*Supplementary Material*

**Visualizing Treatment Pathways Leading to Amputation and Non Amputation Using Sankey Diagrams, Sunburst Plots, and Icicle Plots in Peripheral Artery Disease [PAD] patients**

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**Supplementary Materials:**

**Table 1.** Unique Sequences in the STARR Data

|  |  |  |
| --- | --- | --- |
| **Treatment Sequence** | **Amputation Count (%)** | **Non-Amputation Count (%)** |
| anti\_platelet, lipid\_lowering | 25 (22.73%) | 1770 (32.12%) |
| lipid\_lowering | 24 (21.82%) | 926 (16.81%) |
| lipid\_lowering, anti\_platelet | 20 (18.18%) | 1321 (23.97%) |
| anti\_platelet | 18 (16.36%) | 556 (10.09%) |
| anti\_platelet, lipid\_lowering, revasc\_endo | 7 (6.36%) | 114 (2.07%) |
| anti\_platelet, revasc\_surgery | 3 (2.73%) | 24 (0.44%) |
| anti\_platelet, revasc\_surgery, lipid\_lowering | 2 (1.82%) | 51 (0.93%) |
| revasc\_surgery, lipid\_lowering | 2 (1.82%) | 10 (0.18%) |
| revasc\_surgery, lipid\_lowering, anti\_platelet, revasc\_endo | 2 (1.82%) | 8 (0.15%) |
| lipid\_lowering, anti\_platelet, revasc\_surgery | 1 (0.91%) | 60 (1.09%) |
| anti\_platelet, exercise\_therapy | 1 (0.91%) | 9 (0.16%) |
| revasc\_endo | 1 (0.91%) | 28 (0.51%) |
| revasc\_surgery, anti\_platelet, lipid\_lowering | 1 (0.91%) | 16 (0.29%) |
| anti\_platelet, lipid\_lowering, revasc\_surgery | 1 (0.91%) | 61 (1.11%) |
| lipid\_lowering, anti\_platelet, revasc\_endo | 1 (0.91%) | 82 (1.49%) |
| anti\_platelet, lipid\_lowering, exercise\_therapy | 1 (0.91%) | 49 (0.89%) |
| revasc\_surgery, lipid\_lowering, anti\_platelet | 0 (0.00%) | 27 (0.49%) |
| revasc\_surgery, anti\_platelet, lipid\_lowering, revasc\_endo | 0 (0.00%) | 2 (0.04%) |
| lipid\_lowering, anti\_platelet, revasc\_endo, revasc\_surgery | 0 (0.00%) | 7 (0.13%) |
| smoking\_cessation | 0 (0.00%) | 1 (0.02%) |
| lipid\_lowering, anti\_platelet, revasc\_surgery, exercise\_therapy, revasc\_endo | 0 (0.00%) | 1 (0.02%) |
| lipid\_lowering, anti\_platelet, revasc\_surgery, revasc\_endo | 0 (0.00%) | 21 (0.38%) |
| lipid\_lowering, anti\_platelet, smoking\_cessation | 0 (0.00%) | 2 (0.04%) |
| lipid\_lowering, exercise\_therapy | 0 (0.00%) | 6 (0.11%) |
| lipid\_lowering, exercise\_therapy, anti\_platelet | 0 (0.00%) | 18 (0.33%) |
| lipid\_lowering, exercise\_therapy, anti\_platelet, revasc\_endo | 0 (0.00%) | 3 (0.05%) |
| lipid\_lowering, revasc\_endo | 0 (0.00%) | 10 (0.18%) |
| lipid\_lowering, revasc\_endo, anti\_platelet | 0 (0.00%) | 5 (0.09%) |
| lipid\_lowering, revasc\_surgery | 0 (0.00%) | 7 (0.13%) |
| lipid\_lowering, revasc\_surgery, anti\_platelet | 0 (0.00%) | 11 (0.20%) |
