	7	8	9	3
Total	444	54	31	46	78	28

Table 4-6 Treatment 6

a. Total

	Femoro-proximal popliteal bypass	Femoro-distal popliteal bypass	Femoro-crural/foot bypass	Popliteal-crural/foot bypass
Polyester	3	1	0	1
ePTFE	28	7	8	3
Vein	17	49	115	145
Artery	1	0	6	5
Others	1	2	0	0
(-)	0	0	0	0
Total	50	59	129	154

b. ASO

	Femoro-proximal popliteal bypass	Femoro-distal popliteal bypass	Femoro-crural/foot bypass	Popliteal-crural/foot bypass
Polyester	3	1	0	1
ePTFE	28	7	8	3
Vein	16	47	110	142
Artery	1	0	6	5
Others	1	2	0	0
(-)	0	0	0	0
Total	49	57	124	151

ePTFE: expanded polytetrafluoroethylene

Table 5 Outcomes early (one month) after treatment therapeutic measures: EVT (only EVT without surgical reconstruction), Surgical reconstruction (surgical reconstruction with or without EVT)

Table 5-1 Life prognosis/causes of death

	Life prognosis											Causes of death						
	Alive	Dead	Intraoperative death	Cardiac disease			Cerebrovascular disease			Malignant neoplasm	Aortic aneurysm, dissection		Infection		Ischemic enteritis	Gastrointestinal bleeding	Others	Unknown
				Hemorrhage	Infarction	Unknown	Hemorrhage	Infarction	Unknown		Diseased limb	Others	Diseased limb	Others				
Local condition	137	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	603	19	0	7	0	1	0	2	0	0	0	0	0	0	0	0	7	1
	114	10	0	2	0	0	0	0	0	0	0	0	0	3	1	0	4	0
Therapeutic measures	48	4	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0
	405	16	0	7	0	0	0	1	0	0	2	1	0	2	1	0	4	1
	401	12	0	4	0	1	0	1	0	0	1	0	0	1	0	0	5	0
Total	854	32	0	11	0	1	0	2	0	0	5	1	0	5	1	0	11	1

b. ASO

	Life prognosis											Causes of death						
	Alive	Dead	Intraoperative death	Cardiac disease			Cerebrovascular disease			Malignant neoplasm	Aortic aneurysm, dissection		Infection		Ischemic enteritis	Gastrointestinal bleeding	Others	Unknown
				Hemorrhage	Infarction	Unknown	Hemorrhage	Infarction	Unknown		Diseased limb	Others	Diseased limb	Others				
Local condition	136	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	586	19	0	7	0	1	0	2	0	0	1	0	0	1	0	0	7	1
	112	10	0	2	0	0	0	0	0	0	0	0	0	3	1	0	4	0
Therapeutic measures	46	4	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0
	399	16	0	7	0	0	0	1	0	0	2	1	0	2	1	0	4	1
	389	12	0	4	0	1	0	1	0	0	1	0	0	1	0	0	5	0
Total	834	32	0	11	0	1	0	2	0	0	5	1	0	5	1	0	11	1

EVT: endovascular treatment

Table 5-2 Perioperative complications 1

	a. Total														
	Cardiac disease			Cerebrovascular disease				Pneumonia			Wound complication		Peripheral embolism		
	(-)	Angina	Serious arrhythmia	Myocardial infarction	(-)	TIA	Functional loss (-)	Functional loss (+)	(-)	(+)	(-)	(+)	(-)	(+)	Minor (including blue toe)
Local condition	123	2	2	0	125	1	1	0	125	2	118	9	125	2	0
Rutherford 4		10	3	2	584	0	4	5	579	14	571	22	586	6	1
Rutherford 5	114	2	2	2	116	0	3	1	116	4	113	7	119	1	0
Rutherford 6															
Therapeutic measures	5	0	2	0	7	0	0	0	7	0	5	2	7	0	0
Non-reconstruction		6	0	3	416	0	2	3	406	15	413	8	412	8	1
EVT	412														
Surgical reconstruction	398	8	5	1	402	1	6	3	407	5	384	28	411	1	0
Total	815	14	7	4	825	1	8	6	820	20	802	38	830	9	1

