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. 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. The CLI to be registered was defined according to TASC II: 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)
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 ±2-month range until 12 months after treatment and within ±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 1-1-1-1-1-3), 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” as 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), 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 Uni-
versity Classification), 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 × TP + 14.48 from the correlation data of
SPP and TP reported in Japan 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 follow-
ning symptoms: temperature > 38°C or < 36°C, heart
rate > 90 beats/min, respiratory rate > 20 breaths/min
or PaCO2 < 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 suf-
icient data to 709 limbs (694 limbs). On the WIfI classifi-
cation, 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/gan-
grene 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 classifi-
cation may have been due to input omission. In the “fem-
ropopliteal” 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 defini-
tion. For example, extensive gangrene involving the fore-
foot 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 pre-
cludes reliable ABI or AP measurements, TP of 60 mmHg
or higher or TcPO2 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 objec-
tive 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. Revas-
cularizations of the affected limbs were performed in 94%
(95%) of the registered limbs, and primary major ampu-
tations were performed in 2.3% (2.4%) of the registered
limbs. Among the surgical reconstruction procedures, dis-
tal bypass accounted for 54% (54%). Endovascular treat-
ment (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 infrapopliteal 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.

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, Shonan Kamakura 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 Daichi 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, National Hospital Organization, Fukuoka City Hospital
Department of Cardiovascular Surgery, National Hospital Organization, Fukuokahigashishi Medical Center
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6. JCLIMB Committee, NCD JCLIMB Analytical Team

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Shinsuke Mii (Chairman), Kunihiro Shigematsu (Vice Chairman), Nobuyoshi Azuma, Atsuhisa Ishida, Yoshinori Inoue, Hisashi Uchida, Takao Ohki, Sosei Kuma, Koji Kurosawa, Michinari Kono, Akio Kodama, Hiroyoshi Komai, Kimihiro Komori, Takashi Shibuya, Shunya Shindo, Ikku Sugimoto, Juno Deguchi, Katsuyuki Hoshina, Hirofumi Midorikawa, Terutoshi Yamaoka, Hiroyoshi Yamashita, and Yasuhiro Yunoki, and Tetsuro Miyata (Observer)

(2) NCD JCLIMB Analytical Team
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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 WIfI classification original\(^{(4)}\)

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     | \(\geq 0.80\) | \(>100\) | \(\geq 60\) |
| 1     | \(0.60–0.79\) | \(70–100\) | \(40–59\) |
| 2     | \(0.40–0.59\) | \(50–70\) | \(30–39\) |
| 3     | \(\leq 0.39\) | \(<50\) | \(<30\) |

ABI: ankle brachial (pressure) index; PVR: pulse volume recording; SPP: skin perfusion pressure; TP: toe pressure; TcPO\(_2\): transcutaneous oximetry.

Patients with diabetes should have TP measurements. If arterial calcification precludes reliable ABI or TP measurements, ischemia should be documented by TcPO\(_2\), 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  
  · 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-osteoarthropathy, 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:  
  · 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 WIfI classification: Correlation of WIfI and items in JCLIMB

Table 1-2-1  Wound

| Grade | Rutherford classification | Depth of ulcer (University of Texas classification: grade) | Ulcer | Sites of ulcer | Sites of gangrene |
|-------|---------------------------|--------------------------------------------------------|-------|---------------|------------------|
| 0     | Class 4                   | No ulcer                                               |       | No ulcer       | No gangrene      |
| 1     | Class 5, 6                | I                                                      | Any portion | No gangrene    |
|       |                            | I                                                      | II, III | Limited to digits |
| 2     | Class 5, 6                | I                                                      | Heel   | Limited to digits |
|       |                            | I                                                      | 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   | Male | Female | Right | Left | BMI (Median) | Pathogenesis | Age at registration |
|---------|-----|------|--------|-------|------|--------------|--------------|---------------------|
|         |     |      |        |       |      |              |              | ASO Mean (±SD) | TAO Mean (±SD) | Vasculitis Mean (±SD) | Others Mean (±SD) |
| Rutherford 4 | 204 | 134  | 70     | 96    | 108  | 21.1         | ASO           | 74.7 (11.0) |
| Rutherford 5 | 709 | 482  | 227    | 395   | 314  | 21.3         | TAO           | 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         | Vasculitis    | 74.9 (10.3) | 62.3 (18.3) | 73.7 (5.7)  | 70.1 (13.3) |
| Total     | 1070| 725  | 345    | 562   | 508  | 21.2         | Others        | 74.9 (10.3) | 62.3 (18.3) | 73.7 (5.7)  | 70.1 (13.3) |

