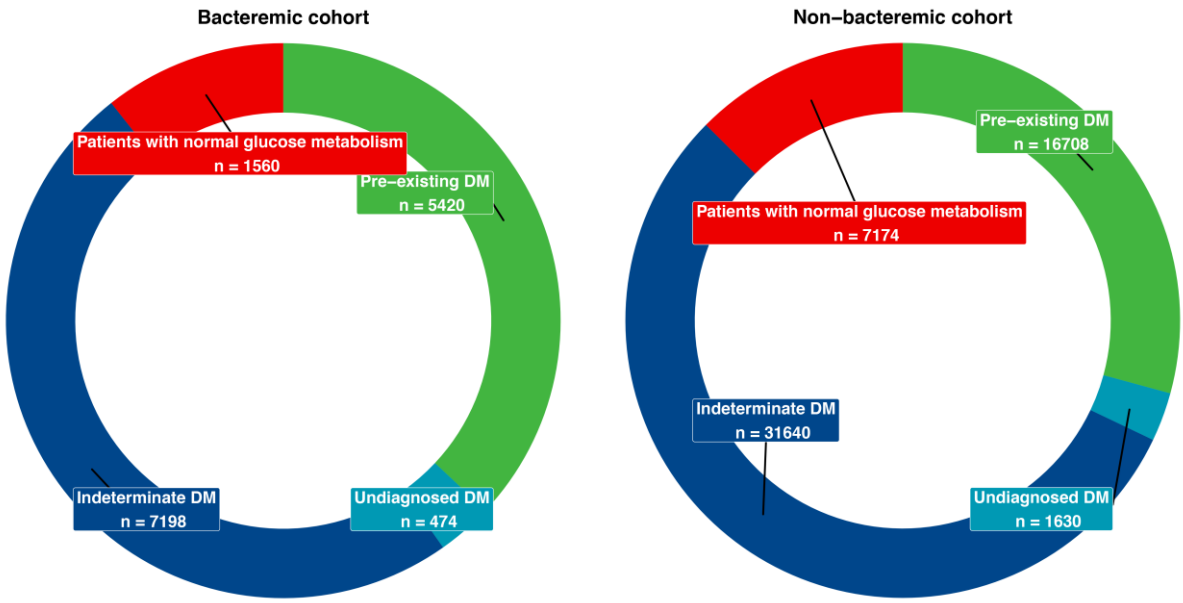
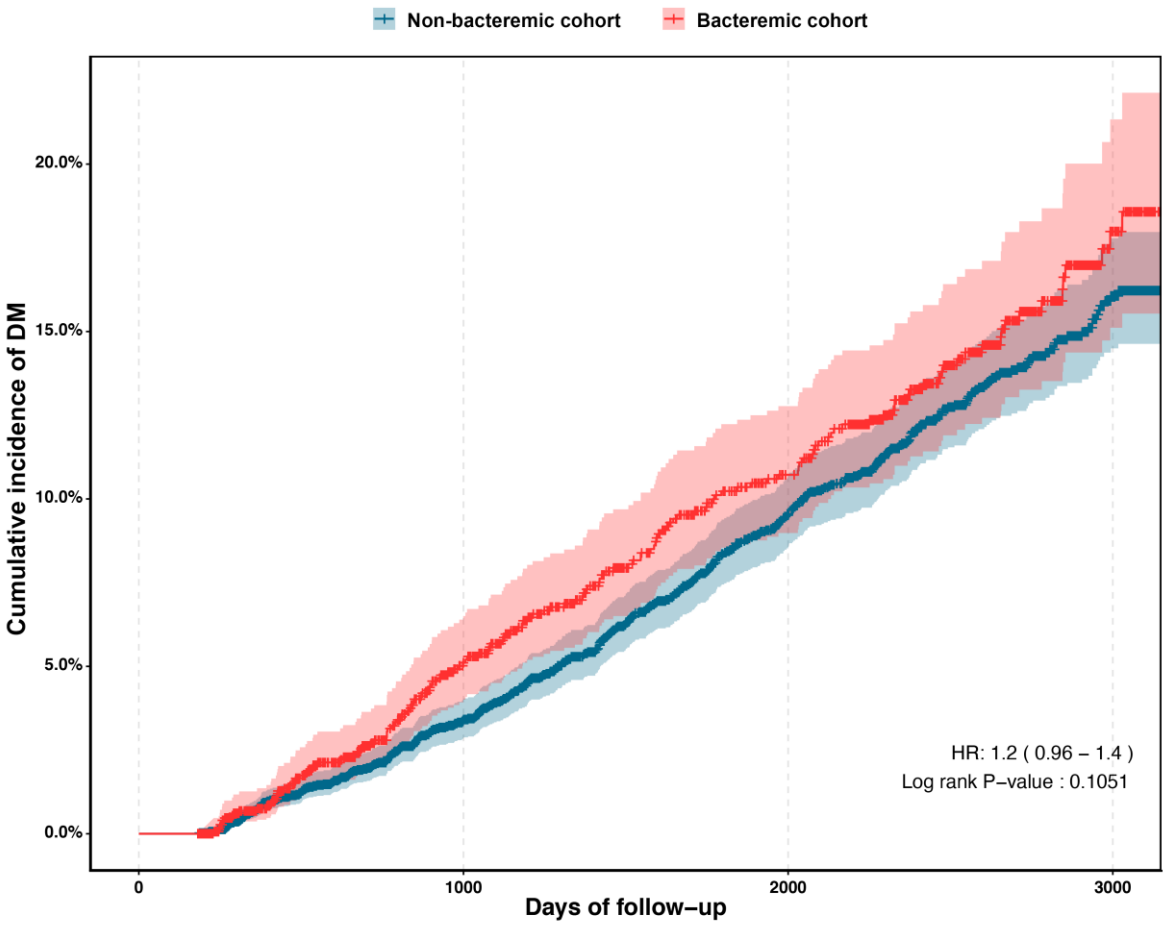
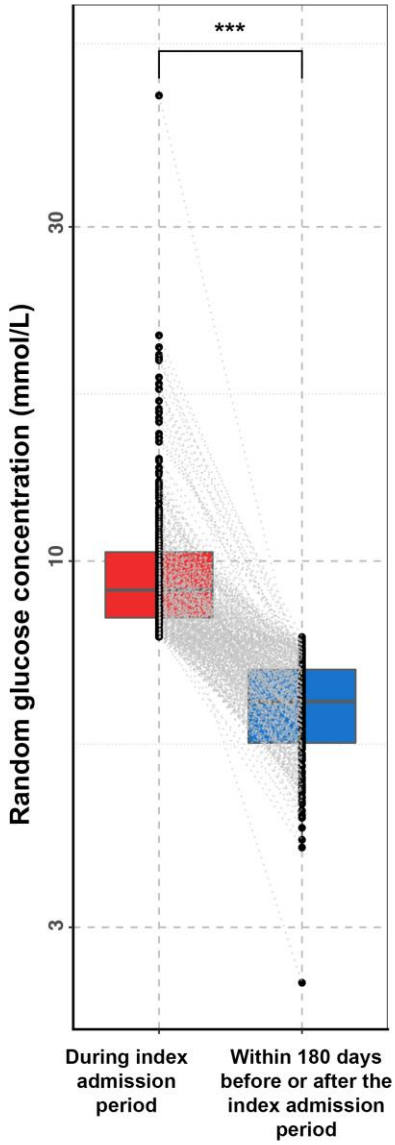


