Supplementary material

Table S1. Clinical features of subjects with dilated cardiomyopathy.

Category	Variable
Comorbidity and other risk factor n(%)	- Smoking in the past: 4(10) - Alcohol consumption: 11(27) - Clay consumption:16(39)
Symptoms	- Inactivity: 32 (78) - Fatigue: 38(93) - Breathlessness: 34(83) - Dyspnea: 36 (88) - Cough: 34(83) - Orthopnea: 34 (83) - Nocturnal dyspnea: 19 (46) - Nycturia: 14 (34) - Right hypochondre pain:5(12) - Early satiety:35(85)
Vital signs	- PAS: 115±20 mmHg - PAD: 83±16 mmHg - Pulse: 98±13 /min - SpO2: 96±5 %
Signs	- NYHA: II 12(29), III 23 (56), IV 6 (15) - Jugular distension:13(32) - Arrhythmia: 12(29) - Murmur of MR: 30(73) - Murmur of TR: 13(32) - Tachypnea: 13(32) - Pulmonary rales: 20(49) - Hepatomegaly: 26(63) - Ascites 4(10) - Sacral edema: 27(66) - Legs swelling: 29(71) - Coldness of extremities: 1(2)
Heart failure etiology n(%)	- Dilated cardiomyopathy 33(80) - Peripartum cardiomyopathy 8 (20) - Thrombus 10(24)
Echocardiographic findings & measurements	- LVEF: 21±8 % -LVIDD:6.4±0.6 cm - LVEDV: 229±66 ml - LVESV: 181 ± 55 ml - LA volume index: 86±27 ml/m²
12-lead ECG n(%)	- Mitral E/Ea average: 15±6 - TR Vmax 2.9±0.4 m/s - LVH: 32 (78) - LBBB: 3(7) - Atrial fibrillation: 4(10) - PAC:5 (12) - PVC: 13 (32)
24h holter ECG	**- QTc : 587±125 ms** **- long QT 17(52)** **- Premature ventricular contractions** Number: 202±297/h; 4852±7132/24h

	Connections : doublets 31(79)
	Triplets 21(54)
	Bigeminy 18(46)
	Trigeminy 14(36)
	Morphology: monomorphic 10(26)
	Polymorphic 28(72)
	Coupling: short 3(8)
	Long 24(61)
	Variable 12(31)
	-Ventricular tachycardia
	Non-sustained VT 20(51), 7±10 episodes/24h
Treatment	- Furosemide 39 (95) - Beta-blocker 8 (20) - ACE-i 35 (85) - ARB 4(10) - Spironolactone 9 (22) - Isosorbide dinitrate 4(10) - LMWH 2(5) - Acenocoumarol 7 (17)
Outcome	- Inpatient 32 (78) - Mean (SD) length of hospitalization 14±8 days - Early mortality 4(10)

Table S2. Comparison of heart failure patients to controls according to demography, education level, and routine biology.

