**Table 1. Stroke rates from clinical trials in the LVAD population**

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| **Trial** | **Number of participants** | **Baseline character-**  **istics** | **Inclusion criteria** | **Intervention/**  **Comparison** | **Stroke event rate (event per patient year, EPPY)** | | **Duration of follow-up** |
| **Day 0-30** | **After day 30** |
| REMATCH [[15]](https://paperpile.com/c/aKvDC1/xdo7d) | 129 total (68 first-generation LVAD and 61 medical therapy) | LVAD: 78% male, age 66(9)  Medical: 82% male, age 68(8) | End-stage HF (NYHA Class IV) and contra- indication to HT | First-generation LVAD vs. medical therapy. Antithrombotic regimen unspecified. | Timing not specified.  LVAD: 0.39 “neurological dysfunction”  Medical: 0.09 “neurological dysfunction” | | Event-driven. One year mortality 48% LVAD, 75% medical; two-year 77% LVAD and 92% medical. |
| HeartMate II Bridge to Transplant, 2007[[16]](https://paperpile.com/c/aKvDC1/pmrYP) | All 133 participants received HeartMate II LVAD for bridge-to-  transplant | 79% male, age 50 (SD 13) | End-stage HF  (Class IV) waitlisted for HT | Non-  Randomized. HeartMate II LVAD (Thoratec, CF device)  With warfarin (INR target 2-3), aspirin 81 mg daily and dipyridamole 75 mg tid | Ischemic 0.49  Hemorrhagic 0.20 | Ischemic 0.06  Spinal cord infarct 0.02  Hemorrhagic 0.02 | 6 months  (75% reached 6 months, with 43% remaining on LVAD support and the remainder with HT or removed from the study for other reasons) |
| HeartMate II Destination Therapy, 2009 [[17]](https://paperpile.com/c/aKvDC1/mdvpy) | 200 total, (134 HeartMate II LVAD (CF) and 66 HeartMate XVE LVAD (PF) | Heart- Mate XVE: 92% male, age 63(12),  Heart- Mate II: 81% male, age 62(12) | Advanced HF (Class IIIB or IV), refractory to medical therapy and ineligible for HT | HeartMate II LVAD (Thoratec, continuous flow device) vs. HeartMate XVE LVAD (pulsatile flow device)  With warfarin (INR target 2-3), aspirin 81 mg daily and dipyridamole 75 mg three times daily | Timing not specified further within the first 2 years.  HeartMate XVE LVAD:  Ischemic 0.10  Hemorrhagic 0.12  HeartMate II LVAD:  Ischemic 0.06  Hemorrhagic 0.07 | | 24 months (44% of the HeartMate II and 27% of the HeartMate XVE groups died).  All but 2 in the HeartMate XVE group crossed over to HeartMate II group given need for reimplantation. |
| ADVANCE, 2012 [[18]](https://paperpile.com/c/aKvDC1/JTKLO) | 639 total (140 HeartWare device [HVAD] vs. 499 control INTERMACS patients with commercially available LVADs) | HVAD: 72% male, age 53(10)  LVAD: 76% male, age 52(12) | Advanced HF and eligible for HT | HVAD  vs. any commercially available LVAD  with warfarin (INR target 2-3) and aspirin 81 mg daily | HVAD:  Ischemic 0.62  TIA 0.18  Hemorrhagic 0.26 | HVAD:  Ischemic 0.04  TIA 0.06  Hemorrhagic 0.06 | 6 months (4.7% of HeartWare device [HVAD] patients had died and 27% had received HT) |
| HeartMate III CE Mark, follow-up 2019 [[19]](https://paperpile.com/c/aKvDC1/6FERc) | 50 received HeartMate III LVAS | Heart- Mate III LVAS: 90% male, age 59(13) | Advanced HF (Class IIIB or IV), with LVAS for bridge-to- HT or destination therapy | HeartMate III with VKA (INR target 2-3) and aspirin 81-100 mg daily | Timing of events not specified further within the first 180 days.  Ischemic 0.10  Hemorrhagic 0.05 | | 24 months (64% remained on LVAD support) |
| ROADMAP, 2017 [[5]](https://paperpile.com/c/aKvDC1/GLbQZ) | 200 total (97 LVAD, 103 medical therapy) | Heart-  Mate II LVAD: 77% male, age 64 (range 55-70) | Advanced HF (Class IIIB or IV) | HeartMate II with warfarin (INR target 2-3) and aspirin daily vs. optimal medical therapy | Timing not specified further within the first year.  HeartMate II LVAD:  Total 0.09  Ischemic 0.06  Hemorrhagic 0.03  Medical:  Total 0.03  Ischemic 0.02  Hemorrhagic 0.01 | | 24 months (62% remained on LVAD support) |
| ENDURANCE, 2017 [[6]](https://paperpile.com/c/aKvDC1/ZOiGX) | 446 total (297 HeartWare HVAD, 148 HeartMate II | HVAD: 76% male, age 64(12)  Heart- Mate II: 82% male, age 66(10) | Advanced HF (Class IIIB or IV), refractory to medical therapy and ineligible for HT | HVAD with recommendation for warfarin (INR target 2-3) and aspirin (81-325mg) daily vs. HeartMate II with warfarin and daily aspirin | Timing not specified further within the first 180 days.  HVAD:  Total stroke 0.29  Ischemic 0.17  Hemorrhagic 0.11  TIA 0.07  HeartMate II:  Total stroke 0.09  Ischemic 0.06  Hemorrhagic 0.03  TIA 0.03 | | 24 months (39.2% HVAD and 32.2% HeartMate II died) |
| PREVENT, 2017 [[20]](https://paperpile.com/c/aKvDC1/uLJTo) | 300 HeartMate II | HeartMate II: 83% male, age 57(13) | Advanced HF meeting FDA criteria for LVAD | Non-randomized. HeartMate II with warfarin (INR target 2-2.5) +/- daily aspirin 81-325mg | Timing not specified further within first 3 months.  HeartMate II  Ischemic 0.08  Hemorrhagic 0.05 | | 6 months (5% of received HT and 11% died) |
| MOMENTUM 3, 2019 [[14]](https://paperpile.com/c/aKvDC1/QX4Wv) | 1020 total (515 HeartMate III, 505 HeartMate II) | HeartMate III: 80% male, age 59(12)  HeartMate II: 82% male, age 60(12) | Advanced HF meeting criteria for LVAD as bridge-to-HT or destination therapy | HeartMate III with warfarin (INR target 2-3) and daily aspirin 81-325mg vs.  HeartMate II with warfarin (INR target 2-3) and daily aspirin 81-325mg | Timing not specified within first 6 months.  HeartMate III:  Total stroke 0.08  HeartMate II:  Total stroke 0.18 | | 24 months (53% remained on LVAD support) |

*VKA – vitamin K antagonist, HF - heart failure, HT - heart transplant, CF - continuous flow, PF - pulsatile flow, LVAS - Left Ventricular Assist System, HVAD – HeartWare Left Ventricular Assist Devices*

*\*“Neurologic dysfunction” composite of stroke, TIA and encephalopathy*