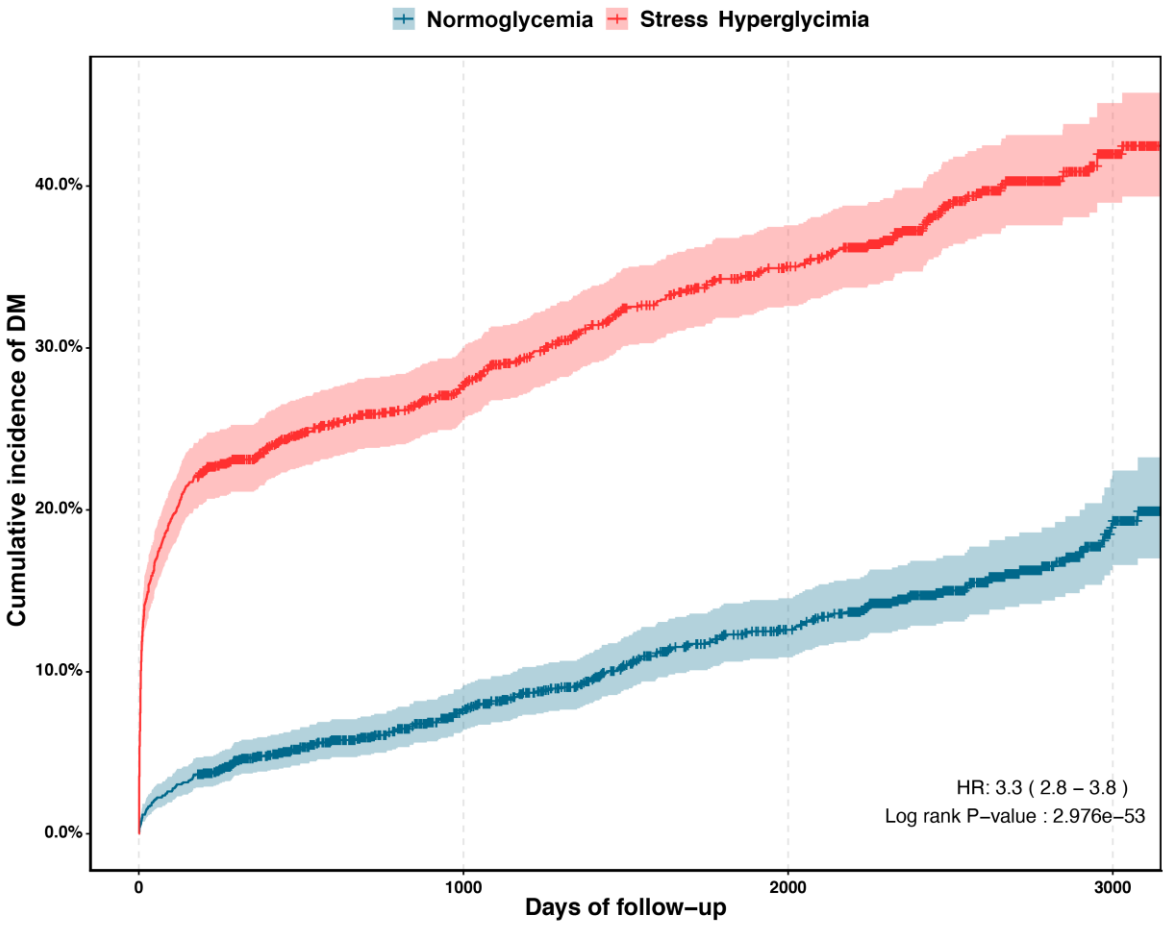
Supplementary Figure 1 Distribution of pre-existing/undiagnosed diabetes mellitus and indeterminate diabetes mellitus status in the bacteremic and non-bacteremic cohorts. DM, diabetes mellitus.