	b. ASO														
	Cardiac disease			Cerebrovascular disease				Pneumonia			Wound complication		Peripheral embolism		
	(-)	Angina	Serious arrhythmia	Myocardial infarction	(-)	TIA	Functional loss (-)	Functional loss (+)	(-)	(+)	(-)	(+)	(-)	(+)	Minor (including blue toe)
Local condition	122	2	2	0	124	1	1	0	124	2	117	9	124	2	0
Rutherford 4		10	3	2	569	0	4	5	564	14	557	21	571	6	1
Rutherford 5	112	2	2	2	115	0	2	1	114	4	111	7	117	1	0
Rutherford 6															
Therapeutic measures	5	0	2	0	7	0	0	0	7	0	5	2	7	0	0
Non-reconstruction		6	0	3	410	0	2	3	400	15	407	8	406	8	1
EVT	406														
Surgical reconstruction	386	8	5	1	391	1	5	3	395	5	373	27	399	1	0
Total	797	14	7	4	808	1	7	6	802	20	785	37	812	9	1

TIA: transient ischemic attack; EVT: endovascular treatment

Table 5-3 Perioperative complications 2

	Hemorrhage		Site of bleeding			Outcome of bleeding			Complication due to contrast medium		Complication at puncture site		
	(-)	(+) (+)	Brain	GI tract	Others	Cured	Uncured	Dead	Others	(-)	(+) (+)	(-)	(+) (+)
Local condition	124	2	1	0	2	0	0	0	0	127	0	68	0
Rutherford 4	581	11	1	0	4	7	8	1	2	590	3	352	3
Rutherford 5	114	5	1	0	2	3	5	0	0	120	0	65	1
Rutherford 6													
Therapeutic measures	7	0	0	0	0	0	0	0	0	7	0	13	0
Non-reconstruction	415	5	1	0	2	3	5	0	0	419	2	417	4
EVT	397	13	2	0	6	7	10	1	2	411	1	55	0
Surgical reconstruction													
Total	819	18	3	0	8	10	15	1	2	837	3	485	4

	Hemorrhage		Site of bleeding			Outcome of bleeding			Complication due to contrast medium		Complication at puncture site		
	(-)	(+) (+)	Brain	GI tract	Others	Cured	Uncured	Dead	Others	(-)	(+) (+)	(-)	(+) (+)
Local condition	123	2	1	0	2	0	0	0	0	126	0	68	0
Rutherford 4	567	10	1	0	4	6	7	1	2	575	3	345	3
Rutherford 5	112	5	1	0	2	3	5	0	0	118	0	65	1
Rutherford 6													
Therapeutic measures	7	0	0	0	0	0	0	0	0	7	0	13	0
Non-reconstruction	409	5	1	0	2	3	5	0	0	413	2	411	4
EVT	386	12	2	0	6	6	9	1	2	399	1	54	0
Surgical reconstruction													
Total	802	17	3	0	8	9	14	1	2	819	3	478	4

GI: gastrointestinal; EVT: endovascular treatment

Table 5-4 Hemodynamics

	Immediate after the treatment						One month after the treatment					
	ABI		Ankle pressure		SPP		ABI		Ankle pressure		SPP	
	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median
Local condition	75	0.83	64	107.0	35	38.0	68	0.83	59	110.0	27	40.0
	288	0.87	271	111.0	263	41.0	215	0.91	199	123.0	174	43.0
Rutherford 6	36	0.85	36	114.5	25	42.0	31	0.89	32	116.5	27	43.0
Therapeutic measures	21	0.84	17	110.0	16	35.0	11	0.86	9	110.0	8	33.5
EVT	230	0.84	216	110.0	161	38.0	173	0.90	163	123.0	112	41.5
Surgical reconstruction	148	0.86	138	113.0	146	44.5	130	0.88	118	113.0	108	42.5
Total	399	0.85	371	111.0	323	41.0	314	0.89	290	119.5	228	41.5
b. ASO												
	Immediate after the treatment						One month after the treatment					
	ABI		Ankle pressure		SPP		ABI		Ankle pressure		SPP	
	n	Median	n	Median	n	Median	n	Median	n	Median	n	Median
Local condition	75	0.83	64	107.0	35	38.0	67	0.82	58	109.5	27	40.0
	281	0.86	266	112.0	257	41.0	212	0.91	196	123.5	171	43.0
Rutherford 6	36	0.85	36	114.5	25	42.0	31	0.89	32	116.5	27	43.0
Therapeutic measures	20	0.84	17	110.0	16	35.0	11	0.86	9	110.0	8	33.5
EVT	225	0.84	212	110.5	158	38.0	172	0.91	162	123.0	112	41.5
Surgical reconstruction	147	0.86	137	113.0	143	45.0	127	0.87	115	112.0	105	42.0
Total	392	0.85	366	111.0	317	41.0	310	0.89	286	119.5	225	41.0