**b. ASO**

|         | n   | Male | Female | Right | Left | BMI (Median) | Age at registration |
|---------|-----|------|--------|-------|------|--------------|---------------------|
|         |     |      |        |       |      |              | ASO 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      | Good    |
|              |          |                  |              | therapy      | Poor    |
| Good         | 91       | 21               | 60           | 60           | 132     |
| Poor         | 87       | 63               | 132          | 67           | 5       |
| Total        | 378      | 114              | 277          | 627          | 445     |

|              | (-)      | (-)              | (-)          | (-)          | (-)     |
| Management   |          | Good             | Poor         | Good         | Poor    |
| Good         | 50       | 18               | 45           | 92           | 60      |
| Poor         | 68       | 34               | 89           | 56           | 73      |
| Total        | 378      | 114              | 277          | 627          | 445     |

|              | 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. |

|              | Rutherford 4 | Rutherford 5 | Rutherford 6 | Total |
|--------------|--------------|--------------|--------------|-------|
| Diabetes     | 91           | 237          | 50           | 359   |
| Diabetes therapy | 87           | 349          | 68           | 501   |
| Hypertension | 26           | 123          | 39           | 187   |
| Dyslipidemia | 29           | 176          | 55           | 113   |
| Smoking      | 12           | 79           | 23           | 45    |

|              | Ex-smoker | Current smoker |
|--------------|-----------|----------------|
| Rutherford 4 | 104       | 67             |
| Rutherford 5 | 281       | 334            |
| Rutherford 6 | 60        | 73             |
| Total        | 445       | 474            |

**b. ASO**

|              | Diabetes | Diabetes therapy | Hypertension | Dyslipidemia | Smoking |
|--------------|----------|------------------|--------------|--------------|---------|
|              | (+)      | (+)              | (+)          | (+)          | (+)     |
| Management   | (-)      | Diet therapy     | Medication   | Insulin      | Good    |
|              |          |                  |              | therapy      | Poor    |
| Good         | 90       | 21               | 60           | 131          | 5       |
| Poor         | 87       | 63               | 131          | 67           | 5       |
| Total        | 359      | 113              | 271          | 612          | 435     |

|              | (-)      | (-)              | (-)          | (-)          | (-)     |
| Management   |          | Good             | Poor         | Good         | Poor    |
| Good         | 46       | 18               | 43           | 90           | 58      |
| Poor         | 68       | 34               | 87           | 54           | 72      |
| Total        | 359      | 113              | 271          | 612          | 435     |

|              | Ex-smoker | Current smoker |
|--------------|-----------|----------------|
| Rutherford 4 | 103       | 67             |
| Rutherford 5 | 325       | 92             |
| Rutherford 6 | 58        | 72             |
| Total        | 464       | 148            |
### Table 2-3  Patients’ background 3

|                      | Ischemic heart disease | Heart failure | Cerebrovascular disease | Renal dysfunction |
|----------------------|------------------------|---------------|-------------------------|-------------------|
|                      | (−)                    | (+)           | (−)                     | (−)               |
|                      | Medical treatment      | PCI           | CABG                    |                   |
| **Rutherford 4**     | 156                    | 17            | 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      | PCI           | CABG                    |                   |
| **Rutherford 4**     | 155                    | 17            | 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 ≤), 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

|                      | Malignant neoplasm | Site of malignant neoplasm |
|----------------------|--------------------|---------------------------|
|                      | (+)                | History of cancer         | Head and neck | Esophagus | Lung | Stomach | Hepatobiliary pancreas | Colon | Breast | Uterus | Ovarium | Prostate | Others |
|                      |                    | Under treatment*          | Unknown       |          |      |         |                     |       |        |        |         |         |        |
| **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 | Ovarium | Prostate | Others |
|                      |                    | Under treatment*          | Unknown       |          |      |         |                     |       |        |        |         |         |        |
| **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

|                  | Contralateral limb occlusive lesions | Vascular lesions excluding occlusion |
|------------------|-------------------------------------|-------------------------------------|
|                  | Asymptomatic | Intermittent claudication | CLI | Post-treatment | TAA | AAA (including IAA) | Peripheral artery aneurysm | Carotid stenosis | Others |
| Rutherford 4     | 65           | 44                       | 16  | 29           | 0   | 40                   | 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 |
|------------------|-------------------------------------|-------------------------------------|
|                  | Asymptomatic | Intermittent claudication | CLI | Post-treatment | TAA | AAA (including IAA) | Peripheral artery aneurysm | Carotid stenosis | Others |
| Rutherford 4     | 65           | 44                       | 16  | 29           | 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   |