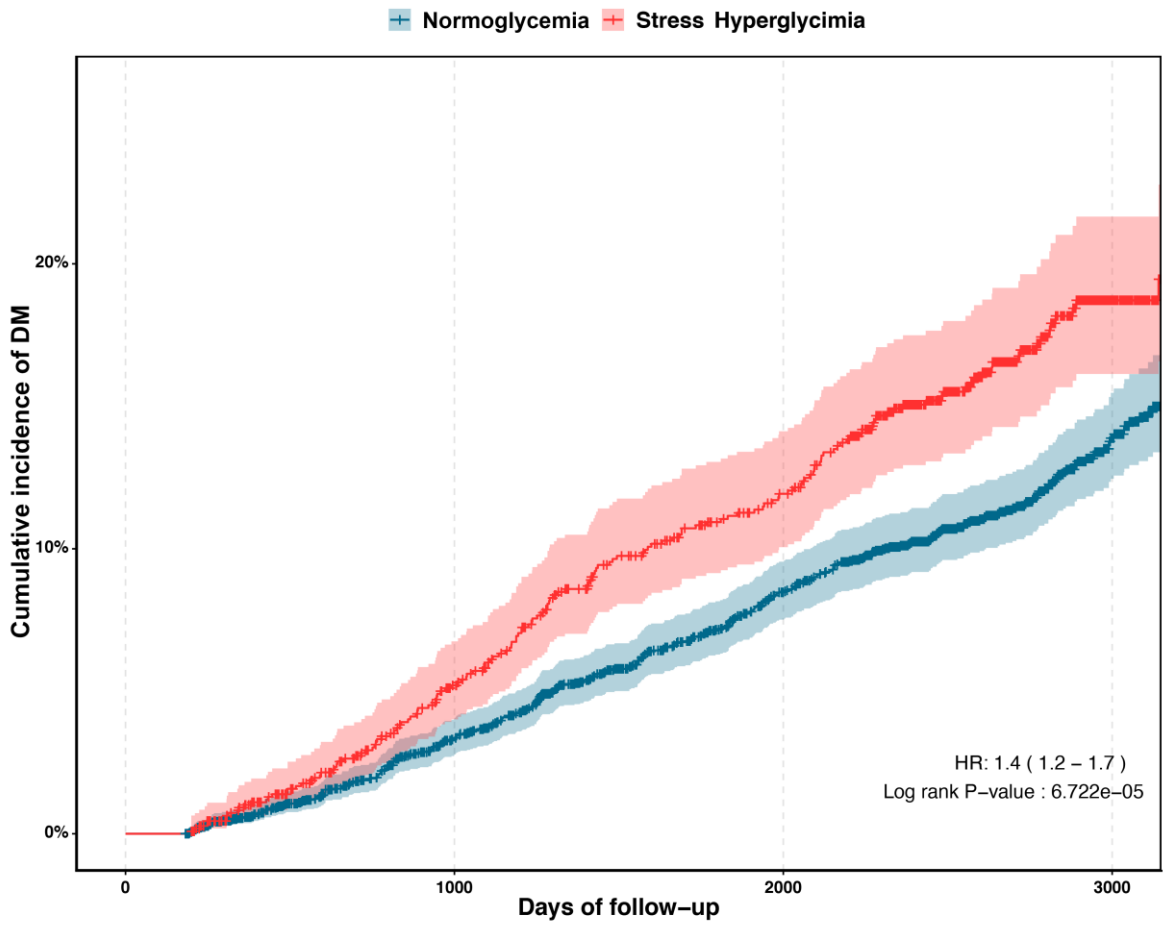
Supplementary Figure 2 Bacteremic and non-bacteremic patients had a similar risk for subsequent DM. A total of 1,560 bacteremic and 7,174 non-bacteremic patients without pre-existing or undiagnosed DM or indeterminate DM status were selected (before propensity score matching). After 1:3 propensity score matching for age, sex, co-morbidity score and corticosteroid use, the cumulative incidences of subsequent DM of 1,560 bacteremic patients and 4,680 non-bacteremic patients were compared using Kaplan-Meier estimator. There was no significant difference between the two cohorts (p = 0.105).