ABI: ankle brachial (pressure) index; SPP: skin perfusion pressure; EVT: endovascular treatment

Table 5-5 Condition of the limbs

	a. Total												b. ASO											
	Bypass graft/EVT condition						Clinical symptom of the limb						Ischemic wound						Ambulatory function at discharge (Taylor's classification)					
	Good	Stenosis	Occlusion	Deterioration	Anastomosis disruption (aneurysm)	Others	Improved	No change	Deteriorated	Cured	Improved	Uncured	Unknown	Ambulatory	Ambulatory/homebound	Nonambulatory								
Local condition	114	2	7	0	0	1	3	116	16	4	88	23	22	3	97	21	22							
Rutherford 4	535	16	31	0	1	0	9	494	101	17	143	349	117	3	330	140	152							
Rutherford 5	98	3	6	1	1	2	5	83	17	12	17	68	27	0	37	32	55							
Rutherford 6	0	0	0	0	0	0	0	29	5	3	12	19	6	0	25	9	18							
Therapeutic measures	372	17	15	1	0	1	15	315	77	22	102	209	100	3	207	75	139							
Non-reconstruction	375	4	29	0	2	2	2	349	52	8	134	212	60	3	232	109	72							
EVT	747	21	44	1	2	3	17	693	134	33	248	440	166	6	464	193	229							
Surgical reconstruction																								
Total																								

	a. Total												b. ASO											
	Bypass graft/EVT condition						Clinical symptom of the limb						Ischemic wound						Ambulatory function at discharge (Taylor's classification)					
	Good	Stenosis	Occlusion	Deterioration	Anastomosis disruption (aneurysm)	Others	Improved	No change	Deteriorated	Cured	Improved	Uncured	Unknown	Ambulatory	Ambulatory/homebound	Nonambulatory								
Local condition	113	2	7	0	0	1	3	115	16	4	88	22	22	3	96	21	22							
Rutherford 4	523	16	28	0	1	0	9	482	97	16	138	341	113	3	318	138	149							
Rutherford 5	96	3	6	1	1	2	5	81	17	12	17	66	27	0	37	31	54							
Rutherford 6	0	0	0	0	0	0	0	28	4	3	11	18	6	0	25	9	16							
Therapeutic measures	366	17	15	1	0	1	15	311	75	22	102	205	98	3	202	74	139							
Non-reconstruction	366	4	26	0	2	2	2	339	51	7	130	206	58	3	224	107	70							
EVT	732	21	41	1	2	3	17	678	130	32	243	429	162	6	451	190	225							
Surgical reconstruction																								
Total																								

EVT: endovascular treatment

Table 5-6 Revision of treatment

	Revision for those excluding good bypass graft/EVT condition				Minor reintervention (revision for stenosis)				Major reintervention (revision for occlusion)						Major amputation																	
	(+)		(-)		Patch plasty		EVT Others		Thrombectomy (± patch plasty)		Thrombolysis		EVT Re-bypass		Jump bypass		Interposition		Others		(-)		Due to new preoperative wound sound		Due to new preoperative wound sound							
	(+)	(-)	(-)	(+)	(-)	(+)	(-)	(-)	(+)	(-)	(-)	(+)	(-)	(-)	(+)	(-)	(-)	(+)	(-)	(-)	(+)	(-)	(-)	(+)	(-)	(-)	(+)					
a. Total																																
Local condition	5	8	124	0	3	0	124	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	136	3	1						
Rutherford 4	31	26	568	2	14	3	559	4	0	5	11	5	1	2	599	14	3															
Rutherford 5	6	11	103	0	5	1	101	2	0	2	2	2	0	0	97	14	1															
Rutherford 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	2	0							
Therapeutic measures	23	26	395	1	15	3	398	1	0	4	7	3	1	0	393	18	3															
Non-reconstruction	19	19	400	1	7	1	386	6	0	4	6	4	1	2	397	11	2															
EVT	42	45	795	2	22	4	784	7	0	8	13	7	2	2	832	31	5															
Surgical reconstruction																																
Total																																
b. ASO																																
Local condition	5	8	123	0	3	0	123	1	0	1	0	1	0	0	135	3	1															
Rutherford 4	29	25	554	2	14	2	547	3	0	5	11	4	1	1	584	13	2															
Rutherford 5	6	11	101	0	5	1	99	2	0	2	2	2	0	0	95	14	1															
Rutherford 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	2	0															
Therapeutic measures	23	26	390	1	15	2	392	1	0	4	7	3	1	0	388	17	3															
Non-reconstruction	17	18	388	1	7	1	377	5	0	4	6	3	1	1	386	11	1															
EVT	40	44	778	2	22	3	769	6	0	8	13	6	2	1	814	30	4															
Surgical reconstruction																																
Total																																
EVT: endovascular treatment																																

