Supplementary Table SI. Normal range of coagulation biomarkers

Variable	Min.	Max.
Coagulation biomarker:		
Prothrombin time [s]	9.8	14.00
Activated partial thromboplastin time [s]	25.00	36.00
Fibrinogen [g/l]	2.00	4.00
International normalized ratio	0.8	1.2
D-dimer [mg/l]	0	0.55
Platelets [10^9/l]	125	350
Mean platelet volume [fl]	7.8	11.0
Bone turnover markers:		
β-cross-linked C-terminal telopeptide of type I [ng/l]	43.0	783.0
25-hydroxyvitamin D [nmol/l]	0	30.00
Procollagen type I N propeptide [µg/l]	9.06	76.24
Osteocalcin [µg/l]	6.00	24.66
Calcium [mmol/l]	2.10	2.60

Supplementary Table SII. Correlation of coagulation biomarkers with patients' characteristics among three groups

Parameter		Age		BMI		Sex		Hypertension	
		r	*P*-value	*r*	*P*-value	*r*	*P*-value	*r*	*P*-value
Normal (*N* = 46)	PT	–0.169	0.262	–0.355	**0.015**	–0.005	0.973	–0.361	**0.014**
	APTT	–0.123	0.417	–0.154	0.305	–0.256	0.086	–0.091	0.548
	FIB	0.002	0.990	0.210	0.161	0.042	0.780	0.134	0.373
	INR	–0.183	0.222	–0.346	**0.019**	0.000	1.000	–0.314	**0.034**
	D-dimer	0.260	0.081	–0.009	0.955	–0.177	0.240	–0.005	0.972
	PLT	–0.187	0.213	–0.139	0.357	0.097	0.523	–0.124	0.412
	MPV	–0.139	0.356	0.076	0.616	–0.048	0.754	0.259	0.083
Osteopenia (*N* = 129)	PT	0.131	0.138	0.017	0.844	0.179	**0.043**	0.004	0.960
	APTT	–0.102	0.250	–0.036	0.684	0.043	0.629	0.034	0.700
	FIB	0.056	0.527	–0.071	0.423	0.030	0.740	0.130	0.143
	INR	0.124	0.162	0.002	0.983	0.176	**0.047**	–0.001	0.992
	D-dimer	0.298	**0.001**	0.112	0.206	–0.054	0.543	0.134	0.130
	PLT	–0.114	0.197	–0.086	0.335	0.093	0.294	0.049	0.578
	MPV	0.009	0.922	0.005	0.953	–0.140	0.113	–0.057	0.521
Osteoporosis (*N* = 131)	PT	0.221	**0.011**	0.019	0.830	–0.167	0.056	0.156	0.076
	APTT	–0.024	0.789	–0.056	0.522	–0.240	**0.006**	–0.071	0.420
	FIB	0.064	0.464	–0.100	0.256	0.009	0.918	–0.069	0.435
	INR	0.225	**0.010**	0.023	0.797	–0.166	0.058	0.142	0.106
	D-dimer	0.277	**0.001**	0.026	0.767	–0.082	0.352	0.050	0.570
	PLT	–0.001	0.995	–0.021	0.808	0.041	0.641	–0.027	0.759
	MPV	–0.073	0.407	–0.007	0.938	–0.097	0.269	0.083	0.346

BMI – body mass index, PT – prothrombin time, APTT – activated partial thromboplastin time, FIB – fibrinogen, INR – international normalized ratio, PLT – platelets, MPV – mean platelet volume, **Boldface** *indicates p-value < 0.05.*

Supplementary Table SIII. Correlation of coagulation biomarkers with bone turnover markers among three groups