Supplementary Figure 3 Boxplot showing the highest random glucose records during hospitalization and within 180 days before or after the index admission period among bacteremic patients with stress hyperglycemia. ***, $p < 0.001$.



Supplementary Figure 4 Sensitivity analysis by re-inclusion of patients diagnosed of DM within 180 days after discharge, abnormal glucose metabolism detected within 180 days after discharge and patients without random glucose measurement within 180 days before or after the index admission. Bacteremic patients with stress hyperglycaemia showed an increased risk for subsequent DM when compared to bacteremic patients with normoglycemia, especially during the early period within 180 days after discharge.



Supplementary Figure 5 Association between stress hyperglycaemia and subsequent DM risk among general hospitalized patients that had not undergone any blood culture during the index admission period. Among the 8,221 patients without pre-existing, undiagnosed or indeterminate DM, 1,105 developed stress hyperglycemia. After 1:3 propensity score matching for age, sex, co-morbidity score and corticosteroid use, the cumulative incidences of subsequent DM of 1,105 stress hyperglycemic patients and 3,315 normoglycemic patients were compared using Kaplan-Meier estimator. Patients with stress hyperglycemia had higher cumulative incidence of subsequent DM (HR = 1.4, 95% CI = 1.2 – 1.7, $p < 0.001$).

Supplementary Table 1 List of ICD-9 diagnoses included in the calculation of co-morbidity score in accordance with the Charlson Comorbidity Index

ICD9 code	Description
250	Diabetes mellitus
290,294	Organic psychotic conditions
331	Cerebral degenerations
362	Retinal disorders
398, 410, 412, 416, 425, 428, 785	Heart diseases
402, 404	Hypertensive diseases
430-438	Cerebrovascular diseases
93, 440, 441, 443, 446, 447, 557, V43.4	Vascular diseases
456.0, 456.1, 456.2	Esophageal varices
503, 504, 505, 506, 508	Pneumoconiosis
531-534	Peptic ulcer
70, 570, 571, 573, 572.2, 572.3, 572.4, 572.8, V42.7	Liver diseases
582, 583, 585, 586, 588	Renal diseases
710	Connective tissue disease
714	Rheumatoid arthritis
725	Polymyalgia rheumatica

Supplementary Table 2 Covariates before and after propensity score matching for the bacteremic versus non-bacteremic cohorts.

Characteristics	Before propensity score matching			After propensity score matching		
	Bacteremic Patients Median [IQR], Max, N or Count (%)	**Non-Bacteremic Patients** Median [IQR], Max, N or Count (%)	*p*-value	**Bacteremic Patients** Median [IQR], Max, N or Count (%)	**Non-Bacteremic Patients** Median [IQR], Max, N or Count (%)	*p*-value
No. of Patients	1560	7174		1560	4680	
Age	76 [28], 108, 1560	73 [32], 112, 7174	0.001	76 [28], 108, 1560	76 [28], 112, 4680	0.848
Gender [Male]	815(52.244%)	3704(51.631%)	0.681	815(52.244%)	2411(51.517%)	0.640
Co-morbidity Score	0 [1], 6, 1560	0 [1], 6, 7174	<0.001***	0 [1], 6, 1560	0 [1], 6, 4680	0.216
Steroid use	210(13.462%)	1342(18.706%)	<0.001***	210(13.462%)	603(12.885%)	0.587
Subsequent DM	152(9.744%)	628(8.754%)	0.233	152(9.744%)	407(8.697%)	0.229