CLl: 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 (University of Texas classification: grade) | Site of gangrene | Main site of ulcer/gangrene to be treated |
|-----------------------------------------------|---------------------------------------------------------|-----------------|------------------------------------------|
|                                | Rutherford 4 | Rutherford 5 | Rutherford 6 | Total | Rutherford 4 | Rutherford 5 | Rutherford 6 | Total | Rutherford 4 | Rutherford 5 | Rutherford 6 | Total |
|                                | Ambulatory   | Ambulatory    | Non-ambulatory |      | Ambulatory   | Ambulatory    | Non-ambulatory |      | Ambulatory   | Ambulatory    | Non-ambulatory |      |
|                                |              | Homebound    |              |      |              | Homebound     |              |      |              | Homebound     |              |      |
| Digits                        | Feet distal  | Feet proximal | Heel         | Ankle | Lower leg    | Feet distal  | Feet proximal | Heel         | Ankle | Lower leg    | Feet distal  | Feet proximal | Heel |
| Rutherford 4                  |              |              |              |      |              |              |              |      |              |              |              |      |
|                              | 148          | 28           | 28           |      | 403          | 112          | 127          |      | 332          | 49           | 13           | 27           |      | 4            | 3            | 303          |     |
| Rutherford 5                  | 431          | 143          | 135          |      | 297          | 37           | 68           |      | 51           | 47           | 28           | 42           |      | 10           | 10           | 21           |     |
| Rutherford 6                  | 58           | 40           | 59           |      | 29           | 37           | 68           |      | 51           | 47           | 28           | 42           |      | 10           | 10           | 21           |     |
| Total                         | 637          | 211          | 222          |      | 432          | 149          | 195          |      | 383          | 96           | 41           | 69           |      | 13           | 13           | 324          |     |

| 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

#### a. Total

| Temperature >38°C | Blood test | Hemodynamics | Infection*1) |
|-------------------|------------|--------------|--------------|
|                   | 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     |             |          |
| 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       | 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      |

#### b. ASO

| Temperature >38°C | Blood test | Hemodynamics | Infection*1) |
|-------------------|------------|--------------|--------------|
|                   | 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     |             |          |
| 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       | 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: ① Local swelling or induration, ② Erythema > 5 mm to <2 cm around the ulcer, ③ Local tenderness or pain, ④ Local warmth, ⑤ Purulent discharge (thick opaque to white, or sanguineous secretion)

*2) Local infection are skin and subcutaneous tissue was classified by the spreading of erythema (<2 cm or >2 cm 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: ① Temperature >38°C or <38°C, ② Heart rate >90 beats/min, ③ Respiratory rate >20 breaths/min or PaCO₂ >32 mmHg, ④ White blood cell count >12,000 or <4000 cu/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 | Femoropopliteal | 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 | 14        |
| 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 | Femoropopliteal | 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 | 13        |
| 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

|                     | 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    |

|                     | 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

|                | Bollinger Score |
|----------------|-----------------|
|                | Posterior tibial: | Posterior tibial: | Anterior tibial: | Anterior tibial: | Peroneal: | Peroneal: | Foot     |
|                | proximal         | distal           | proximal         | distal           | proximal  | distal    |          |
| 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  |

**Table 3-6** SVS WIfI classification

|                | Wound | Ischemia | foot Infection | Stage |
|----------------|-------|----------|----------------|-------|
|                | 0     | 1        | 2              | 3     |
|                | 0     | 1        | 2              | 3     |
|                | 0     | 1        | 2              | 3     |
| Rutherford 4   | 204   | 0        | 0              | 0     |
| Rutherford 5   | 0     | 236      | 317            | 144   |
| Rutherford 6   | 0     | 5        | 25             | 115   |
| Total          | 204   | 241      | 342            | 259   |

**b. ASO**

|                | Wound | Ischemia | foot Infection | Stage |
|----------------|-------|----------|----------------|-------|
|                | 0     | 1        | 2              | 3     |
|                | 0     | 1        | 2              | 3     |
|                | 0     | 1        | 2              | 3     |
| Rutherford 4   | 203   | 0        | 0              | 0     |
| Rutherford 5   | 0     | 228      | 311            | 140   |
| Rutherford 6   | 0     | 5        | 25             | 111   |
| Total          | 203   | 233      | 336            | 251   |
### Table 4 Treatment

