**Supplementary Appendix**

**Impact of resting heart rate at 30 days following transcatheter or surgical aortic valve replacement and cardiovascular outcomes; insights from PARTNER 2 trial.**

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**Supplemental Table 1: Complete multivariable model of the composite endpoint of death, rehospitalization or stroke at 2 years**

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| --- | --- | --- | --- | --- | --- |
|  | **Events** | **Patients** | **Variable** | **HR (95% CI)** | **p-Value** |
| **Death,****rehospitalization, or stroke**            | 522               | 3170               | Resting heart rate at 30 days (per 5bpm) | 1.07 (1.03, 1.11) | 0.0007 |
| Actual treatment, TAVR vs. SAVR | 1.10 (0.84, 1.43) | 0.49 |
| Age (per 10 years) | 1.05 (0.92, 1.19) | 0.45 |
| Male sex | 0.97 (0.80, 1.18) | 0.74 |
| BMI (per 5 kg/m2) | 0.96 (0.89, 1.03) | 0.28 |
| Diabetes mellitus | 1.28 (0.98, 1.66) | 0.07 |
| COPD | 1.10 (0.91, 1.33) | 0.34 |
| Creatinine ≥ 2  mg/dL | 1.51 (1.11, 2.06) | 0.009 |
| NYHA III or IV | 1.03 (0.81, 1.31) | 0.80 |
| Coronary artery disease | 1.19 (0.92, 1.54) | 0.17 |
| Hypertension | 1.00 (0.70, 1.44) | 0.98 |
| Prior PCI or CABG | 1.07 (0.87, 1.33) | 0.51 |
| LVEF ( per 5%) | 0.97 (0.93, 1.00) | 0.07 |
| Atrioventricular pacing at 30 days | 0.83 (0.60, 1.14) | 0.25 |
| Beta-blocker use at 30 days | 0.97 (0.80, 1.18) | 0.76 |

Hazard ratios (HR) and 95% confidence intervals (95% CI) are estimated by Cox proportional hazards regression models stratified by study cohort.

TAVR; transcatheter aortic valve replacement; SAVR, surgical valve replacement; BMI, body mass index; COPD, chronic obstructive pulmonary disease; NYHA, New York Heart Association heart failure class III or IV; PCI, percutaneous coronary intervention; CABG, coronary artery bypass grafting; LVEF, left ventricular ejection fraction

**Supplemental Table 2: Full model of adjudicative rehospitalization events from 30 days to 2 years in RHR as a continuous variable**

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| --- | --- | --- | --- | --- | --- |
|  | **Events** | **Patients** | **Variable** | **HR (95% CI)** | **p-Value** |
| **Aortic Valve Related Rehospitalization**             | 322               | 3170               | Heart rate at 30 days (per 5 bpm) | 1.09 (1.04, 1.14) | 0.0003 |
| Actual treatment, TAVR vs. SAVR | 1.31 (0.91, 1.87) | 0.14 |
| Age (per 10 years) | 1.01 (0.87, 1.18) | 0.88 |
| Male sex | 0.79 (0.61, 1.01) | 0.059 |
| BMI (per 5 kg/m2) | 1.05 (0.96, 1.14) | 0.33 |
| Diabetes mellitus | 1.23 (0.89, 1.70) | 0.21 |
| COPD | 1.27 (1.00, 1.62) | 0.049 |
| Creatinine ≥ 2 mg/dL | 1.49 (1.01, 2.21) | 0.045 |
| NYHA III or IV | 1.11 (0.80, 1.53) | 0.55 |
| Coronary artery disease | 1.30 (0.93, 1.81) | 0.13 |
| Hypertension | 1.01 (0.63, 1.61) | 0.97 |
| Prior PCI or CABG | 1.18 (0.90, 1.55) | 0.23 |
| LVEF (per 5%) | 0.96 (0.92, 1.01) | 0.09 |
| Atrioventricular pacing at 30 days | 0.73 (0.47, 1.13) | 0.16 |
| Beta-blocker use at 30 days | 1.04 (0.81, 1.34) | 0.77 |

Hazard ratios (HR) and 95% confidence intervals (95% CI) are estimated by Cox proportional hazards regression models stratified by study.