N: sample size

Pearson Chi-square for number of cases

U test for Median

Supplementary Table 3 Patient characteristics for bacteremic patients with stress hyperglycemia (n = 410) or without stress hyperglycemia (n = 1150) after stratification using the random glucose cut-off of 7.8 mmol/L. *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

Characteristics	Stress hyperglycemic Median(IQR), Max, N or Count(%)	Normoglycemic Median(IQR), Max, N or Count(%)	P-value
Demographics			
Age	75.5 [24], 101, 410	77 [30], 108, 1150	0.651
Gender [Male]	199(48.537%)	616(53.565%)	<0.001***
Co-morbidity Score	0 [1], 4, 410	0 [1], 6, 1150	0.079
Drug use			
Steroid use	70(17.073%)	140(12.174%)	<0.001***
Complete blood count tests			
Hemoglobin, Blood	11.2 [3.075], 16.9, 398	11.3 [2.8], 17.3, 1137	0.873
WBC	12.5 [8.538], 47.4, 398	12.1 [8.3], 517, 1137	0.176
Neutrophil, absolute	10.905 [7.985], 43.1, 398	10.2 [7.9], 53.5, 1134	0.227
Platelet	174 [113], 735, 398	183 [115], 1258, 1137	0.305
MCV (Mean Cell Vol)	90.7 [7.875], 122, 398	91 [8.6], 121.5, 1137	0.452
Basophil	0.5 [0.54], 8.9, 398	0.5 [0.6], 5.27, 1134	0.500
Eosinophil	0 [0.06], 3.73, 398	0.01 [0.07], 5.8, 1133	0.270
Lymphocyte	0.6 [0.6], 17.8, 398	0.67 [0.7], 15.9, 1134	0.409
Metamyelocyte	0.38 [1.935], 56.46, 19	0.14 [0.432], 26.98, 48	0.036*
Monocyte	0.5 [0.54], 8.9, 398	0.5 [0.6], 5.27, 1134	0.500
MCH	30.9 [2.9], 43, 398	30.9 [3.1], 41.1, 1137	0.405
MCHC	33.8 [1.4], 37.7, 398	33.8 [1.3], 36.9, 1137	0.864
Myelocyte	0.21 [0.62], 50.81, 49	0.13 [0.41], 31.64, 93	0.198
Reticulocyte	48.44 [21.372], 285, 31	42.55 [31.075], 165, 96	0.131
RBC	3.7 [1.017], 5.89, 398	3.73 [0.96], 6.66, 1137	0.617
HCT	0.332 [0.093], 0.493, 398	0.334 [0.083], 0.505, 1137	0.710
Liver and renal function tests			
Urate	0.322 [0.154], 0.84, 127	0.31 [0.16], 0.95, 313	0.922
Albumin	31.9 [9], 51, 398	31.4 [9], 49, 1134	0.352
Alkaline Phosphatase	99 [82.75], 625, 398	89 [65], 1613, 1135	0.030*
Alanine Aminotransferase	28 [55.75], 954, 398	21 [29], 2561, 1134	<0.001***
Aspartate Aminotransferase	40 [50], 4163, 204	35 [57], 2079, 436	0.492
Bilirubin	16 [18], 174, 398	15.6 [15], 484, 1135	0.426
Protein, Total	65 [12.275], 99, 398	67 [10.675], 105, 1134	<0.001***
Sodium	137 [7], 155, 398	137 [6], 166, 1135	0.087
Potassium	3.7 [0.8], 7.8, 398	3.8 [0.793], 6.8, 1134	0.517
Urea	6.7 [5.4], 77.3, 397	6.6 [4.8], 61.9, 1135	0.245
Creatinine	95 [70], 1365, 397	93 [60.5], 1428, 1135	0.290
Lipid and other biochemical tests			
Cholesterol, LDL	2.21 [1.025], 5.3655, 68	2.34 [1.143], 6.6136, 208	0.616
Cholesterol, HDL	1.23 [0.565], 3.55, 71	1.14 [0.63], 4.11, 217	0.835
Cholesterol, Total	3.925 [1.375], 7.23, 74	3.96 [1.65], 9, 237	0.975
Triglyceride	1 [0.698], 4.09, 73	0.98 [0.565], 9.11, 231	0.698
CRP	7.75 [13.39], 45.9, 255	7.05 [11.07], 49, 654	0.552
Gamma-glutamyl transferase	87 [176.5], 1379, 107	78 [151], 1694, 241	0.328
Calcium	2.11 [0.21], 2.81, 389	2.11 [0.193], 2.78, 1112	0.717
Iron Binding Capacity	34.5 [15.477], 80.4, 130	34 [15.4], 73, 358	0.386
Vitamin B12	274.276 [286.869], 1476, 111	344.1 [340.7], 1476, 386	0.013*
Folate	14.764 [13.804], 45.4, 70	15.7 [16.45], 45.4, 227	0.274
Ferritin	657.8 [933.851], 20096.1992, 84	844.65 [1103.398], 90944, 220	0.130
Phosphate	0.95 [0.45], 3.93, 385	0.96 [0.36], 4.58, 1074	0.667