Variable		β-CTX		25-(OH)D		PINP		Osteocalcin		Calcium	
		r	*P*-value	*r*	*P*-value	*r*	*P*-value	*r*	*P*-value	*r*	*P*-value
Normal (*N* = 46)	PT	–0.109	0.469	–0.016	0.914	–0.068	0.653	–0.175	0.243	–0.110	0.465
	APTT	0.038	0.804	–0.146	0.332	–0.068	0.653	0.101	0.503	–0.285	0.055
	FIB	–0.166	0.271	0.283	0.056	–0.163	0.279	–0.192	0.202	0.323	**0.029**
	INR	–0.108	0.475	0.006	0.970	–0.067	0.659	–0.165	0.274	–0.054	0.722
	D-dimer	–0.266	0.074	0.076	0.614	–0.187	0.213	–0.247	0.099	0.000	0.999
	PLT	0.016	0.917	0.401	**0.006**	–0.033	0.825	0.036	0.812	0.458	**0.001**
	MPV	0.121	0.422	–0.128	0.396	0.169	0.262	0.129	0.392	–0.097	0.523
Osteopenia (*N* = 129)	PT	0.169	0.055	0.081	0.360	0.199	**0.024**	0.065	0.463	–0.227	**0.010**
	APTT	0.062	0.482	–0.155	0.078	–0.007	0.933	0.052	0.556	0.010	0.908
	FIB	–0.015	0.866	0.040	0.653	0.096	0.279	0.015	0.864	0.166	0.060
	INR	0.189	**0.032**	0.104	0.239	0.218	**0.013**	0.081	0.362	–0.215	**0.014**
	D-dimer	–0.001	0.995	0.067	0.167	0.129	0.145	0.082	0.357	0.005	0.959
	PLT	0.056	0.527	0.194	**0.028**	0.142	0.109	0.115	0.195	0.146	0.099
	MPV	–0.088	0.319	–0.298	**0.001**	–0.020	0.822	–0.107	0.225	0.135	0.127
Osteoporosis (*N* = 131)	PT	–0.178	**0.041**	0.232	**0.008**	–0.092	0.297	–0.208	**0.017**	–0.041	0.644
	APTT	–0.072	0.414	–0.207	**0.018**	0.060	0.498	0.058	0.508	–0.176	**0.045**
	FIB	–0.029	0.746	0.086	0.331	–0.048	0.586	–0.121	0.170	–0.060	0.495
	INR	–0.185	**0.035**	0.258	**0.003**	–0.097	0.271	–0.217	**0.013**	–0.046	0.601
	D-dimer	0.031	0.723	0.007	0.936	–0.037	0.672	–0.129	0.142	–0.258	**0.003**
	PLT	0.090	0.305	0.119	0.176	–0.054	0.541	–0.024	0.786	0.030	0.736
	MPV	0.041	0.646	–0.181	**0.039**	0.033	0.708	0.012	0.888	0.021	0.808

β-CTX – β-cross-linked C-terminal telopeptide of type I, 25 (OH)D – 25-hydroxyvitamin D, PINP – procollagen type I N propeptide, PT – prothrombin time, APTT – activated partial thromboplastin time, FIB – fibrinogen, INR – international normalized ratio, PLT – platelets, MPV – mean platelet volume, **boldface** *indicates p-value < 0.05.*

Supplementary Table SIV. Correlation of coagulation biomarkers with bone mineral density among three groups

Variable		Lumbar spine		Femoral neck		Ward's triangle		Total hip	
		r	*P*-value	*r*	*P*-value	*r*	*P*-value	*r*	*P*-value
Normal (*N* = 46)	PT	–0.090	0.551	0.169	0.261	0.085	0.572	0.166	0.269
	APTT	0.100	0.511	0.163	0.279	0.011	0.944	–0.030	0.843
	FIB	0.009	0.955	0.105	0.486	–0.025	0.871	0.037	0.809
	INR	–0.117	0.440	0.209	0.164	0.082	0.588	0.123	0.414
	D-dimer	–0.135	0.369	–0.090	0.551	–0.139	0.355	0.053	0.726
	PLT	–0.137	0.362	0.125	0.408	–0.010	0.945	0.159	0.290
	MPV	0.018	0.906	0.083	0.582	0.050	0.742	–0.018	0.906
Osteopenia (*N* = 129)	PT	0.055	0.539	–0.107	0.230	–0.070	0.428	–0.075	0.401
	APTT	–0.047	0.593	0.100	0.260	0.113	0.203	–0.019	0.832
	FIB	0.006	0.943	–0.031	0.729	–0.050	0.571	–0.086	0.334
	INR	0.046	0.607	–0.109	0.218	–0.061	0.492	–0.090	0.311
	D-dimer	0.101	0.253	–0.057	0.521	–0.145	0.102	–0.026	0.769
	PLT	–0.079	0.373	0.006	0.947	0.029	0.744	–0.016	0.854
	MPV	–0.036	0.688	–0.032	0.721	0.076	0.392	–0.121	0.171
Osteoporosis (*N* = 131)	PT	0.011	0.901	0.009	0.917	–0.045	0.609	–0.088	0.318
	APTT	–0.012	0.891	0.115	0.190	0.127	0.148	–0.018	0.839
	FIB	–0.079	0.369	–0.147	0.093	–0.146	0.095	–0.143	0.104
	INR	0.010	0.910	0.008	0.927	–0.039	0.660	–0.086	0.328
	D-dimer	–0.052	0.553	–0.288	**0.001**	–0.289	0.102	–0.207	**0.018**
	PLT	–0.014	0.876	–0.014	0.874	0.015	0.863	0.000	0.996
	MPV	–0.035	0.693	0.064	0.466	0.038	0.666	0.036	0.681

