**Supplemental table 2: Joint model of the risk of incident diabetes mellitus by time-updated BUN categorized in quintiles and eGFR categories**

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| --- | --- | --- | --- | --- | --- |
|  | **BUN quintile 1**  Hazard Ratio  (95% confidence interval) | **BUN quintile 2**  Hazard Ratio  (95% confidence interval) | **BUN quintile 3**  Hazard Ratio  (95% confidence interval) | **BUN quintile 4**  Hazard Ratio  (95% confidence interval) | **BUN quintile 5**  Hazard Ratio  (95% confidence interval) |
| **eGFR≥60 ml/min/1.73m2** | 1.00 | 1.05  (1.03, 1.06) | 1.05  (1.03, 1.06) | 1.07  (1.05, 1.09) | 1.17  (1.15, 1.20) |
| **60>eGFR≥45 ml/min/1.73 m2** | 1.02  (0.97, 1.07) | 1.02  (0.99, 1.06) | 1.03  (0.99, 1.07) | 1.07  (1.05, 1.10) | 1.20  (1.17, 1.23) |
| **45>eGFR≥30 ml/min/1.73 m2** | 0.99  (0.84, 1.17) | 0.91  (0.80, 1.04) | 0.99  (0.91, 1.08) | 1.07  (1.01, 1.13) | 1.19  (1.16, 1.22) |
| **eGFR<30 ml/min/1.73m2** | 1.11  (0.80, 1.53) | 1.50  (0.92, 2.45) | 0.79  (0.49, 1.29) | 1.00  (0.78, 1.28) | 1.31  (1.26, 1.36) |
| The primary predictor was time-varying combination of BUN and eGFR categories. BUN quintile was based on ranking within participants at risk at each time point. BUN quintile 1 and eGFR≥ 60 ml/min/1.73m2 served as the reference category.  Survival model controlled for time independent variables age, race and gender and time-varying variables carbon dioxide, BMI, albuminuria, frequency of outpatient encounters, frequency of hospitalizations, chronic lung disease, peripheral artery disease, cardiovascular disease, cerebrovascular disease, dementia, hyperlipidemia, hepatitis C, HIV, cancer and use of medications that increase risk of diabetes mellitus  eGFR<30 ml/min/1.73 m2 were grouped together to prevent too few events in each category | | | | | |