

SUPPLEMENTARY MATERIAL

Table S1. Patient characteristics and outcomes. Groups were created based on whether suPAR was measured and reported at the index admission (suPAR group) or not (control group).

| Characteristic | suPAR group (N=7,905) | Control group (N=8,896) | P |
|--|----------------------------------|------------------------------------|----------|
| Hospital, no. of patients (%) | | | |
| Bispebjerg Hospital | 2,895 (36.6) | 4,125 (46.4) | |
| Herlev Hospital | 5,010 (63.4) | 4,771 (53.6) | |
| Patients | | | |
| Female sex, no. (%) | 4,173 (52.8) | 4,691 (52.9) | 0.95 |
| Age, years, mean (SD) | 60.5 (20.7) | 60.7 (20.8) | 0.47 |
| Charlson score, mean (SD) | 0.7 (1.5) | 0.7 (1.5) | 0.42 |
| Biomarker blood level, median (IQR) | | | |
| Albumin (g/L) | 39 (35–43) | 39 (34–42) | <0.001* |
| Creatinine (µmol/L) | 75 (62–94) | 75 (63–93) | 0.75 |
| CRP (mg/L) | 5 (3–41) | 5 (3–40) | 0.02* |
| Hemoglobin (mmol/L) | 8.3 (7.5–9.0) | 8.3 (7.6–9.1) | 0.30 |
| suPAR (ng/ml) | 4.1 (2.9–6.0) | n.a. | |
| OUTCOMES | | | |
| Discharged within 24 hours, no. (%) | 3,966 (50.2) | 4,317 (48.6) | 0.04* |
| Length of stay (days), mean (SD) | 4.3 (7.4) | 4.6 (9.4) | 0.04* |
| 30-day mortality | 315 (4.0) | 363 (4.1) | 0.78 |
| Readmissions within 30 days, no. (%) | 839 (10.6) | 785 (8.8) | <0.001* |
| CRP: C-reactive protein, IQR: Interquartile range, SD: standard deviation, suPAR: soluble urokinase plasminogen activator receptor. * P<0.05 | | | |

Table S2. Patient characteristics. Comparison of patients admitted in control periods and patients arriving in interventional periods, but who did not have a valid suPAR level at admission.

| Characteristic | No suPAR (N=1,002) | Control group (N=7,898) | P |
|--|-------------------------------|------------------------------------|----------|
| Hospital, no. of patients (%) | | | |
| Bispebjerg Hospital | 562 (56.1) | 3,563 (45.1) | |
| Herlev Hospital | 440 (43.9) | 4,331 (54.9) | |
| Patients | | | |
| Female sex, no. (%) | 521 (52.0) | 4,170 (52.8) | 0.64 |
| Age, years, mean (SD) | 60.9 (20.7) | 59.6 (21.4) | 0.08 |
| Charlson score, mean (SD) | 0.6 (1.2) | 0.7 (1.5) | 0.002* |
| Biomarker blood levels, median (IQR) | | | |
| Albumin (g/L) | 38 (34–42) | 39 (34–42) | 0.02* |
| Creatinine (µmol/L) | 77 (64–94) | 75 (62–93) | 0.07 |
| CRP (mg/L) | 4 (3–28) | 5 (3–41) | <0.001* |
| Hemoglobin (µmol/L) | 8.3 (7.6–9.1) | 8.3 (7.6–9.1) | 0.57 |
| OUTCOMES | | | |
| Discharged within 24 hours, no. (%) | 463 (46.2) | 3,854 (48.8) | 0.12 |
| 30-day mortality | 44 (4.4) | 319 (4.0) | 0.66 |
| Length of stay (days), mean (SD) | 5.0 (13.5) | 4.5 (8.7) | 0.29 |
| 30-day mortality | 44 (4.4) | 319 (4.0) | 0.66 |
| Readmissions within 30 days, no. (%) | 78 (7.8) | 707 (9.0) | 0.24 |
| CRP: C-reactive protein, IQR: Interquartile range, SD: standard deviation, suPAR: soluble urokinase plasminogen activator receptor. * P<0.05 | | | |