PT – prothrombin time, APTT – activated partial thromboplastin time, FIB – fibrinogen, INR – international normalized ratio, PLT – platelets, MPV – mean platelet volume. **Boldface** *indicates p-value < 0.05.*

Supplementary Table SV. Canonical correlation analysis of the three sets of variables

Variables	Canonical correlation pair	Canonical correlation coefficient	*F*	*P*-value
X1 and Y	1	0.328	1.694	**0.007**
	2	0.220	1.030	0.423
	3	0.143	0.653	0.831
	4	0.094	0.459	0.885
	5	0.058	0.333	0.802
X2 and Y	1	0.370	2.917	**< 0.001**
	2	0.325	2.351	**< 0.001**
	3	0.238	1.491	0.102
	4	0.095	0.596	0.782
	5	0.084	0.699	0.553
X3 and Y	1	0.268	1.496	**0.048**
	2	0.227	1.071	0.378
	3	0.082	0.344	0.969
	4	0.069	0.357	0.839

X1 indicates patients' basic characteristics (age, body mass index, sex, stage of bone mass, and hypertension). X2 indicates the bone turnover markers (β-cross-linked C-terminal telopeptide of type I, 25-hydroxyvitamin D, procollagen type I N propeptide, osteocalcin, and calcium). X3 indicates bone mineral density in various anatomical regions (lumbar spine 1-4, femoral neck, ward's triangle, and total hip). The dependent variable Y indicates coagulation biomarkers (prothrombin time, activated partial thromboplastin time, fibrinogen, international normalized ratio, platelets, and mean platelet volume). **Boldface** *indicates p-value < 0.05.*

Supplementary Table SVI. Logistic regression analysis between international normalized ratio and characteristics, bone turnover markers, and bone mineral density

Characteristics	Univariate analysis	
	OR (95% CI)	*P*-value
Age	1.007 (0.917–1.105)	0.888
Stage of bone mass:		
Normal	Reference	
Osteopenia	0.948 (0.096–9.349)	0.964
Osteoporosis	0.333 (0.034–3.247)	0.344
25-(OH)D	0.981 (0.941–1.022)	0.360
Calcium	0.153 (0.008–2.779)	0.205
Lumbar spine	0.095 (0.001–13.830)	0.354
Femoral neck	0.046 (0.000–34.859)	0.362
Ward's triangle	0.098 (0.000–58.691)	0.476
Total hip	0.142 (0.000–52.432)	0.518

25-(OH)D – 25-hydroxyvitamin D, OR – odds ratio, CI – confidence interval.

Supplementary Table SVII. Logistic regression analysis between fibrinogen and characteristics, bone turnover markers, and bone mineral density

Characteristics	Univariate analysis	
	OR (95% CI)	*P*-value
Age	1.036 (1.004–1.069)	**0.027**
Stage of bone mass:		
Normal	Reference	
Osteopenia	0.552 (0.212–1.433)	0.222
Osteoporosis	0.558 (0.289–1.080)	0.344
25-(OH)D	1.008 (0.997–1.020)	0.170
Lumbar spine	0.480 (0.102–2.257)	0.480
Femoral neck	0.163 (0.018–1.522)	0.112
Ward's triangle	0.203 (0.024–1.746)	0.146
Total hip	0.199 (0.026–1.523)	0.120

25-(OH)D – 25-hydroxyvitamin D, OR – odds ratio, CI – confidence interval; **boldface** *indicates p-value < 0.05.*

Supplementary Table SVIII. Logistic regression analysis between platelets and characteristics, bone turnover markers, and bone mineral density

Characteristics	Univariate analysis	
	OR (95% CI)	*P*-value
Age	1.021 (0.983–1.060)	0.277
Stage of bone mass:		
Normal	Reference	
Osteopenia	0.677 (0.238–1.921)	0.463
Osteoporosis	0.367 (0.155–0.867)	0.022
25-(OH)D	0.992 (0.977–1.007)	0.301
Calcium	1.052 (0.053–20.962)	0.974
Lumbar spine	0.406 (0.062–2.666)	0.348
Femoral neck	0.943 (0.070–12.647)	0.964
Ward's triangle	0.491 (0.039–6.223)	0.583
Total hip	0.356 (0.032–4.023)	0.404

25-(OH)D – 25-hydroxyvitamin D, OR – odds ratio, CI – confidence interval, **boldface** *indicates p-value < 0.05.*