TAVR; transcatheter aortic valve replacement; SAVR, surgical valve replacement; BMI, body mass index; COPD, chronic obstructive pulmonary disease; NYHA, New York Heart Association heart failure class III or IV; PCI, percutaneous coronary intervention; CABG, coronary artery bypass grafting; LVEF, left ventricular ejection fraction; A/V, atrium/ventricular;

**Supplemental Table 3**: **Complete multivariable model of the composite endpoint of death, rehospitalization or stroke at 2 years with RHR ≥ 75 bpm**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Events | Patients | Variable | HR (95% CI) | p-Value |
| **Death,****rehospitalization, or stroke**              | 522               | 3170              | Heart rate at 30 days ≥75 bpm | 1.26 (1.05, 1.52) | 0.015 |
| Actual treatment, TAVR vs. SAVR | 1.07 (0.82, 1.40) | 0.60 |
| Age per 10 years | 1.04 (0.92, 1.18) | 0.53 |
| Male sex | 0.95 (0.78, 1.15) | 0.58 |
| BMI (per 5 kg/m2) | 0.96 (0.89, 1.04) | 0.29 |
| Diabetes mellitus | 1.29 (0.99, 1.68) | 0.06 |
| COPD | 1.11 (0.91, 1.34) | 0.30 |
| Creatinine ≥ 2 mg/dL | 1.52 (1.11, 2.07) | 0.008 |
| NYHA III or IV | 1.03 (0.82, 1.31) | 0.78 |
| Coronary artery disease | 1.18 (0.92, 1.53) | 0.20 |
| Hypertension | 1.00 (0.69, 1.43) | 0.98 |
| Prior PCI or CABG | 1.08 (0.88, 1.34) | 0.46 |
| LVEF (per 5%) | 0.97 (0.93, 1.00) | 0.053 |
| Atrioventricular pacing at 30 days | 0.84 (0.61, 1.16) | 0.30 |
| Beta-blocker use at 30 days | 0.96 (0.79, 1.17) | 0.67 |

Hazard ratios (HR) and 95% confidence intervals (95% CI) are estimated by Cox proportional hazards regression models stratified by study.

TAVR; transcatheter aortic valve replacement; SAVR, surgical valve replacement; BMI, body mass index; COPD, chronic obstructive pulmonary disease; NYHA, New York Heart Association heart failure class III or IV; PCI, percutaneous coronary intervention; CABG, coronary artery bypass grafting; LVEF, left ventricular ejection fraction;

**Supplemental Table 4: Full model of aortic valve-related rehospitalization at 2 years with RHR ≥ 75 bpm**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Events** | **Patients** | **Variable** | **HR (95% CI)** | **p-Value** |
| **Aortic valve-related Rehospitalization**             | 322               | 3170               | Heart rate at 30 days, ≥75 bpm | 1.42 (1.12, 1.79) | 0.004 |
| Actual treatment, TAVR vs. SAVR | 1.28 (0.89, 1.83) | 0.18 |
| Age (per 10 years) | 1.00 (0.85, 1.17) | 0.99 |
| Male sex | 0.77 (0.60, 0.98) | 0.035 |
| BMI (per 5 kg/m2) | 1.05 (0.96, 1.14) | 0.32 |
| Diabetes mellitus | 1.24 (0.90, 1.72) | 0.18 |
| COPD | 1.28 (1.01, 1.63) | 0.043 |
| Creatinine ≥ 2 mg/dL | 1.51 (1.02, 2.22) | 0.040 |
| NYHA III or IV | 1.11 (0.80, 1.54) | 0.54 |
| Coronary artery disease | 1.28 (0.92, 1.79) | 0.15 |
| Hypertension | 1.00 (0.62, 1.60) | 0.99 |
| Prior PCI or CABG | 1.20 (0.91, 1.57) | 0.20 |
| LVEF (per 5%) | 0.96 (0.92, 1.00) | 0.06 |
| Atrioventricular pacing at 30 days | 0.74 (0.48, 1.15) | 0.18 |
| Beta-blocker use at 30 days | 1.03 (0.80, 1.33) | 0.82 |

Hazard ratios (HR) and 95% confidence intervals (95% CI) are estimated by Cox proportional hazards regression models stratified by study.

TAVR; transcatheter aortic valve replacement; SAVR, surgical valve replacement; BMI, body mass index; COPD, chronic obstructive pulmonary disease; NYHA, New York Heart Association heart failure class III or IV; PCI, percutaneous coronary intervention; CABG, coronary artery bypass grafting; LVEF, left ventricular ejection fraction

**Supplemental Figure 1: Adjusted association between resting heart rate at 30-days and the risk of the primary composite endpoint of all-cause death, rehospitalization or stroke (A) and aortic valve-related reshospitalization at 2 years (B). Multivariable Cox proportional hazards regression was performed using a spline function to model resting heart rate as a continuous metric for the primary composite endpoint and aortic valve-related rehospitalization.**

**CI = confidence interval.**