| lipid\_lowering, revasc\_surgery, anti\_platelet, revasc\_endo | 0 (0.00%) | 5 (0.09%) |
| lipid\_lowering, smoking\_cessation, anti\_platelet | 0 (0.00%) | 1 (0.02%) |
| lipid\_lowering, smoking\_cessation, anti\_platelet, exercise\_therapy | 0 (0.00%) | 1 (0.02%) |
| revasc\_surgery, revasc\_endo | 0 (0.00%) | 1 (0.02%) |
| revasc\_endo, anti\_platelet | 0 (0.00%) | 4 (0.07%) |
| revasc\_endo, exercise\_therapy | 0 (0.00%) | 1 (0.02%) |
| revasc\_endo, exercise\_therapy, anti\_platelet | 0 (0.00%) | 1 (0.02%) |
| lipid\_lowering, anti\_platelet, revasc\_endo, exercise\_therapy | 0 (0.00%) | 1 (0.02%) |
| revasc\_endo, lipid\_lowering | 0 (0.00%) | 1 (0.02%) |
| revasc\_surgery, lipid\_lowering, revasc\_endo | 0 (0.00%) | 1 (0.02%) |
| revasc\_endo, lipid\_lowering, anti\_platelet | 0 (0.00%) | 2 (0.04%) |
| revasc\_endo, lipid\_lowering, anti\_platelet, revasc\_surgery | 0 (0.00%) | 1 (0.02%) |
| revasc\_surgery | 0 (0.00%) | 15 (0.27%) |
| revasc\_surgery, anti\_platelet | 0 (0.00%) | 10 (0.18%) |
| revasc\_surgery, lipid\_lowering, anti\_platelet, exercise\_therapy | 0 (0.00%) | 2 (0.04%) |
| revasc\_surgery, anti\_platelet, lipid\_lowering, exercise\_therapy, revasc\_endo | 0 (0.00%) | 1 (0.02%) |
| anti\_platelet, exercise\_therapy, lipid\_lowering, revasc\_surgery | 0 (0.00%) | 2 (0.04%) |
| lipid\_lowering, anti\_platelet, exercise\_therapy | 0 (0.00%) | 41 (0.74%) |
| lipid\_lowering, anti\_platelet, exercise\_therapy, revasc\_surgery | 0 (0.00%) | 1 (0.02%) |
| anti\_platelet, lipid\_lowering, revasc\_surgery, exercise\_therapy | 0 (0.00%) | 3 (0.05%) |
| anti\_platelet, revasc\_endo, lipid\_lowering, revasc\_surgery | 0 (0.00%) | 1 (0.02%) |
| anti\_platelet, revasc\_endo, lipid\_lowering | 0 (0.00%) | 17 (0.31%) |
| anti\_platelet, revasc\_endo | 0 (0.00%) | 59 (1.07%) |
| anti\_platelet, lipid\_lowering, smoking\_cessation | 0 (0.00%) | 2 (0.04%) |
| anti\_platelet, lipid\_lowering, revasc\_surgery, revasc\_endo | 0 (0.00%) | 25 (0.45%) |
| anti\_platelet, lipid\_lowering, revasc\_surgery, exercise\_therapy, revasc\_endo | 0 (0.00%) | 1 (0.02%) |
| anti\_platelet, lipid\_lowering, revasc\_endo, revasc\_surgery, exercise\_therapy | 0 (0.00%) | 2 (0.04%) |
| anti\_platelet, revasc\_surgery, lipid\_lowering, exercise\_therapy, revasc\_endo | 0 (0.00%) | 1 (0.02%) |
| anti\_platelet, lipid\_lowering, revasc\_endo, revasc\_surgery | 0 (0.00%) | 12 (0.22%) |
| anti\_platelet, lipid\_lowering, revasc\_endo, exercise\_therapy | 0 (0.00%) | 2 (0.04%) |
| anti\_platelet, lipid\_lowering, exercise\_therapy, revasc\_surgery, revasc\_endo | 0 (0.00%) | 1 (0.02%) |
