Data on amputation free survival of patients with lower limb peripheral artery disease classified according TASC II classification and a new crural index

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ABSTRACT

The results of amputation free survival (AFS) of a cohort of 887 caucasian patients is shown.

The data is based on further analyses of data presented in Jalkanen et al. (2016) [1]. The 36-month amputation free survival of patients divided in new crural vessel disease classification (Crural Index), aortoiliac TASC II classification, femoropopliteal TASC II classification and most severe segment is presented. Also, in depth demographic data is presented for each Crural Index group Jalkanen et al., 2016 [1].

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Value of the data

- This is the first analyses of correlation between AFS and crural index.
- The data demonstrates the challenging nature of extensive crural disease. The more extensive the atherosclerosis on crural vessels is, the more interventions are needed.
- Present data shows that in addition to poor survival and AFS, crural index IV is associated with conservative treatment and inability to treat.
- It also provides estimation of survival and amputation free survival for TASC II classification for aortoiliac and femoropopliteal segments [2–4].

1. Data

The presented data is acquired from analysis of amputation free survival and extent of atherosclerosis in crural vessels of PAD patients. Patient cohort was analysed according to widely used classification (TASC II) [2–4] and a new classification for the crural vessels [1]. The Kaplan-Meier curves for AFS are shown in Fig. 1A and B. Table 1A–E presents the mean AFS ± SE

![Fig. 1. A. Kaplan-Meier curves show the cumulative amputation free survival (AFS) during 36-months follow-up. Separate curves for Crural Index I–IV and for patients with no detectable significant atherosclerotic lesion in crural arterial vessels. The survival curve of Crural Index IV demonstrates the poor prognosis of patients with extensive atherosclerosis in crural arteries. Numbers at risk for each curve marked at defined time-point. B. Kaplan–Meier curves demonstrating amputation free survival based on most severely diseased vascular segments. A more detailed presentation of data analysis is given in the methods section. The segments are marked as aorto-iliac (AI), femoro-popliteal (FP) and crural (Cr). Severe crural lesions result predict a poor AFS. Numbers at risk for each curve marked at defined time-point.](image)
Table 1
The analyses of treatments in each Crural index group. Unable to treat percentage of cases not being able to treat either for the technical reasons or patient unfit for demanded surgery. Conservative includes unable to treat and patients with claudication and requiring too extensive revascularisation procedures for clinical symptom. Endovascular procedures during 36-months follow-up to the initially worse leg. Surgical revascularisations to initially worse leg during 36-months follow-up. Treatments to the initially worse leg during 36-month follow-up, including both endovascular and surgical procedures. Amputation free survival (AFS) 1, 2 and 3 years.

| A | Crural Index | Grade 0 | Grade I | Grade II | Grade III | Grade IV |
|---|--------------|---------|---------|----------|-----------|----------|
| Unable to treat | 3.20% | 11% | 4.30% | 5.20% | 9.60% |
| Conservative | 7.1% | 20% | 16% | 18% | 31% |
| Endovascular | 54% | 67% | 65% | 62% | 49% |
| Surgery | 49% | 23% | 30% | 39% | 32% |
| Treatments (mean ± SE) | 1.3 ± 0.086 | 1.06 ± 1.102 | 1.10 ± 0.047 | 1.31 ± 0.068 | 0.098 ± 0.073 |
| AFS 1, 2, 3 years | 87%, 81%, 79% | 77%, 76%, 73% | 79%, 74%, 74% | 67%, 60%, 58% | 49%, 40%, 37% |

Table 2
Mean estimated amputation free survival during 36-months follow-up, SE and 95% CI presented in the table for A) Aorto-iliac (AI), B) Femoro-popliteal (FP), C) Crural (Cr) grades I–IV, D) Localization of significant atherosclerotic lesion, E) The most severe atherosclerotic segment. Log-rank test shown on the left row of the table. Number of patients at risk for each group n.

| B | Most severe segment | Aorto-iliac | Femoro-popliteal | Crural |
|---|---------------------|------------|------------------|--------|
| Unable to treat | 2.10% | 0.10% | 14% |
| Conservative | 7% | 12% | 31% |
| Endovascular | 65% | 61% | 56% |
| Surgery | 43% | 44% | 21% |
| Treatments (mean ± SE) | 1.28 ± 0.072 | 1.36 ± 0.052 | 0.89 ± 0.045 |
| AFS 1, 2, 3 years | 86%, 79%, 78% | 80%, 75%, 74% | 51%, 44%, 41% |

