Table S1. Clinical characteristics of all subjects receiving antibiotics

	HAD (n=12)	HAC (n=11)	P-value	HA* (n=18)	HAP (n=5)	P-value	HAD* (n=8)	HADP (n=3)	P-value
Age	87.9± 6.67	86.4± 4.8	0.546	85.11± 6.24	87.80± 4.60	0.382	85.75± 5.60	87.33± 1.15	0.65
Number of medications	8.67± 5.52	10.18± 4.24	0.473	9.5±5.01	12.4± 5.13	0.267	10.0±4.07	12.67± 4.04	0.358
PPI exposure (n/%)	6(50)	8(72)	0.265	10(56)	4(80)	0.322	6(75)	2(67)	0.782
GNRI≥98 (n/%)	5(42)	2(18)	0.221	4(22)	2(40)	0.423	2(25)	0(0)	0.338
aCCI (med/range)	5/(4-7)	7/(5-8)	0.0245	6/(4-8)	6(6-8)	0.275	7/(5-8)	6/(6-8)	0.999
≤4(n/%)	2(17)	0(0)		2(11)	0(0)		0(0)	0(0)	
5-6(n/%)	7(58)	5(45)		9(50)	3(60)		3(38)	2(67)	
≥7(n/%)	3(25)	6(55)		7(39)	2(40)		5(62)	1(33)	
Long-term hospitalization(n/%)	3(25)	5(45)	0.304	6(34)	3(60)	0.28	3(38)	2(67)	0.387
probiotics exposure(n/%)	2(17)	3(27)	0.538						

Group HAD (presence of antibiotic-associated diarrhea with antibiotic exposure, n=12), Group HAC (absence of antibiotic-associated diarrhea with antibiotic exposure, n=11), Group HA* (exposure to antibiotics without probiotics, n=18), Group HAP (exposure to both antibiotics and probiotics, n=5), Group HAD* (presence of antibiotic-associated diarrhea without prophylactic use of probiotics, n=8), Group HADP (presence of antibiotic-associated diarrhea with prophylactic use of probiotics, n=3). a: There was a significant difference in aCCI between Group HAD and Group HAC ($P<0.05$). b: Each patient had used one of the following probiotic drugs for more than 2 weeks before receiving antibiotic treatment. A combination of probiotics (SPH SINE, China): Bifidobacterium longum 6-1, Lactobacillus acidophilus YIT2004, and Enterococcus faecalis YIT0072 at equal numbers and at a total daily dose of 6× 107 colony-forming units (CFU). Another probiotic is Clostridium butyricum MIYAIRI588 (MIYARISAN, Japan) at a daily dose of 2.1□106 colony-forming units (CFU).

Figure S1. Antibiotic usage history of each individual in the HA group. Each alphanumeric combination represents an individual patient.

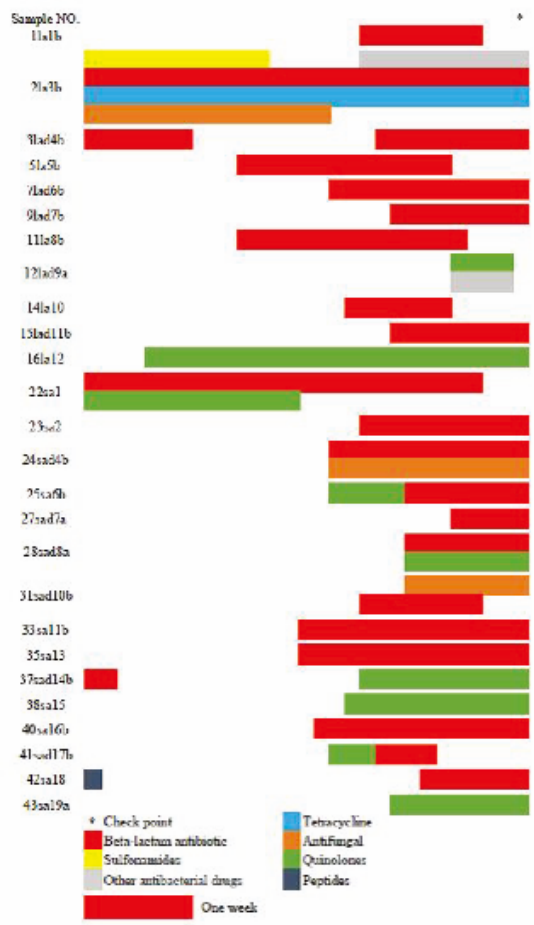

Figure S2. Taxonomic abundance of each individual in the HA group.

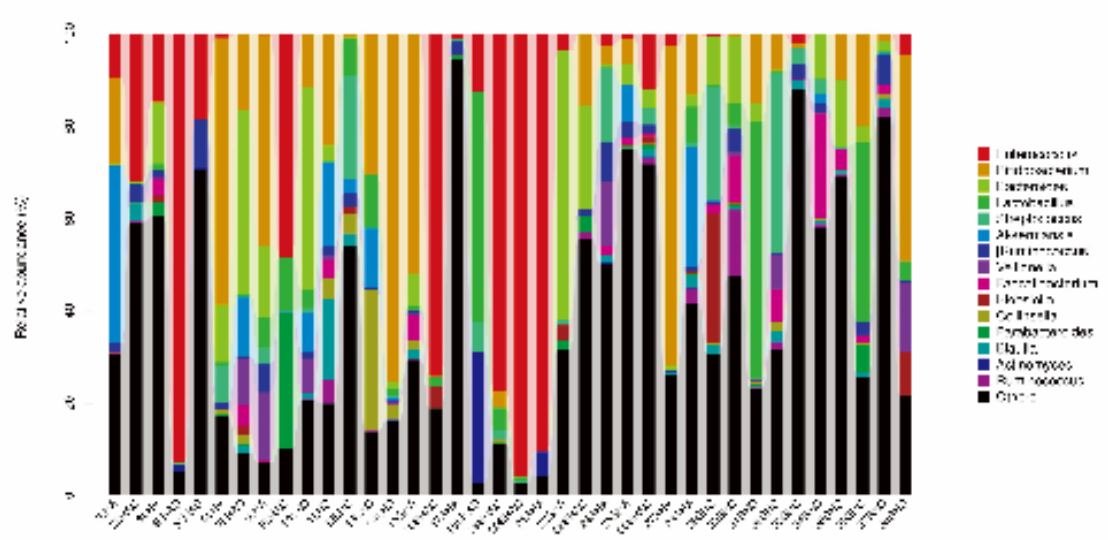

Figure S3. Unweighted PCoA analysis of HC and HA groups