| anti\_platelet, lipid\_lowering, exercise\_therapy, revasc\_surgery | 0 (0.00%) | 2 (0.04%) |
| anti\_platelet, lipid\_lowering, exercise\_therapy, revasc\_endo | 0 (0.00%) | 5 (0.09%) |
| anti\_platelet, exercise\_therapy, lipid\_lowering, revasc\_endo | 0 (0.00%) | 1 (0.02%) |
| anti\_platelet, revasc\_surgery, exercise\_therapy, lipid\_lowering, revasc\_endo | 0 (0.00%) | 1 (0.02%) |
| anti\_platelet, revasc\_surgery, lipid\_lowering, revasc\_endo | 0 (0.00%) | 15 (0.27%) |
| lipid\_lowering, anti\_platelet, exercise\_therapy, revasc\_endo | 0 (0.00%) | 3 (0.05%) |
| exercise\_therapy, lipid\_lowering, anti\_platelet | 0 (0.00%) | 5 (0.09%) |
| anti\_platelet, exercise\_therapy, revasc\_surgery, lipid\_lowering | 0 (0.00%) | 1 (0.02%) |
| anti\_platelet, exercise\_therapy, lipid\_lowering | 0 (0.00%) | 14 (0.25%) |
| exercise\_therapy, revasc\_endo, anti\_platelet | 0 (0.00%) | 1 (0.02%) |
| exercise\_therapy, lipid\_lowering, anti\_platelet, revasc\_surgery, revasc\_endo | 0 (0.00%) | 1 (0.02%) |
| exercise\_therapy, lipid\_lowering, anti\_platelet, revasc\_surgery | 0 (0.00%) | 1 (0.02%) |
| exercise\_therapy, lipid\_lowering, anti\_platelet, revasc\_endo | 0 (0.00%) | 1 (0.02%) |
| exercise\_therapy, lipid\_lowering | 0 (0.00%) | 5 (0.09%) |
| anti\_platelet, revasc\_surgery, revasc\_endo | 0 (0.00%) | 6 (0.11%) |
| exercise\_therapy, anti\_platelet, lipid\_lowering | 0 (0.00%) | 6 (0.11%) |
| exercise\_therapy, anti\_platelet | 0 (0.00%) | 6 (0.11%) |
| exercise\_therapy | 0 (0.00%) | 5 (0.09%) |
| anti\_platelet, smoking\_cessation, lipid\_lowering | 0 (0.00%) | 2 (0.04%) |
| anti\_platelet, revasc\_surgery, revasc\_endo, lipid\_lowering | 0 (0.00%) | 2 (0.04%) |
| anti\_platelet, revasc\_surgery, revasc\_endo, exercise\_therapy | 0 (0.00%) | 1 (0.02%) |
| smoking\_cessation, lipid\_lowering, anti\_platelet | 0 (0.00%) | 2 (0.04%) |

**Table 2.** Unique Sequences in the All of Us Data

|  |  |  |
| --- | --- | --- |
| **Treatment Sequence** | **Amputation Count (%)** | **Non-Amputation Count (%)** |
| anti\_platelet, lipid\_lowering | 94 (33.57%) | 2010 (48.95%) |
| revasc\_endo | 51 (18.21%) | 192 (4.68%) |
| anti\_platelet | 27 (9.64%) | 952 (23.19%) |
| anti\_platelet, lipid\_lowering, revasc\_endo | 27 (9.64%) | 120 (2.92%) |
| revasc\_endo, revasc\_surgery | 18 (6.43%) | 56 (1.36%) |
| anti\_platelet, lipid\_lowering, revasc\_endo, revasc\_surgery | 17 (6.07%) | 41 (1.00%) |
| lipid\_lowering | 15 (5.36%) | 588 (14.32%) |
| anti\_platelet, lipid\_lowering, revasc\_surgery | 10 (3.57%) | 43 (1.05%) |