| (n) | Mean months ± SE | 95% CI: Lower – Upper Bound |
|-----|------------------|-----------------------------|
| A   | AI I 92 | 32.1 ± 1.06 | 30.1–34.2 |
|     | AI II 57 | 31.2 ± 1.58 | 28.1–34.3 |
|     | AI III 34 | 27.6 ± 2.27 | 23.1–32.0 |
| P = 0.010 | AI IV 65 | 28.5 ± 1.59 | 25.4–31.6 |
| B   | FP I 82 | 28.6 ± 1.60 | 25.5 ± 29.4 |
|     | FP II 140 | 29.2 ± 1.09 | 27.0 ± 31.3 |
|     | FP III 114 | 28.2 ± 1.22 | 25.8 ± 30.6 |
| p = 0.335 | FP IV 329 | 27.3 ± 0.758 | 25.8 ± 28.8 |
| C   | Cr I 70 | 30.4 ± 1.50 | 27.5–33.4 |
|     | Cr III 235 | 30.7 ± 0.772 | 29.2–32.2 |
|     | Cr III 289 | 26.7 ± 0.835 | 25.1–28.4 |
| P < 0.001 | Cr IV 166 | 21.0 ± 1.17 | 18.7–23.3 |
| D   | AI 25 | 36.5 ± 0.47 | 35.6–37.4 |
|     | FP 61 | 32.7 ± 1.30 | 30.2–35.3 |
|     | Cr 144 | 24.3 ± 1.24 | 21.9–26.8 |
|     | AI + FP 36 | 32.6 ± 1.48 | 29.7–35.5 |
|     | AI + Cr 48 | 33.0 ± 1.45 | 30.2–35.8 |
|     | FP + Cr 428 | 27.0 ± 0.685 | 25.7–28.4 |
| P < 0.001 | AI + FP + Cr 138 | 27.7 ± 1.14 | 25.4–29.9 |
| E   | AI 140 | 32.5 ± 0.849 | 30.8–34.1 |
|     | FP 417 | 31.2 ± 0.565 | 30.0–32.3 |
| P < 0.001 | Cr 325 | 21.8 ± 0.844 | 20.2–23.5 |
|     | Overall 279 ± 0.460 | 27.0–28.8 |
Table 2A–E shows patient survival during 36-month follow-up divided correspondingly to Table 1 AFS Table 3.

2. Experimental design, materials and methods

The data is based on 887 consecutive patients admitted to the Department of Vascular Surgery at the Turku University Hospital (Turku, Finland) either for diagnostic DSA or for endovascular treatment of PAD from January 1st 2009 to July 30th 2011. All patients were included regardless of earlier PAD history. Deaths and amputations within the patient cohort were registered for the first 36-months, which was the cut-off point for follow-up.

2.1. DSA analysis

The index classification was as described in TASC II for aorto-iliac and femoro-popliteal segments. Aorto-iliac and femoro-popliteal segments TASC II classification A–D, (coded as 1–4) were for the statistical analyses. For the crural region, all three vessels were first analysed separately and a Crural Index was formed accordingly (see for further description [1]). In order to assess for different classifications of arterial disease and disease level in lower limb arteries. Table 2A–E shows patient survival during 36-month follow-up divided correspondingly to Table 1 AFS Table 3.

Table 3
Mean estimated survival during 36-months follow-up, SE and 95% CI presented in the table for A) Aorto-iliac (AI), B) Femoro-popliteal (FP), C) Crural (Cr) grades I–IV, D) Localization of significant atherosclerotic lesion, E) The most severe atherosclerotic segment. Log-rank test shown on the left row of the table. Number of patients at risk for each group n.

|      | (n) | Mean Months ± SE | 95% CI; Lower-Upper Bound |
|------|-----|------------------|---------------------------|
| A    | AI I | (92) | 32.4 ± 1.01 | 30.5 – 34.4 |
|      | AI II| (57) | 31.5 ± 1.52 | 28.5 – 34.5 |
|      | AI III| (34) | 27.6 ± 2.31 | 23.0 – 32.1 |
|      | AI IV| (66) | 31.0 ± 1.36 | 28.4 – 33.7 |
|      | P=0.128 |     |                |                |
| B    | FP I | (82) | 29.7 ± 1.52 | 26.7 – 32.7 |
|      | FP II| (140) | 29.9 ± 1.05 | 27.8 – 31.9 |
|      | FP III| (114) | 28.9 ± 1.19 | 26.5 – 31.2 |
|      | FP IV| (330) | 28.8 ± 0.70 | 27.4 – 30.2 |
|      | P=0.247 |     |                |                |
| C    | Cr I | (70) | 31.4 ± 1.38 | 28.7 – 34.1 |
|      | Cr II| (235) | 31.4 ± 0.71 | 30.0 – 32.8 |
|      | Cr III| (289) | 28.4 ± 0.789 | 26.8 – 29.9 |
|      | Cr IV| (167) | 23.2 ± 1.14 | 20.9 – 25.4 |
|      | P=0.000 |     |                |                |
| D    | AI   | (25) | 36.2 ± 0.48 | 35.6 – 37.5 |
|      | FP   | (61) | 32.8 ± 1.26 | 30.3 – 35.3 |
|      | Cr   | (144) | 26.6 ± 1.15 | 24.4 – 28.9 |
|      | Al+FP| (36) | 33.3 ± 1.43 | 30.5 – 36.1 |
|      | Al+Cr| (48) | 33.3 ± 1.40 | 30.5 – 36.0 |
|      | FP+Cr| (429) | 28.4 ± 0.648 | 27.1 – 29.6 |
|      | P=0.030 |     |                |                |
| E    | AI   | (141) | 33.7 ± 0.713 | 32.3 – 35.1 |
|      | FP   | (416) | 31.9 ± 0.530 | 30.8 – 32.9 |
|      | Cr   | (325) | 23.8 ± 0.813 | 22.2 – 25.3 |
|      | Overall |     | 29.2 ± 0.430 | 28.3 – 30.0 |
|      | P=0.000 |     |                |                |

*Estimation is limited to the largest survival time 37 months*
different vascular segments against each other, each patient was assigned into a specific group of disease localisation: 1) aorto-iliac, 2) femoro-popliteal or 3) crural, based on which 0–IV rating gave the highest number.

2.2. Statistical analyses

All statistical analyses were performed using the IBM SPSS version 22 statistics program. Continuous variables were expressed as mean ± standard error (SE). Survival analyses were assessed by Kaplan–Meier curves and Log-rank statistics.

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Appendix A. Transparency document

Transparency data associated with this article can be found in the online version at http://dx.doi.org/10.1016/j.dib.2016.05.039.

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