#### Table 4-1 Treatment 1

| Treatment | Angiogenic therapy | Amputation | Reoperation |
|-----------|--------------------|------------|-------------|
|           | Pharmacological therapy | Angiogenic therapy | Arterial reconstruction | Major amputation | Lumber sympathectomy | Bone marrow | Peripheral blood | Others | Toe | Metatarsal | Chopart/Lisfranc | Syne | Below knee | Above knee-knee disarticulation | Hip disarticulation | Unknown | 1X | 2X | 3X |
|-----------|---------------------|-------------|--------------|
| 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 | 1 | 14 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 542 | 86 | 28 | 44 |
| Rutherford 6 | 45 | 1 | 147 | 14 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 2 | 1 | 1 | 0 | 4 | 130 | 16 | 6 | 1 |
| Total | 323 | 2 | 1011 | 25 | 0 | 0 | 1 | 1 | 15 | 12 | 0 | 0 | 2 | 1 | 0 | 14 | 813 | 135 | 48 | 60 |

#### Table 4-2 ASO

| Treatment | Angiogenic therapy | Amputation | Reoperation |
|-----------|---------------------|------------|-------------|
|           | Pharmacological therapy | Angiogenic therapy | Arterial reconstruction | Major amputation | Lumber sympathectomy | Bone marrow | Peripheral blood | Others | Toe | Metatarsal | Chopart/Lisfranc | Syne | Below knee | Above knee-knee disarticulation | Hip disarticulation | Unknown | 1X | 2X | 3X |
| 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 | 1 | 14 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 531 | 82 | 27 | 42 |
| Rutherford 6 | 45 | 1 | 143 | 14 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 2 | 1 | 1 | 0 | 4 | 127 | 15 | 6 | 1 |
| Total | 315 | 2 | 990 | 25 | 0 | 0 | 1 | 1 | 15 | 11 | 0 | 0 | 2 | 1 | 0 | 14 | 798 | 130 | 47 | 58 |
### Table 4-2 Treatment 2

|                | Bypass | TEA | EVT |
|----------------|--------|-----|-----|
|                | Aorta-aorta | Aorta | Aorta-femoral* | Femoral-proximal popliteal | Femoral-distal popliteal | Femoral-crural foot | Popliteal-crural foot | Anatomical others | Axillary-femoral | Femoral-femoral | Extraanatomical others | Aorta/iliac | Femoral/popliteal | Others |
| Rutherford 4   | 0       | 0   | 6    | 10   | 10   | 20   | 19    | 2     | 2    | 3    | 2                      | 3         | 13              | 0       | 112              |
| Rutherford 5   | 0       | 0   | 8    | 30   | 40   | 94   | 109   | 3     | 4    | 4    | 4                      | 2         | 44              | 6       | 408              |
| Rutherford 6   | 0       | 0   | 7    | 8    | 11   | 24   | 0     | 4     | 6    | 1    |                        | 0         | 11              | 1       | 90               |
| Total          | 0       | 0   | 14   | 47   | 58   | 125  | 152   | 5     | 10   | 13   | 7                      | 5         | 68              | 7       | 610              |
|                |         |     |      |      |      |      |       |       |      |      |                         |           |                 |         |                  |
|                | Bypass | TEA | EVT |
|                | Aorta-aorta | Aorta | Aorta-femoral* | Femoral-proximal popliteal | Femoral-distal popliteal | Femoral-crural foot | Popliteal-crural foot | Anatomical others | Axillary-femoral | Femoral-femoral | Extraanatomical others | Aorta/iliac | Femoral/popliteal | Others |
| Rutherford 4   | 0       | 0   | 6    | 10   | 10   | 20   | 18    | 2     | 2    | 3    | 2                      | 3         | 13              | 0       | 112              |
| Rutherford 5   | 0       | 0   | 8    | 30   | 40   | 89   | 107   | 3     | 4    | 4    | 1                      | 2         | 44              | 6       | 401              |
| Rutherford 6   | 0       | 0   | 7    | 8    | 11   | 24   | 0     | 4     | 5    | 1    |                        | 0         | 11              | 1       | 90               |
| Total          | 0       | 0   | 14   | 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