variables	Control (n=29)	HF patients (n=41)	p
Age, years	43±11	48±14	0.1121
Sex, n(%)			
Female	14(48)	20(49)	0.9668
Male	15(52)	21(51)	
Education's level			
Primary-to-secondary	12(41)	30(73)	**0.0075**
University and post-univ	17(59)	11(27)	
BMI, kg/m²	26.6±2.5	25.2±4.9	0.1414
Glycemia, mg/dl	88±18	108±37	**0.0042**
Total cholesterol, mg/dl	183±37	188±67	0.6965
HDL, mg/dl	46±9	40±19	*0.0723*
LDL, mg/dl	118±37	128±52	0.3708
Triglycerides, mg/dl	95±55	102±37	0.5387
Urea, mg/dl	26±7	53±30	**<0.0001**
Creatinine, mg/dl	0.9±0.2	1.2±0.4	**0.0005**
GFR, ml/min/1.73m²	85±18	66±21	**<0.0001**
Renal dysfunction, n(%)	2(7)	17(41)	**0.0014**
Uric acid, mg/dl	6.1±1.6	10.7±3.7	**<0.0001**
Total bilirubin, mg/dl	0.7±0.4	1.6±2.4	**0.0259**
Direct bilirubin, mg/dl	0.2±0.1	0.9±2.2	**0.0434**
AST, U/l	27±6	101±311	0.1351
ALT, U/l	29±13	84±148	**0.0225**
Calcium, mg/dl	8.7±0.3	8.4±0.6	**0.008**
Hypocalcemia, n(%)	3(10)	21(51)	**0.0004**
Magnesium, mg/dl	2.04±0.2	2.03±0.4	0.9167
Hypomagnesemia, n(%)	0(0)	6(15)	**0.0343**
Sodium, mEq/l	140.5±1.8	138.2±4.4	**0.0037**
Hyponatremia, n(%)	0(0)	10 (24)	**0.0039**
Potassium, mEq/l	4.2±0.4	3.7±0.7	**0.0018**
Hypokalemia, n(%)	1(3)	14(34)	**0.0024**
Chlorure, mEq/l	103.4±2.3	102.6±5.4	0.4198
C-reactive protein, mg/l	7±17	45±44	**<0.0001**
CRP, n(%)	2(7)	32(78)	**<0.0001**
White blood cell, x10³/µl	4.1±0.8	6.9±3.2	**<0.0001**
Lymphocytes, x10³/µl	1.9±0.5	1.8±1.1	0.3717
Monocytes, x10³/µl	0.4±0.1	0.7±0.3	**<0.0001**
Granulocytes, x10³/µl	1.8±0.5	4.5±2.9	**<0.0001**
Red blood cell, x10⁶/µl	5±0.7	5.2±0.6	0.3253
Hemoglobin, g/dl	14.2±2.3	13.6±1.4	0.1842
Hematocrit, %	40.7±6.7	38.5±5.7	0.1353
MCV, fL	81±9	76±7	**0.0080**
MCH, pg	28±4	27±3	**0.0188**
MCHC, g/dl	35±0.8	34±2	**0.0341**
RDW, %	13±3	16±3	**0.0001**
Platelets, x10³/µl	210±63	226±78	0.3490
MPV, fL	9.4±0.7	9.4±0.8	0.9530
PCT, %	0.19±0.06	0.21±0.07	0.2392
PDW, %	13.7±2.3	14.2±2.4	0.3718
INR	1.1±0.2	1.4±1.0	*0.0920*
Urinary Tract Infection	4(14)	12(29)	0.1064

Table S3. Correlations between blood (b) and urine (u) metal concentrations.

	bAntimony	**bArsenic**	**bCopper**	**bVanadium**	**bZinc**
uChromium	-0.22701	**0.40382**	**0.36284**	0.09298	-0.06249
	0.1056	**0.0030**	**0.0082**	0.5121	0.6598
uCopper	**-0.63067**	**0.42944**	**0.73235**	-0.28714	-0.41424
	<.0001	**0.0015**	**<.0001**	**0.0390**	**0.0023**
uZinc	**-0.55511**	**0.37591**	**0.59046**	-0.34853	**-0.35405**
	<.0001	**0.0060**	**<.0001**	**0.0113**	**0.0100**
uSelenium	-0.35934	**0.29941**	**0.46581**	0.00273	-0.08427
	0.0089	**0.0311**	**0.0005**	0.9847	0.5526
uCadmium	**-0.50295**	**0.40502**	**0.70435**	-0.17888	-0.31785
	0.0001	**0.0029**	**<.0001**	0.2045	**0.0217**
uAntimony	-0.39179	**0.43208**	**0.34748**	-0.30900	-0.29591
	0.0041	**0.0014**	**0.0116**	**0.0258**	**0.0332**
uThallium	-0.35644	0.18458	**0.42227**	-0.14857	-0.31281
	0.0095	0.1902	**0.0018**	0.2932	**0.0240**
uUranium	-0.29625	**0.37514**	**0.52591**	-0.10084	-0.35764
	0.0330	**0.0061**	**<.0001**	0.4769	**0.0092**