Supplementary Table 4 Covariates before and after propensity score matching for the hyperglycemic versus normoglycemic patients with bacteremia.

Characteristics	Before propensity score matching			After propensity score matching		
	Stress Hyperglycemia Patients Median [IQR], Max, N or Count (%)	**Normoglycemic Patients** Median [IQR], Max, N or Count (%)	*p*-value	**Stress Hyperglycemia Patients** Median [IQR], Max, N or Count (%)	**Normoglycemic Patients** Median [IQR], Max, N or Count (%)	*p*-value
No. of Patients	410	1150		410	820	
Age	75.5 [24], 101, 410	77 [30], 108, 1150	0.651	75.5 [24], 101, 410	77 [27], 108, 820	0.379
Gender [Male]	199(48.537%)	616(53.565%)	0.091	199(48.537%)	396(48.293%)	0.984
Co-morbidity Score	0 [1], 4, 410	0 [1], 6, 1150	0.079	0 [1], 4, 410	0 [1], 5, 820	0.903
Steroid use	70(17.073%)	140(12.174%)	0.016*	70(17.073%)	129(15.732%)	0.603
Subsequent DM	58(14.146%)	94(8.174%)	<0.001***	58(14.146%)	64(7.805%)	<0.001***

N: sample size

Pearson Chi-square for number of cases

U test for Median

Supplementary Table 5 Patient characteristics for bacteremic patients (n = 1560) who developed DM (n = 152) or did not develop DM (n=1408). *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

Characteristics	DM Median (IQR), Max, N or Count (%)	Normal Median (IQR), Max, N or Count (%)	*p*-value
Demographics			
Age	74 [23], 98, 152	77 [28.25], 108, 1408	0.310
Gender [Male]	80(52.632%)	735(52.202%)	<0.001***
Co-morbidity Score	0 [1], 6, 152	0 [1], 6, 1408	0.503
Glycemic response			
Highest random glucose during admission	7.165 [2.505], 16.01, 152	6.7 [2.02], 46.2, 1408	0.010**
Stress hyperglycemia	58(38.158%)	352(25%)	<0.001***
Drug use			
Steroid use	25(16.447%)	185(13.139%)	<0.001***
Complete blood count tests			
Hemoglobin, Blood	11.1 [3.35], 15.3, 143	11.3 [2.8], 17.3, 1392	0.763
WBC	11.9 [8.355], 50.4, 143	12.265 [8.35], 517, 1392	0.767
Neutrophil, absolute	10.57 [8.555], 47.78, 143	10.31 [7.86], 53.5, 1389	0.686
Platelet	171 [101], 580, 143	181 [116], 1258, 1392	0.686
MCV (Mean Cell Vol)	91.3 [8.5], 109.8, 143	90.8 [8.4], 122, 1392	0.436
Basophil	0.5 [0.63], 2.96, 143	0.5 [0.57], 8.9, 1389	0.595
Eosinophil	0.01 [0.08], 0.76, 143	0.01 [0.069], 5.8, 1388	0.453
Lymphocyte	0.667 [0.62], 15.9, 143	0.64 [0.7], 17.8, 1389	0.797
Metamyelocyte	0.435 [1.297], 56.46, 8	0.17 [0.485], 41.63, 59	0.053
Monocyte	0.5 [0.63], 2.96, 143	0.5 [0.57], 8.9, 1389	0.595
MCH	30.9 [3.3], 36.6, 143	30.9 [3.1], 43, 1392	0.560
MCHC	33.8 [1.6], 36.2, 143	33.8 [1.3], 37.7, 1392	0.888
Myelocyte	0.445 [0.947], 50.81, 18	0.13 [0.41], 31.64, 124	0.023*
Reticulocyte	47.4 [15.066], 113, 13	44.7 [30.5], 285, 114	0.784
RBC	3.6 [1.115], 5.5, 143	3.74 [0.962], 6.66, 1392	0.370
HCT	0.325 [0.096], 0.462, 143	0.334 [0.084], 0.505, 1392	0.792
Liver and renal function tests			
Urate	0.38 [0.196], 0.95, 47	0.31 [0.155], 0.84, 393	0.002**
Albumin	31.7 [9.25], 44, 143	31.4 [9], 51, 1389	0.855
Alkaline Phosphatase	96 [76], 1075, 143	90 [68.75], 1613, 1390	0.386
Alanine Aminotransferase	24 [36.5], 954, 143	22 [37], 2561, 1389	0.984
Aspartate Aminotransferase	40.5 [50.25], 1244, 60	36 [51.5], 4163, 580	0.338
Bilirubin	15.8 [15.5], 192.4, 143	16 [16], 484, 1390	0.805
Protein, Total	67 [11.1], 92, 143	66.4 [11], 105, 1389	0.612
Sodium	138 [6], 166, 143	137 [6], 162, 1390	0.690
Potassium	3.8 [0.7], 5.4, 143	3.8 [0.8], 7.8, 1389	0.167
Urea	7.3 [6.8], 61.9, 143	6.5 [4.8], 77.3, 1389	0.048*
Creatinine	105 [86.5], 1428, 143	92 [61], 1365, 1389	0.013*
Lipid and other biochemical tests			
Cholesterol, LDL	2.292 [1.307], 4.49, 32	2.313 [1.047], 6.6136, 244	0.738
Cholesterol, HDL	1.13 [0.66], 2.19, 33	1.19 [0.62], 4.11, 255	0.683
Cholesterol, Total	4.3 [1.865], 6.91, 35	3.9 [1.49], 9, 276	0.768
Triglyceride	1 [0.75], 4.09, 35	0.99 [0.6], 9.11, 269	0.348
CRP	8.548 [12.5], 39.5, 85	7.252 [11.422], 49, 824	0.109
Gamma-glutamyl transferase	97 [211.5], 1031, 31	79 [151], 1694, 317	0.436
Calcium	2.11 [0.18], 2.53, 141	2.11 [0.193], 2.81, 1360	0.845
Iron Binding Capacity	32.55 [15.675], 59.4, 46	34.182 [15.375], 80.4, 442	0.888
Vitamin B12	413.5 [462.79], 1107, 42	320.652 [341.305], 1476, 455	0.449
Folate	18.332 [16.3], 45.4, 25	15.404 [14.752], 45.4, 272	0.405
Ferritin	507.492 [1090.175], 90944, 30	814 [1053.411], 33000, 274	0.201
Phosphate	0.94 [0.39], 4.58, 135	0.955 [0.382], 3.93, 1324	0.857

