| Table J-46. Studies evaluating independent predictive value of NT-proBNP in both decompensated and stable population | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author**  **Year** | **Study Design**  **Population** | **n**  **Mean Age (SD)**  **%male** | **BNP, NT-proBNP Levels (pg/ml)** | **Prognostic Markers** | **Followup**  **(Outcomes)**  **(#events, #risk)** | **Model** | **Adjusted/Non-adjusted**  **Covariates** | **Measure(s) of Risk (95% CI,)** |
| Dini,194  2012 | Cohort  Patients with chronic systolic HF and LVEF ≤45% | n=400  mean age: 69y(12)  78% male | ADM mean: 1,572pg/mL\*\*  (725-3,637)  D/C mean: NA  Cutpoint: NA | log NT-proBNP age, sex, NYHA class, prior HF hospitalization, absolute and normalized furosemide dose,  heart rate, systolic and diastolic BP, AF, diabetes, LV mass index, end-diastolic and end-systolic LV volume indexes, LVEF, mitral E⁄A ratio, E⁄ e0, EDT, moderate to severe MR, LA volume index, right atrial pressure, and pulmonary artery systolic pressure. | 32\*\* months  All-cause mortality | cox proportional hazards | age, sex, NYHA class, prior HF hospitalization, absolute and normalized furosemide dose,  heart rate, systolic and diastolic BP, AF, diabetes, LV mass index, end-diastolic and end-systolic LV volume indexes, LVEF, mitral E⁄A ratio, E⁄ e0, EDT, moderate to severe MR, LA volume index, right atrial pressure, and pulmonary artery systolic pressure. | HR=2.04 (1.25-3.36) Wald Z-squared 8.0 p=0.005 |
| Cohort  Patients with stable HF | n=271  mean age: 68y(11)  81% male | ADM mean: 1,113pg/mL\*\*  (522-2,275)  D/C mean: NA  Cutpoint: NA | log NT-proBNP age, sex, NYHA class, prior HF hospitalization, absolute and normalized furosemide dose,  heart rate, systolic and diastolic BP, AF, diabetes, LV mass index, end-diastolic and end-systolic LV volume indexes, LVEF, mitral E⁄A ratio, E⁄ e0, EDT, moderate to severe MR, LA volume index, right atrial pressure, and pulmonary artery systolic pressure. | 32\*\* months  All-cause mortality | cox proportional hazards | age, sex, NYHA class, prior HF hospitalization, absolute and normalized furosemide dose,  heart rate, systolic and diastolic BP, AF, diabetes, LV mass index, end-diastolic and end-systolic LV volume indexes, LVEF, mitral E⁄A ratio, E⁄ e0, EDT, moderate to severe MR, LA volume index, right atrial pressure, and pulmonary artery systolic pressure. | NR |

| **Table J-46 Studies Evaluating independent predictive value of NT-proBNP in both decompensated and stable popualtions (continued)** | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author**  **Year** | **Study Design**  **Population** | **n**  **Mean Age (SD)**  **%male** | **BNP, NT-proBNP Levels (pg/ml)** | **Prognostic Markers** | **Followup**  **(Outcomes)**  **(#events, #risk)** | **Model** | **Adjusted/Non-adjusted**  **Covariates** | **Measure(s) of Risk (95% CI,)** |
| Dini,194  2012  (cont’d) | Cohort  Patients with decompensated HF | n=129  mean age: 70y(13)  74% male:74 | ADM mean:  3,637pg/mL\*\*  (2,323-4,149)  D/C mean: NA  Cutpoint: NA | log NT-proBNP age, sex, NYHA class, prior HF hospitalization, absolute and normalized furosemide dose, heart rate, systolic and diastolic BP, AF, diabetes, LV mass index, end-diastolic and end-systolic LV volume indexes, LVEF, mitral E⁄A ratio, E⁄ e0, EDT, moderate to severe MR, LA volume index, right atrial pressure, and pulmonary artery systolic pressure. | 32\*\* months  All-cause mortality | cox proportional hazards | age, sex, NYHA class, prior HF hospitalization, absolute and normalized furosemide dose, heart rate, systolic and diastolic BP, AF, diabetes, LV mass index, end-diastolic and end-systolic LV volume indexes, LVEF, mitral E⁄A ratio, E⁄ e0, EDT, moderate to severe MR, LA volume index, right atrial pressure, and pulmonary artery systolic pressure. | HR=1.0 (1.00-1.01) p=0.060 |
| Dini,193  2008 | Cohort  Out Patients with chronic HF, and LVEF≤45% | n=31  mean age:  69y(11)  78% male | ADM mean: 1,492  (617 – 3,540)\*\*  D/C mean: NR  Cutpoint: >1,492 | NT-proBNP, age, gender, NYHA class, LVEF, EDT, gender, coronary artery disease, Myocardial E wave velocity | 22 months  Composite (All-cause mortality + HF hospitalization) (111, 313) | multi-variable cox regression | age, gender, NYHA class, LVEF, EDT, gender, coronary artery disease, Myocardial E wave velocity | HR=2.94 (1.83, 4.72) |
| Cohort  Stabilized Out Patients with chronic HF, and LVEF≤45% | n=219  mean age:  69y(11)  80% male | ADM mean:  1,129  (478 – 2,223)\*\*  D/C mean: NR  Cutpoint: >1,129 | NT-proBNP, age, gender, NYHA class, LVEF, EDT, gender, coronary artery disease, Myocardial E wave velocity | 22 months  Composite (All-cause mortality + HF hospitalization) (NR, 219) | multi-variable cox regression | age, gender, NYHA class, LVEF, EDT, gender, coronary artery disease, Myocardial E wave velocity | HR=2.84 (1.44, 5.62) |
| Cohort  Decompensated Out Patients with chronic HF, and LVEF≤45% | n=94  mean age:  69y(11)  73% male | ADM mean:  3,430 (1,810 – 8,124)\*\*  D/C mean: NR  Cutpoint: >3,430 | NT-proBNP, age, gender, NYHA class, LVEF, EDT, gender, coronary artery disease, Myocardial E wave velocity | 22 months  Composite (All-cause mortality + HF hospitalization) (NR, 94) | multi-variable cox regression | age, gender, NYHA class, LVEF, EDT, gender, coronary artery disease, Myocardial E wave velocity | HR=2.06 (1.16, 3.67) |

**Abbreviations:** ADM = admission; AF = AF; BP = blood pressure; EDT = E wave deceleration time; EDT = E wave deceleration time; HF = heart failure; LV = left ventricular; LVEF = left ventricular ejection fraction; MR = mitral regurgitation; NR = not reported; NT-proBNP = N-terminal pro-B-type natriuretic peptide; NYHA = New York Heart Association; y=years