| anti\_platelet, revasc\_endo | 8 (2.86%) | 18 (0.44%) |
| revasc\_surgery | 6 (2.14%) | 32 (0.78%) |
| lipid\_lowering, revasc\_endo | 4 (1.43%) | 17 (0.41%) |
| anti\_platelet, revasc\_endo, revasc\_surgery | 2 (0.71%) | 8 (0.19%) |
| anti\_platelet, revasc\_surgery | 1 (0.36%) | 6 (0.15%) |
| lipid\_lowering, revasc\_surgery | 0 (0.00%) | 1 (0.02%) |
| lipid\_lowering, revasc\_endo, revasc\_surgery | 0 (0.00%) | 1 (0.02%) |
| exercise\_therapy | 0 (0.00%) | 4 (0.10%) |
| exercise\_therapy, revasc\_endo, revasc\_surgery | 0 (0.00%) | 1 (0.02%) |
| exercise\_therapy, lipid\_lowering | 0 (0.00%) | 1 (0.02%) |
| anti\_platelet, exercise\_therapy, lipid\_lowering | 0 (0.00%) | 3 (0.07%) |
| anti\_platelet, exercise\_therapy, lipid\_lowering | 0 (0.00%) | 1 (0.02%) |
| anti\_platelet, exercise\_therapy, lipid\_lowering | 0 (0.00%) | 4 (0.10%) |
| smoking\_cessation | 0 (0.00%) | 7 (0.17%) |

**Table 3.** STARR Data – Odds Ratio Analysis

|  |  |  |  |
| --- | --- | --- | --- |
| **Pathway** | **Count\_Amputation** | **Count\_Non\_Amputation** | **Odds\_Ratio** |
| anti\_platelet | 18 | 556 | 1.743275 |
| anti\_platelet-exercise\_therapy | 1 | 9 | 5.607543 |
| anti\_platelet-exercise\_therapy-lipid\_lowering | 0 | 14 | 0 |
| anti\_platelet-exercise\_therapy-lipid\_lowering-revasc\_endo | 0 | 1 | 0 |
| anti\_platelet-exercise\_therapy-lipid\_lowering-revasc\_surgery | 0 | 2 | 0 |
| anti\_platelet-exercise\_therapy-revasc\_surgery-lipid\_lowering | 0 | 1 | 0 |
| anti\_platelet-lipid\_lowering | 25 | 1770 | 0.621469 |
| anti\_platelet-lipid\_lowering-exercise\_therapy | 1 | 49 | 1.022468 |
| anti\_platelet-lipid\_lowering-exercise\_therapy-revasc\_endo | 0 | 5 | 0 |
| anti\_platelet-lipid\_lowering-exercise\_therapy-revasc\_surgery | 0 | 2 | 0 |
| anti\_platelet-lipid\_lowering-exercise\_therapy-revasc\_surgery-revasc\_endo | 0 | 1 | 0 |
| anti\_platelet-lipid\_lowering-revasc\_endo | 7 | 114 | 3.216828 |
| anti\_platelet-lipid\_lowering-revasc\_endo-exercise\_therapy | 0 | 2 | 0 |
| anti\_platelet-lipid\_lowering-revasc\_endo-revasc\_surgery | 0 | 12 | 0 |
| anti\_platelet-lipid\_lowering-revasc\_endo-revasc\_surgery-exercise\_therapy | 0 | 2 | 0 |
| anti\_platelet-lipid\_lowering-revasc\_surgery | 1 | 61 | 0.819522 |
| anti\_platelet-lipid\_lowering-revasc\_surgery-exercise\_therapy | 0 | 3 | 0 |
| anti\_platelet-lipid\_lowering-revasc\_surgery-exercise\_therapy-revasc\_endo | 0 | 1 | 0 |
| anti\_platelet-lipid\_lowering-revasc\_surgery-revasc\_endo | 0 | 25 | 0 |
| anti\_platelet-lipid\_lowering-smoking\_cessation | 0 | 2 | 0 |
| anti\_platelet-revasc\_endo | 0 | 59 | 0 |