Supplementary Table 6 Univariate Cox Proportional hazard model of using clinical and laboratory parameters for predicting subsequent DM in the bacteremic cohort. *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$. HR, hazard ratio.

	HR [95% CI]	*p*-value
Demographics		
Age	1.02 (1.006-1.024)	<0.001***
Gender [Male]	1.06 (0.7717-1.459)	0.715
Co-morbidity Score	1.34 (1.154-1.567)	<0.001***
Glycemic response		
Highest random glucose during index admission	1.05 (0.9899-1.109)	0.107
Stress hyperglycemia	1.64 (1.182-2.275)	0.003**
Complete blood count tests		
Haemoglobin, Blood	0.939 (0.8712-1.012)	0.101
WBC	1 (0.9923-1.009)	0.898
Neutrophil, absolute	1.02 (0.9933-1.037)	0.176
Platelet	1 (0.9985-1.001)	0.996
MCV (Mean Cell Vol)	1.02 (0.9962-1.036)	0.115
Basophil	1.17 (0.8854-1.549)	0.269
Eosinophil	0.597 (0.1733-2.059)	0.414
Lymphocyte	1.08 (0.9211-1.261)	0.350
Metamyelocyte	1.02 (0.9781-1.065)	0.349
Monocyte	1.17 (0.8854-1.549)	0.269
MCH	1.02 (0.9746-1.076)	0.348
MCHC	0.903 (0.7876-1.036)	0.147
Myelocyte	1.02 (0.9672-1.066)	0.541
Reticulocyte	1 (0.9845-1.018)	0.882
RBC	0.776 (0.6209-0.9694)	0.025*
HCT * 10	0.826 (0.6359-1.072)	0.150
Liver and renal function tests		
Urate * 10	1.42 (1.19-1.702)	<0.001***
Albumin	0.983 (0.9597-1.006)	0.148
Alkaline Phosphatase	1 (0.9996-1.002)	0.160
Alanine Aminotransferase	0.999 (0.9982-1.001)	0.427
Aspartate Aminotransferase	1 (0.999-1.001)	0.820
Bilirubin	0.998 (0.9915-1.004)	0.441
Protein, Total	1.01 (0.9894-1.025)	0.447
Sodium	1 (0.9725-1.038)	0.771
Potassium	1.29 (0.9996-1.658)	0.050
Urea	1.03 (1.017-1.05)	<0.001***
Creatinine	1.001 (1.001-1.002)	<0.001***
Lipid and other biochemical tests		
Cholesterol, LDL	0.94 (0.6587-1.341)	0.732
Cholesterol, HDL	0.879 (0.4253-1.818)	0.729
Cholesterol, Total	0.986 (0.7557-1.287)	0.920
Triglyceride	1.05 (0.7358-1.499)	0.786
CRP	1.01 (0.9833-1.029)	0.619
Gamma-glutamyl transferase	1 (0.9996-1.002)	0.176
Calcium	1.01 (0.3918-2.608)	0.982
Iron Binding Capacity	0.988 (0.9645-1.012)	0.325
Vitamin B12	1 (0.9991-1.001)	0.959
Folate	1.02 (0.9899-1.051)	0.194
Ferritin	1 (1-1)	0.131
Phosphate	1.19 (0.8097-1.757)	0.372