|                | EVT | Vascular material | Vein usage | Vein quality |
|----------------|-----|------------------|------------|-------------|
|                | Aorta/iliac | Femoral/popliteal | Tibioperoneal/foot | Others | Polyester | ePTFE | Vein | Others | In-situ | Non-reversed | Reversed | Spliced | Patch | 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   |
|                | EVT | Vascular material | Vein usage | Vein quality |
|                | Aorta/iliac | Femoral/popliteal | Tibioperoneal/foot | Others | Polyester | ePTFE | Vein | Others | In-situ | Non-reversed | Reversed | Spliced | Patch | 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 | 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                | 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            | 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 | 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                | 5       | 3       | 22      | 16   | 2            | 13              | 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

|                | 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

|                | 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 |
| Local condition |       |      |                      |                 |                      |                  |                           |           |                |                           |        |         |
| Rutherford 4   | 137   | 3    | 0                    | 2               | (−)                 | 0                 | 0                          | 0         | 0               | 0                           | 0      | 0       |
| Rutherford 5   | 603   | 19   | 0                    | 7               | 0                   | 1                 | 0                          | 2         | 0               | 1                           | 0      | 0       |
| Rutherford 6   | 114   | 10   | 0                    | 2               | 0                   | 0                 | 0                          | 0         | 0               | 3                           | 1      | 0       |
| Therapeutic measures |       |      |                      |                 |                      |                  |                           |           |                |                           |        |         |
| Non-reconstruction | 48   | 4    | 0                    | 0               | 0                   | 0                 | 0                          | 0         | 0               | 2                           | 0      | 2       |
| EVT            | 405   | 16   | 0                    | 7               | 0                   | 0                 | 1                          | 0         | 0               | 2                           | 1      | 4       |
| Surgical reconstruction | 401  | 12   | 0                    | 4               | 0                   | 1                 | 1                          | 0         | 0               | 1                           | 0      | 5       |
| Total          | 854   | 32   | 0                    | 11              | 0                   | 1                 | 0                          | 2         | 0               | 5                           | 1      | 11      |

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 |
| Local condition |       |      |                      |                 |                      |                  |                           |           |                |                           |        |         |
| Rutherford 4   | 136   | 3    | 0                    | 2               | 0                   | 0                 | 0                          | 0         | 0               | 0                           | 0      | 0       |
| Rutherford 5   | 586   | 19   | 0                    | 7               | 0                   | 1                 | 0                          | 2         | 0               | 1                           | 0      | 0       |
| Rutherford 6   | 112   | 10   | 0                    | 2               | 0                   | 0                 | 0                          | 0         | 0               | 3                           | 1      | 0       |
| Therapeutic measures |       |      |                      |                 |                      |                  |                           |           |                |                           |        |         |
| Non-reconstruction | 46   | 4    | 0                    | 0               | 0                   | 0                 | 0                          | 0         | 0               | 2                           | 0      | 2       |
| EVT            | 399   | 16   | 0                    | 7               | 0                   | 0                 | 1                          | 0         | 0               | 2                           | 1      | 4       |
| Surgical reconstruction | 389  | 12   | 0                    | 4               | 0                   | 1                 | 0                          | 1         | 0               | 1                           | 0      | 5       |
| Total          | 834   | 32   | 0                    | 11              | 0                   | 1                 | 0                          | 2         | 0               | 5                           | 1      | 11      |

EVT: endovascular treatment
### Table 5-2 Perioperative complications

#### a. Total

| Local condition | cardiac disease | cerebrovascular disease | pneumonia | wound complication | peripheral embolism |
|-----------------|-----------------|-------------------------|-----------|-------------------|---------------------|
|                 | Angina | Serious arrhythmia | Myocardial infarction | TIA | Functional loss (-) | Functional loss (+) | (-) | (+) | (-) | (+) | (-) | (+) | Minor (including blue toe) | Major |
| Rutherford 4    | 123    | 2                     | 2                      | 0     | 125             | 1                  | 125 | 2   | 118 | 9   | 125 | 2   | 0                          |
| Rutherford 5    | 578    | 10                    | 3                      | 2     | 594             | 0                  | 579 | 14  | 571 | 22  | 586 | 6   | 1                          |
| Rutherford 6    | 114    | 2                     | 2                      | 2     | 116             | 0                  | 116 | 4   | 113 | 7   | 119 | 1   | 0                          |
| Therapeutic measures |     |                        |                        |       |                 |                     |     |      |     |     |     |     |                            |
| Non-reconstruction | 5   | 0                     | 2                      | 0     | 7               | 0                  | 7   | 0   | 5   | 2   | 7   | 0   | 0                          |
| EVT             | 412    | 6                     | 0                      | 3     | 416             | 0                  | 406 | 15  | 413 | 8   | 412 | 8   | 1                          |
| Surgical reconstruction | 398  | 8                     | 5                      | 1     | 402             | 1                  | 407 | 5   | 384 | 28  | 411 | 1   | 0                          |
| Total           | 815    | 14                    | 7                      | 4     | 825             | 1                  | 820 | 20  | 802 | 38  | 830 | 9   | 1                          |

