| Table J-22. Studies evaluating independent predictive value of NT-proBNP for the composite outcome of all-cause mortality and cardiovascular morbidity—admission and discharge (all time periods) in patients with decompensated heart failure |
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| **Author****Year** | **Study Design****Population** | **n****Mean Age (SD)****% male** | **BNP Levels (pg/ml)** | **Prognostic Markers** | **Followup****Outcomes****(#events, #risk)** | **Model** | **Adjusted/Non-adjusted Covariates** | **Measure(s) of Risk****(95% CI,)** |
| van Kimmenade502006PRIDE | Cohortpatients admitted with AHF | n=209mean age:72.8y (13.6)51% male  | ADM mean:dead= 9,332 (3,864–15,717)\*\*alive= 3,511 (1,610–9,541)\*\*D/C mean: NRCutpoint: NR | Log NT-proBNP\*, Log galectin-3, Glomerular filtration rate\*, NYHA functional classification\*, age | 2 monthscomposite (all-cause mortality / recurrent HF)(77, 209) | multivariable logistic regression | Log galectin-3, Glomerular filtration rate, NYHA functional classification, age | ADM: OR = 2.92 (0.53–9.11), p=0.42 |
| Metra702007 | Cohortpatients with AHF admitted to hospital | n=107mean age:survivors= 66y (13)dead= 68y (10)92% male  | ADM mean: 4,421 (1,621 – 8,536)\*\*D/C mean: 2,779 (967 – 6,392)\*\*Cutpoint: ≥3,000 | NT-proBNP at D/C, cTnT, NYHA class | 184 days\*\*composite (all-cause mortality or CV hospitalization)(52, 107) | multivariable Cox regression | Age, gender, BMI, SBP, HR, LVEF, sodium, cTnT, NYHA class | D/C: HR = 3.88 (3.25 - 4.52) |
| Perna482006  | Cohortdecompensated HF patients | n=76mean age:62.3y (15)71% male  | ADM mean: 6,234 (7,420)D/C mean: 5,146 (7,069)Cutpoint: >3,700 | NT-proBNP at ADM, cTnT, SBP, HR, blood urea, previous hospitalization, LVEF | 252 dayscomposite (all-cause mortality or HF re-hospitalizations(30, 76) | multi-variable cox regression | cTnT, SBP, HR, blood urea, previous hospitalization, LVEF | ADM: HR= 5.1 (2.3, 12.2), p<0.0001 |
| ADM mean: 6,234 (7,420)D/C mean:5,146 (7,069)Cutpoint: >3,700 | NT-proBNP at ADM, NT-proBNP D/C, cTnT, SBP, HR, blood urea, previous hospitalization, LVEF | 252 dayscomposite (all-cause mortality or HF re-hospitalizations(30, 76) | multi-variable cox regression | NT-proBNP D/C, cTnT, SBP, HR, blood urea, previous hospitalization, LVEF | ADM: HR= 5.0 (2.3, 11.2), p<0.0001 |
| Fernández642009  | Cohortpatients hospitalized for acute HF | n=138mean age:74y (67 - 80)\*\*54% male | ADM mean: Tertile 1= 2,358 (1,359–3,853)\*\*Tertile 2= 3,571 (1,680–7,597)\*\*Tertile 3= 5,255 (2,968–14,543)\*\*D/C mean: NRCutpoint: per 100 pg/dl | NT-proBNP, age, hyperlipidemia, NYHA class, DM, previous MI, anemia, cTnT, cystatin C, creatinine, MDRD | 261 days\*\*composite (all-cause mortality or HF re-ADM(60, 138) | multi-variable cox regression | age, hyperlipidemia, NYHA class, DM, previous MI, anemia, cTnT, cystatin C, creatinine, MDRD | ADM: HR=1.004 (1.001, 1.007) per 100 pg/dl |

| Table J-22. Studies evaluating independent predictive value of NT-proBNP for the composite outcome of all-cause mortality and cardiovascular morbidity—admission and discharge (all time periods) in patients with decompensated heart failure (continued) |
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| **Author****Year** | **Study Design****Population** | **n****Mean Age (SD)****% male** | **BNP Levels (pg/ml)** | **Prognostic Markers** | **Followup****Outcomes****(#events, #risk)** | **Model** | **Adjusted/Non-adjusted Covariates** | **Measure(s) of Risk****(95% CI,)** |
| Korewicki772011  | CohortSevere chronic HF in patients considered for heart transplantation | n=983mean age:49.38y (11.2)87.8% male | ADM mean: 2,294.5(28.0-46,128)D/C mean: NRCutpoint: ≥ 4,302 pg/mL | NT-proBNP, NYHA class, HFSS, BMI, hs-CRP, PCWP, PASP, SBP | 601 days\*\*composite (all-cause mortality or Heart transplantation(164, 983) | multi-variable cox regression | Left atrial volume index, Pulmonary artery systolic pressure, E/E ratio | ADM: HR= 1.600 (1.074, 2.385), p<0.0001 |

\*\*median

**Abbreviations:** ADM = admission; AF = atrial fibrillation; BMI = body mass index; CRP = C-reactive protein; cTnT = cardiac troponin T; D/C = discharge; DM = diabetes mellitus; EF = ejection fraction; HF = heart failure; HFSS = Heart Failure Survival Score; HR = heart rate; hsCRP = high-sensitivity c-reactive protein; LV = left ventricular; MDRD = Modification of Diet in Renal Disease formula; MI = myocardial infarction; NR=not reported; NT-proBNP = N-terminal pro-B-type natriuretic peptide; NYHA = New York Heart Association; PASP = pulmonary artery systolic pressure; PCWP = pulmocapillary wedge pressure; SBP = systolic blood pressure; yrs=years