Table 5-7 Condition of contralateral limbs

		Contralateral limb occlusive lesions								Treatment for contralateral limb							
		(-)				(+) (+)				(-)				(+) (+)			
Local condition	Therapeutic measures	Asymptomatic		Intermittent claudication	CLI		Post treatment	Unnecessary pharmacological therapy	Angiogenic therapy	EVT	Surgical bypass	Minor amputation	Major amputation	Lumbar sympathectomy	Necessary but no treatment	Others	
		R4	R5		R6	R4											R5
Rutherford 4	Non-reconstruction	47	52	6	2	2	1	25	8	0	15	9	1	4	0	0	
Rutherford 5	EVT	180	240	26	9	42	5	110	49	1	68	42	7	22	0	4	
Rutherford 6	Surgical reconstruction	30	41	3	2	5	6	34	10	1	12	14	1	10	0	4	
Total		257	333	35	13	49	12	169	67	2	95	65	9	36	0	8	
b. ASO																	
		Contralateral limb occlusive lesions								Treatment for contralateral limb							
		(-)				(+) (+)				(-)				(+) (+)			
Local condition	Therapeutic measures	Asymptomatic		Intermittent claudication	CLI		Post treatment	Unnecessary pharmacological therapy	Angiogenic therapy	EVT	Surgical bypass	Minor amputation	Major amputation	Lumbar sympathectomy	Necessary but no treatment	Others	
		R4	R5		R6	R4											R5
Rutherford 4	Non-reconstruction	47	52	6	2	2	1	24	8	0	15	8	1	4	0	0	
Rutherford 5	EVT	169	237	26	8	42	5	108	48	1	68	40	7	22	0	3	
Rutherford 6	Surgical reconstruction	28	41	3	2	5	6	34	10	1	12	14	1	10	0	4	
Total		244	330	35	12	49	12	166	66	2	95	62	9	36	0	7	

CLI: critical limb ischemia; EVT: endovascular treatment

Table 5-8 Malignant neoplasm

	Newly diagnosed malignant neoplasm						Sites of newly diagnosed malignant neoplasm										
	(-)		(+) (+)		Unknown		Head and neck	Esophagus	Lung	Stomach	Hepatobiliary pancreas	Colon	Breast	Uterus	Ovarium	Prostate	Others
Local condition	138	1	10	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Rutherford 4	611	10	0	1	0	1	0	2	0	2	0	3	1	0	0	0	3
Rutherford 5	123	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Rutherford 6																	
Therapeutic measures	50	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-reconstruction	415	6	0	0	0	1	0	1	0	1	0	2	1	0	0	0	2
EVT	407	5	1	1	1	0	1	1	0	1	0	1	0	0	0	0	1
Surgical reconstruction																	
Total	872	11	11	3	1	1	1	2	0	2	0	3	1	0	0	0	3
b. ASO																	

	Newly diagnosed malignant neoplasm						Sites of newly diagnosed malignant neoplasm										
	(-)		(+) (+)		Unknown		Head and neck	Esophagus	Lung	Stomach	Hepatobiliary pancreas	Colon	Breast	Uterus	Ovarium	Prostate	Others
Local condition	137	1	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Rutherford 4	594	10	0	1	1	0	1	2	0	2	0	3	1	0	0	0	3
Rutherford 5	121	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Rutherford 6																	
Therapeutic measures	48	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-reconstruction	409	6	0	0	0	1	0	1	0	1	0	2	1	0	0	0	2
EVT	395	5	1	1	1	0	1	1	0	1	0	1	0	0	0	0	1
Surgical reconstruction																	
Total	852	11	11	3	1	1	1	2	0	2	0	3	1	0	0	0	3

EVT: endovascular treatment