Table S3. Patient characteristics at index admission for patients discharged from the emergency department within 24 hours compared to patients with longer admissions

| Characteristics | Discharged within 24 hours (N = 8,283) | Not discharged within 24 hours (N=8,492) | P |
|--|--|--|---------|
| Hospital, no. patients (%) | | | |
| Bispebjerg Hospital | 2,966 (35.8%) | 4,049 (47.7%) | |
| Herlev Hospital | 5,317 (64.2%) | 4,443 (52.3%) | |
| Patients | | | |
| Female sex, no. (%) | 4,431 (53.5%) | 4,421 (52.1%) | 0.07 |
| Age, years, mean (SD) | 53.5 (20.6) | 67.5 (18.4) | <0.001* |
| Charlson score, mean (SD) | 0.48 (1.2) | 0.91 (1.7) | <0.001* |
| Biomarker blood level, median (IQR) | | | |
| Albumin (g/L) | 41 (37–44) | 37 (32–41) | <0.001* |
| Creatinine (μmol/L) | 73 (61–87) | 79 (64–102) | <0.001* |
| CRP (mg/L) | 3.0 (3.0–14.0) | 14.5 (3.0–75.1) | <0.001* |
| Hemoglobin (mmol/L) | 8.6 (7.9–9.2) | 8.1 (7.2–8.9) | <0.001* |
| suPAR (ng/mL) | 3.5 (3.5–4.8) | 4.9 (3.5–7.2) | <0.001* |

CRP: C-reactive protein, IQR: Interquartile range, SD: standard deviation, suPAR: soluble urokinase plasminogen activator receptor. P<0.05

Table S4. Patient characteristics and outcomes stratified according to hospital

| Characteristic | suPAR Group | Control Group | P |
|--|--------------------|----------------------|----------|
| Bispebjerg Hospital: 7,020 patients | | | |
| Allocation | 2,895 (41.2) | 4,125 (58.8) | |
| Female sex, no. (%) | 1,497 (51.7) | 2,198 (53.3) | 0.20 |
| Age, years, mean (SD) | 59.6 (21.4) | 60.4 (21.0) | 0.11 |
| Discharged within 24 hours, no. (%) | 1,222 (42.2) | 1,744 (42.3) | 0.96 |
| Length of stay (days), mean (SD) | 5.0 (8.4) | 5.1 (10.6) | 0.70 |
| 30-day mortality, no. (%) | 119 (4.1) | 176 (4.3) | 0.76 |
| Readmissions within 30 days, no. (%) | 300 (10.4) | 385 (9.3) | 0.15 |
| Herlev Hospital: 9,781 patients | | | |
| Allocation | 5,010 (51.2) | 4,771 (48.8) | |
| Female sex, no. (%) | 2,676 (53.4) | 2,493 (52.3) | 0.26 |
| Age, years, mean (SD) | 61.0 (20.2) | 61.1 (20.6) | 0.98 |
| Discharged within 24 hours, no. (%) | 2,744 (54.8) | 2,573 (53.9) | 0.48 |
| Length of stay (days), mean (SD) | 3.9 (6.6) | 4.1 (8.2) | 0.15 |
| 30-day mortality, no. (%) | 196 (3.9) | 187 (3.9) | 1 |
| Readmissions within 30 days, no. (%) | 539 (10.8) | 400 (8.4) | <0.01 |

SUPPLEMENTARY FIGURES

Figure S1. Survival of patients discharged within 24 hours from the emergency department stratified according to suPAR quartiles measured at index admission. Log rank test: $P < 0.001$.