Supplementary Table 7 Multivariate Cox Regression of using clinical and laboratory parameters for predicting subsequent DM in the bacteremic cohort. Missing values were imputed. *, $p < 0.05$; **, $p < 0.01$. HR, hazard ratio.

	HR [95% CI]	Adjusted *p*-values
Stress Hyperglycemia	1.6 (1.132-2.25)	0.009**
Age	1.01 (1.004-1.024)	0.005**
Gender [Male]	1.04 (0.74-1.475)	0.827
Comorbidity Score	1.2 (1.016-1.406)	0.037*
Steroid use	1.1 (0.6973-1.732)	0.669
RBC	0.785 (0.6306-0.9812)	0.039*
Urate * 10	1.35 (1.105-1.639)	0.003**
Urea	0.99 (0.953-1.025)	0.614
Potassium	1.16 (0.8906-1.524)	0.265
Creatinine	1 (0.9988-1.002)	0.425

Supplementary Table 8 Covariates before and after propensity score matching for the stress hyperglycemic versus normoglycemic patients without bacteremia.

Characteristics	Before propensity score matching			After propensity score matching		
	Stress Hyperglycemia Patients Median [IQR], Max, N or Count (%)	**Normoglycemic Patients** Median [IQR], Max, N or Count (%)	*p*-value	**Stress Hyperglycemia Patients** Median [IQR], Max, N or Count (%)	**Normoglycemic Patients** Median [IQR], Max, N or Count (%)	*p*-value
No. of Patients	1551	5623		1551	3102	
Age	72 [28], 105, 1551	73 [33], 112, 5623	0.086	72 [28], 105, 1551	73 [27], 112, 3102	0.433
Gender [Male]	806(51.966%)	2898(51.538%)	0.787	806(51.966%)	1608(51.838%)	0.959
Co-morbidity Score	0 [1], 4, 1551	0 [1], 6, 5623	0.077	0 [1], 4, 1551	0 [1], 6, 3102	0.811
Steroid use	371(23.92%)	971(17.268%)	<0.001***	371(23.92%)	723(23.308%)	0.669
Subsequent DM	189(12.186%)	439(7.807%)	<0.001***	189(12.186%)	268(8.64%)	<0.001***

N: sample size

Pearson Chi-square for number of cases

U test for Median

Supplementary Table 9 Covariates before and after propensity score matching for the stress hyperglycemic versus normoglycemic patients that had not undergone blood culture.

Characteristics	Before propensity score matching			After propensity score matching		
	Stress Hyperglycemia Patients Median [IQR], Max, N or Count (%)	**Normoglycemic Patients** Median [IQR], Max, N or Count (%)	*p*-value	**Stress Hyperglycemia Patients** Median [IQR], Max, N or Count (%)	**Normoglycemic Patients** Median [IQR], Max, N or Count (%)	*p*-value
No. of Patients	1105	7116		1105	3315	
Age	63 [28], 104, 1105	56 [37], 103, 7116	<0.001***	63 [28], 104, 1105	63 [28], 102, 3315	0.580
Gender [Male]	495(44.796%)	3436(48.286%)	0.033*	495(44.796%)	1497(45.158%)	0.861
Co-morbidity Score	0 [0], 3, 1105	0 [0], 5, 7116	0.265	0 [0], 3, 1105	0 [0], 5, 3315	0.103
Steroid use	133(12.036%)	508(7.139%)	<0.001***	133(12.036%)	352(10.618%)	0.211
Subsequent DM	165(14.932%)	617(8.671%)	<0.001***	165(14.932%)	348(10.498%)	<0.001***

N: sample size

Pearson Chi-square for number of cases

U test for Median