#### b. ASO

| Local condition | cardiac disease | cerebrovascular disease | pneumonia | wound complication | peripheral embolism |
|-----------------|-----------------|-------------------------|-----------|-------------------|---------------------|
|                 | Angina | Serious arrhythmia | Myocardial infarction | TIA | Functional loss (-) | Functional loss (+) | (-) | (+) | (-) | (+) | (-) | (+) | Minor (including blue toe) | Major |
| Rutherford 4    | 122    | 2                     | 2                      | 0     | 124             | 1                  | 124 | 2   | 117 | 9   | 124 | 2   | 0                          |
| Rutherford 5    | 563    | 10                    | 3                      | 2     | 569             | 0                  | 564 | 14  | 557 | 21  | 571 | 6   | 1                          |
| Rutherford 6    | 112    | 2                     | 2                      | 2     | 115             | 0                  | 114 | 4   | 111 | 7   | 117 | 1   | 0                          |
| Therapeutic measures |     |                        |                        |       |                 |                     |     |      |     |     |     |     |                            |
| Non-reconstruction | 5   | 0                     | 2                      | 0     | 7               | 0                  | 7   | 0   | 5   | 2   | 7   | 0   | 0                          |
| EVT             | 406    | 6                     | 0                      | 3     | 410             | 0                  | 400 | 15  | 407 | 8   | 406 | 8   | 1                          |
| Surgical reconstruction | 386  | 8                     | 5                      | 1     | 391             | 1                  | 395 | 5   | 373 | 27  | 399 | 1   | 0                          |
| Total           | 797    | 14                    | 7                      | 4     | 808             | 1                  | 802 | 20  | 785 | 37  | 812 | 9   | 1                          |

TIA: transient ischemic attack; EVT: endovascular treatment
| Local condition | Hemorrhage | Site of bleeding | Outcome of bleeding | Complication due to contrast medium | Complication at puncture site |
|-----------------|------------|------------------|---------------------|-------------------------------------|-----------------------------|
|                 | (-) (+) Unknown | Brain | GI tract | Others | Cured | Uncured | Dead | Others | (-) (+) | (-) (+) |
| Rutherford 4    | 124 2 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 127 | 0 | 68 | 0 |
| Rutherford 5    | 561 11 1 | 0 | 4 | 7 | 8 | 1 | 2 | 0 | 590 | 3 | 352 | 3 |
| Rutherford 6    | 114 5 1 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 120 | 0 | 65 | 1 |

| Therapeutic measures | Hemorrhage | Site of bleeding | Outcome of bleeding | Complication due to contrast medium | Complication at puncture site |
|----------------------|------------|------------------|---------------------|-------------------------------------|-----------------------------|
|                      | (-) (+) Unknown | Brain | GI tract | Others | Cured | Uncured | Dead | Others | (-) (+) |
| Non-reconstruction   | 7 0 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 13 | 0 |
| EVT                  | 415 5 1 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 419 | 2 | 417 | 4 |
| Surgical reconstruction | 397 13 2 | 0 | 6 | 7 | 10 | 1 | 2 | 0 | 411 | 1 | 55 | 0 |

| Total                | 819 18 3 | 0 | 8 | 10 | 15 | 1 | 2 | 0 | 837 | 3 | 485 | 4 |

| b. ASO               | Hemorrhage | Site of bleeding | Outcome of bleeding | Complication due to contrast medium | Complication at puncture site |
|----------------------|------------|------------------|---------------------|-------------------------------------|-----------------------------|
|                      | (-) (+) Unknown | Brain | GI tract | Others | Cured | Uncured | Dead | Others | (-) (+) |
| Local condition      |             |          |         |         |       |         |      |        |        |
| Rutherford 4         | 123 2 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 126 | 0 | 68 | 0 |
| Rutherford 5         | 567 10 1 | 0 | 4 | 6 | 7 | 1 | 2 | 0 | 575 | 3 | 345 | 3 |
| Rutherford 6         | 112 5 1 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 118 | 0 | 65 | 1 |