| anti\_platelet-revasc\_endo-lipid\_lowering | 0 | 17 | 0 |
| anti\_platelet-revasc\_endo-lipid\_lowering-revasc\_surgery | 0 | 1 | 0 |
| anti\_platelet-revasc\_surgery | 3 | 24 | 6.408879 |
| anti\_platelet-revasc\_surgery-exercise\_therapy-lipid\_lowering-revasc\_endo | 0 | 1 | 0 |
| anti\_platelet-revasc\_surgery-lipid\_lowering | 2 | 51 | 1.982208 |
| anti\_platelet-revasc\_surgery-lipid\_lowering-exercise\_therapy-revasc\_endo | 0 | 1 | 0 |
| anti\_platelet-revasc\_surgery-lipid\_lowering-revasc\_endo | 0 | 15 | 0 |
| anti\_platelet-revasc\_surgery-revasc\_endo | 0 | 6 | 0 |
| anti\_platelet-revasc\_surgery-revasc\_endo-exercise\_therapy | 0 | 1 | 0 |
| anti\_platelet-revasc\_surgery-revasc\_endo-lipid\_lowering | 0 | 2 | 0 |
| anti\_platelet-smoking\_cessation-lipid\_lowering | 0 | 2 | 0 |
| exercise\_therapy | 0 | 5 | 0 |
| exercise\_therapy-anti\_platelet | 0 | 6 | 0 |
| exercise\_therapy-anti\_platelet-lipid\_lowering | 0 | 6 | 0 |
| exercise\_therapy-lipid\_lowering | 0 | 5 | 0 |
| exercise\_therapy-lipid\_lowering-anti\_platelet | 0 | 5 | 0 |
| exercise\_therapy-lipid\_lowering-anti\_platelet-revasc\_endo | 0 | 1 | 0 |
| exercise\_therapy-lipid\_lowering-anti\_platelet-revasc\_surgery | 0 | 1 | 0 |
| exercise\_therapy-lipid\_lowering-anti\_platelet-revasc\_surgery-revasc\_endo | 0 | 1 | 0 |
| exercise\_therapy-revasc\_endo-anti\_platelet | 0 | 1 | 0 |
| lipid\_lowering | 24 | 926 | 1.381486 |
| lipid\_lowering-anti\_platelet | 20 | 1321 | 0.704685 |
| lipid\_lowering-anti\_platelet-exercise\_therapy | 0 | 41 | 0 |
| lipid\_lowering-anti\_platelet-exercise\_therapy-revasc\_endo | 0 | 3 | 0 |
| lipid\_lowering-anti\_platelet-exercise\_therapy-revasc\_surgery | 0 | 1 | 0 |
| lipid\_lowering-anti\_platelet-revasc\_endo | 1 | 82 | 0.607295 |
| lipid\_lowering-anti\_platelet-revasc\_endo-exercise\_therapy | 0 | 1 | 0 |
| lipid\_lowering-anti\_platelet-revasc\_endo-revasc\_surgery | 0 | 7 | 0 |
| lipid\_lowering-anti\_platelet-revasc\_surgery | 1 | 60 | 0.833333 |
| lipid\_lowering-anti\_platelet-revasc\_surgery-exercise\_therapy-revasc\_endo | 0 | 1 | 0 |
| lipid\_lowering-anti\_platelet-revasc\_surgery-revasc\_endo | 0 | 21 | 0 |
| lipid\_lowering-anti\_platelet-smoking\_cessation | 0 | 2 | 0 |
| lipid\_lowering-exercise\_therapy | 0 | 6 | 0 |
| lipid\_lowering-exercise\_therapy-anti\_platelet | 0 | 18 | 0 |
| lipid\_lowering-exercise\_therapy-anti\_platelet-revasc\_endo | 0 | 3 | 0 |
| lipid\_lowering-revasc\_endo | 0 | 10 | 0 |
| lipid\_lowering-revasc\_endo-anti\_platelet | 0 | 5 | 0 |
| lipid\_lowering-revasc\_surgery | 0 | 7 | 0 |