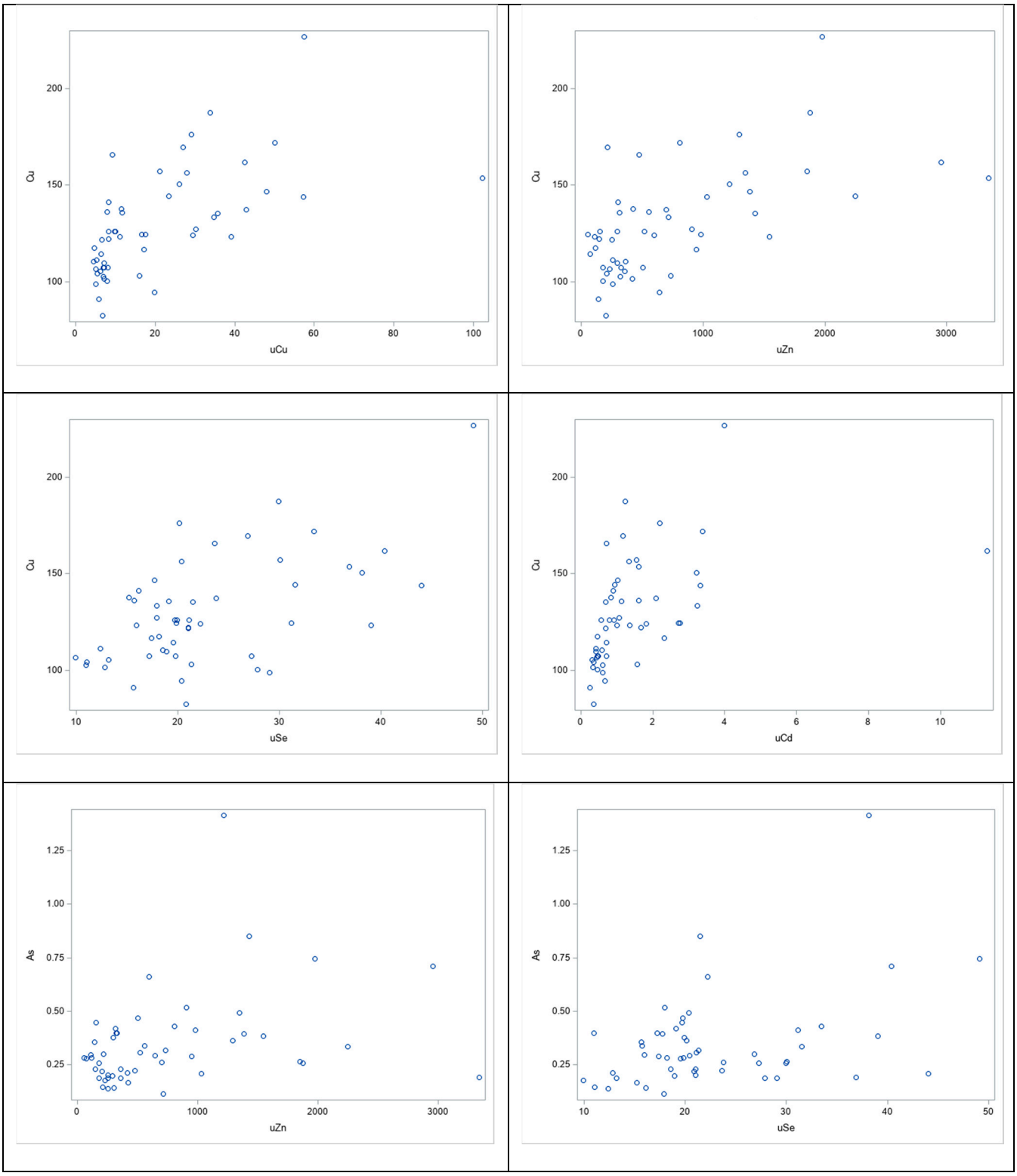

Figure S1. Illustrative correlations between concentrations of copper or arsenic in the blood and concentrations of zinc, selenium, cadmium, and copper in the urine.