| Therapeutic measures | Hemorrhage | Site of bleeding | Outcome of bleeding | Complication due to contrast medium | Complication at puncture site |
|----------------------|------------|------------------|---------------------|-------------------------------------|-----------------------------|
|                      | (-) (+) Unknown | Brain | GI tract | Others | Cured | Uncured | Dead | Others | (-) (+) |
| Non-reconstruction   | 7 0 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 13 | 0 |
| EVT                  | 409 5 1 | 0 | 2 | 3 | 5 | 0 | 0 | 0 | 413 | 2 | 411 | 4 |
| Surgical reconstruction | 386 12 2 | 0 | 6 | 6 | 9 | 1 | 2 | 0 | 399 | 1 | 54 | 0 |

| Total                | 802 17 3 | 0 | 8 | 9 | 14 | 1 | 2 | 0 | 819 | 3 | 478 | 4 |

GI: gastrointestinal; EVT: endovascular treatment
Table 5-4  Hemodynamics

| Local condition | ABI  | Ankle pressure | SPP  | ABI  | Ankle pressure | SPP  |
|-----------------|------|----------------|------|------|----------------|------|
|                 | n    | Median         | n    | Median | n | Median         | n    | Median |
| Rutherford 4    | 75   | 0.83           | 64   | 107.0  | 35 | 38.0           | 59   | 110.0  | 27  | 40.0  |
| Rutherford 5    | 288  | 0.87           | 271  | 111.0  | 263 | 41.0           | 199  | 123.0  | 174 | 43.0  |
| Rutherford 6    | 36   | 0.85           | 36   | 114.5  | 25  | 42.0           | 31   | 116.5  | 27  | 43.0  |
| Rutherford 6    | 36   | 0.85           | 36   | 114.5  | 25  | 42.0           | 31   | 116.5  | 27  | 43.0  |
| Therapeutic measures | Non-reconstruction | 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           | 196  | 123.5  | 112 | 41.5  |
| Surgical reconstruction | 148 | 0.86 | 138  | 113.0  | 146 | 44.5           | 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  |

| Local condition | ABI  | Ankle pressure | SPP  | ABI  | Ankle pressure | SPP  |
|-----------------|------|----------------|------|------|----------------|------|
|                 | n    | Median         | n    | Median | n | Median         | n    | Median |
| Rutherford 4    | 75   | 0.83           | 64   | 107.0  | 35 | 38.0           | 59   | 110.0  | 27  | 40.0  |
| Rutherford 5    | 288  | 0.87           | 271  | 111.0  | 263 | 41.0           | 199  | 123.0  | 174 | 43.0  |
| Rutherford 6    | 36   | 0.85           | 36   | 114.5  | 25  | 42.0           | 31   | 116.5  | 27  | 43.0  |
| Rutherford 6    | 36   | 0.85           | 36   | 114.5  | 25  | 42.0           | 31   | 116.5  | 27  | 43.0  |
| Therapeutic measures | Non-reconstruction | 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           | 196  | 123.5  | 112 | 41.5  |
| Surgical reconstruction | 148 | 0.86 | 138  | 113.0  | 146 | 44.5           | 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  |

ABI: ankle brachial (pressure) index; SPP: skin perfusion pressure; EVT: endovascular treatment
### Table 5-5  Condition of the limbs

#### a. Total

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

#### b. ASO

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

EVT: endovascular treatment
Table 5-6  Revision of treatment

|                     | Total | a. Total | b. ASO |
|---------------------|-------|----------|--------|
|                     | Revised for those excluding good bypass graft/EVT condition | Minor reintervention (revision for stenosis) | Major reintervention (revision for occlusion) | Major amputation |
|                     | (+)   | (-)     | (+)    | (-) | (+) | (-) | (+) | (-) | (+) | (-) | (+) | (-) | (+) | (-) | (+) | (-) |
| Local condition     |       |         |        |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Rutherford 4        | 5     | 8       | 124    | 0   | 3   | 0   | 124 | 1   | 0   | 1   | 0   | 1   | 0   | 136 | 3   | 1   |
| Rutherford 5        | 31    | 26      | 568    | 2   | 14  | 3   | 559 | 4   | 0   | 5   | 11  | 5   | 1   | 2   | 599 | 14  | 3   |
| Rutherford 6        | 6     | 11      | 103    | 0   | 5   | 1   | 101 | 2   | 0   | 2   | 2   | 2   | 0   | 0   | 97  | 14  | 1   |
| Therapeutic measures|       |         |        |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Non-reconstruction  | 0     | 0       | 0      | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 42  | 2   | 0   |
| EVT                 | 23    | 26      | 395    | 1   | 15  | 3   | 398 | 1   | 0   | 4   | 7   | 3   | 1   | 0   | 393 | 18  | 3   |
| Surgical reconstruction | 19  | 19      | 400    | 1   | 7   | 1   | 386 | 6   | 0   | 4   | 6   | 4   | 1   | 2   | 397 | 11  | 2   |
| Therapeutic measures|       |         |        |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Non-reconstruction  | 0     | 0       | 0      | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 40  | 2   | 0   |
| EVT                 | 23    | 26      | 390    | 1   | 15  | 2   | 392 | 1   | 0   | 4   | 7   | 3   | 1   | 0   | 388 | 17  | 3   |
| Surgical reconstruction | 17  | 18      | 388    | 1   | 7   | 1   | 377 | 5   | 0   | 4   | 6   | 3   | 1   | 1   | 386 | 11  | 1   |
| Total               | 42    | 45      | 795    | 2   | 22  | 4   | 784 | 7   | 0   | 8   | 13  | 7   | 2   | 2   | 832 | 31  | 5   |