| lipid\_lowering-revasc\_surgery-anti\_platelet | 0 | 11 | 0 |
| lipid\_lowering-revasc\_surgery-anti\_platelet-revasc\_endo | 0 | 5 | 0 |
| lipid\_lowering-smoking\_cessation-anti\_platelet | 0 | 1 | 0 |
| lipid\_lowering-smoking\_cessation-anti\_platelet-exercise\_therapy | 0 | 1 | 0 |
| revasc\_endo | 1 | 28 | 1.796199 |
| revasc\_endo-anti\_platelet | 0 | 4 | 0 |
| revasc\_endo-exercise\_therapy | 0 | 1 | 0 |
| revasc\_endo-exercise\_therapy-anti\_platelet | 0 | 1 | 0 |
| revasc\_endo-lipid\_lowering | 0 | 1 | 0 |
| revasc\_endo-lipid\_lowering-anti\_platelet | 0 | 2 | 0 |
| revasc\_endo-lipid\_lowering-anti\_platelet-revasc\_surgery | 0 | 1 | 0 |
| revasc\_surgery | 0 | 15 | 0 |
| revasc\_surgery-anti\_platelet | 0 | 10 | 0 |
| revasc\_surgery-anti\_platelet-lipid\_lowering | 1 | 16 | 3.150229 |
| revasc\_surgery-anti\_platelet-lipid\_lowering-exercise\_therapy-revasc\_endo | 0 | 1 | 0 |
| revasc\_surgery-anti\_platelet-lipid\_lowering-revasc\_endo | 0 | 2 | 0 |
| revasc\_surgery-lipid\_lowering | 2 | 10 | 10.185185 |
| revasc\_surgery-lipid\_lowering-anti\_platelet | 0 | 27 | 0 |
| revasc\_surgery-lipid\_lowering-anti\_platelet-exercise\_therapy | 0 | 2 | 0 |
| revasc\_surgery-lipid\_lowering-anti\_platelet-revasc\_endo | 2 | 8 | 12.736111 |
| revasc\_surgery-lipid\_lowering-revasc\_endo | 0 | 1 | 0 |
| revasc\_surgery-revasc\_endo | 0 | 1 | 0 |
| smoking\_cessation | 0 | 1 | 0 |
| smoking\_cessation-lipid\_lowering-anti\_platelet | 0 | 2 | 0 |

**Table 4.** All of Us Data – Odds Ratio Analysis

|  |  |
| --- | --- |
| **Treatment Sequence** | **Odds Ratio** |
| anti\_platelet, lipid\_lowering | 0.527826 |
| anti\_platelet | 0.354067 |
| lipid\_lowering | 0.33917 |
| revasc\_endo | 4.550576 |
| anti\_platelet, lipid\_lowering, revasc\_endo | 3.551786 |
| revasc\_endo, revasc\_surgery | 4.977833 |
| anti\_platelet, lipid\_lowering, revasc\_surgery | 3.505663 |
| anti\_platelet, lipid\_lowering, revasc\_endo, revasc\_surgery | 6.420499 |
| revasc\_surgery | 2.792582 |
| anti\_platelet, revasc\_endo | 6.691267 |
| lipid\_lowering, revasc\_endo | 3.491765 |
| smoking\_cessation | 0 |
| anti\_platelet, revasc\_surgery | 2.453237 |
| exercise\_therapy | 0 |
| anti\_platelet, exercise\_therapy, lipid\_lowering, revasc\_endo | 0 |
| anti\_platelet, exercise\_therapy, lipid\_lowering | 0 |
| lipid\_lowering, revasc\_endo, revasc\_surgery | 0 |
| exercise\_therapy, revasc\_endo, revasc\_surgery | 0 |
| anti\_platelet, exercise\_therapy, lipid\_lowering, revasc\_endo, revasc\_surgery | 0 |
| exercise\_therapy, lipid\_lowering | 0 |
| lipid\_lowering, revasc\_surgery | 14.73741 |
|  |  |