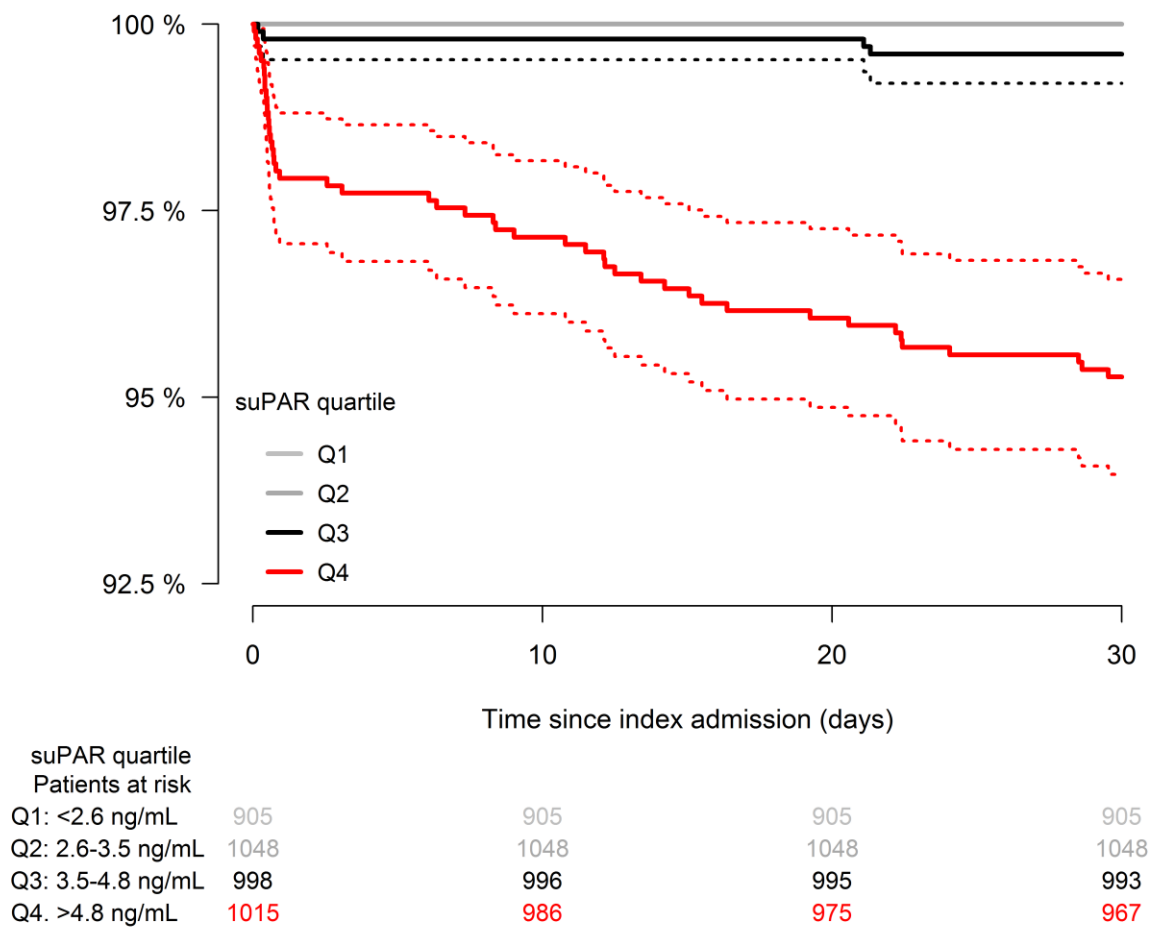


Figure S2 ROC curve comparison of biomarker model and suPAR. Receiver operating characteristics curves for 30-day all-cause mortality displaying predictive abilities of a biomarker model (including levels of albumin, creatinine, C-reactive protein, and haemoglobin), the biomarker soluble urokinase plasminogen activator receptor (suPAR), as well as the biomarker model combined with suPAR. No suPAR: biomarker model without suPAR; suPAR included: biomarker model including suPAR.