EVT: endovascular treatment
Table 5-7  Condition of contralateral limbs

|                | Contralateral limb occlusive lesions | Treatment for contralateral limb |
|----------------|--------------------------------------|----------------------------------|
|                | (-) 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 |
| Local condition | Rutherford 4 | 47 | 52 | 6 | 2 | 2 | 25 | 8 | 63 | 0 | 15 | 9 | 1 | 4 | 0 | 0 | 0 |
|                | Rutherford 5 | 180 | 240 | 20 | 9 | 42 | 5 | 110 | 49 | 287 | 1 | 68 | 42 | 7 | 22 | 0 | 4 | 1 |
|                | Rutherford 6 | 30 | 41 | 3 | 2 | 5 | 6 | 34 | 10 | 54 | 1 | 12 | 14 | 1 | 10 | 0 | 4 | 1 |
| Therapeutic measures | Non-reconstruction | 16 | 14 | 0 | 0 | 0 | 1 | 18 | 2 | 13 | 0 | 13 | 4 | 2 | 6 | 0 | 0 | 0 |
|                | EVT | 106 | 175 | 13 | 7 | 29 | 8 | 77 | 35 | 216 | 1 | 58 | 17 | 4 | 15 | 0 | 5 | 1 |
|                | Surgical reconstruction | 135 | 144 | 22 | 6 | 20 | 3 | 74 | 30 | 175 | 1 | 24 | 44 | 3 | 15 | 0 | 3 | 1 |
| Total           | 257 | 333 | 35 | 13 | 49 | 12 | 169 | 67 | 404 | 2 | 95 | 65 | 9 | 36 | 0 | 8 | 2 |

b. ASO

|                | Contralateral limb occlusive lesions | Treatment for contralateral limb |
|----------------|--------------------------------------|----------------------------------|
|                | (-) 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 |
| Local condition | Rutherford 4 | 47 | 52 | 6 | 2 | 2 | 24 | 8 | 63 | 0 | 15 | 8 | 1 | 4 | 0 | 0 | 0 |
|                | Rutherford 5 | 169 | 237 | 26 | 8 | 42 | 5 | 108 | 48 | 284 | 1 | 68 | 40 | 7 | 22 | 0 | 3 | 1 |
|                | Rutherford 6 | 28 | 41 | 3 | 2 | 5 | 6 | 34 | 10 | 54 | 1 | 12 | 14 | 1 | 10 | 0 | 4 | 1 |
| Therapeutic measures | Non-reconstruction | 14 | 14 | 0 | 0 | 0 | 1 | 18 | 2 | 13 | 0 | 13 | 4 | 2 | 6 | 0 | 0 | 0 |
|                | EVT | 102 | 174 | 13 | 6 | 29 | 8 | 77 | 35 | 215 | 1 | 58 | 17 | 4 | 15 | 0 | 4 | 1 |
|                | Surgical reconstruction | 128 | 142 | 22 | 6 | 20 | 3 | 71 | 29 | 173 | 1 | 24 | 41 | 3 | 15 | 0 | 3 | 1 |
| Total           | 244 | 330 | 35 | 12 | 49 | 12 | 166 | 66 | 401 | 2 | 95 | 62 | 9 | 36 | 0 | 7 | 2 |

CLI: critical limb ischemia; EVT: endovascular treatment
### Table 5-8 Malignant neoplasm

#### a. Total

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

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

EVT: endovascular treatment