

Supplemental Materials

Supplementary 1 Text: The details list of participation Hospitals and the region they represented in China.

Region of China	Hospital
Southwest	Second Affiliated Hospital of Chongqing Medical University
	First Affiliated Hospital of Army Medical University
	First Affiliated Hospital of Chongqing Medical University
	Guizhou Provincial People's Hospital
	West China Hospital of Sichuan University
	First Affiliated Hospital of Zunyi Medical University
Northwest	First Hospital of Xinjiang Medical University
	Lanzhou General Hospital of People's Liberation Army
	Tangdu Hospital, Fourth Military Medical University
Northeast	First Affiliated Hospital of Harbin Medical University
	First Affiliated Hospital of Dalian Medical University
North	Peking University Jishuitan Hospital
	Tianjin Medical University General Hospital
	Third Hospital of Hebei Medical University
Easten	Shanghai Jiao Tong University Affiliated Sixth People's Hospital
	Nanjing Drum Tower Hospital of Nanjing University Medical School
	First Affiliated Hospital of Nanjing Medical University
	Zhejiang Provincial People's Hospital of Hangzhou Medical College
Central	Second Xiangya Hospital, Central South University
	Wuhan General Hospital of People's Liberation Army
South	Nanfang Hospital of Southern Medical University

Supplementary 2 Text: Inclusion and exclusion criteria

Inclusion criteria

- A. Post-traumatic osteomyelitis was definitely diagnosed by surgeons
- B. All ages
- C. Traumatic fractures of limbs (humerus, ulnar and radius, clavicle, femur, tibia and fibula, patella, calcaneus, talus)
- D. Complete clinical data records;
- E. Complete sampling and surgical procedure records
- F. Complete imagological, surgical or histopathological data
- G. Bacterial culture and drug sensitivity test to confirm infection;
- H. Approved by Ethics Review Committee

Exclusion criteria

- A. Post-traumatic osteomyelitis could not be diagnosed definitely
- B. There is clear clinical evidence of infection, but without positive result of laboratory bacterial culture
- C. Without the results of drug sensitivity
- D. Don't approved by Ethics Review Committee

Supplemental Table 1. Testing Bacteria Library List.

Gram Positive bacteria	Gram Negative bacteria	
MSSA	<i>Pseudomonas aeruginosa</i>	<i>Haemophilus haemolyticus</i>
MRSA	<i>Enterobacter cloacae</i>	<i>Enterobacter asburiae</i>
<i>Enterococcus faecalis</i>	<i>Escherichia coli</i>	<i>Aeromonas salmonicida</i>
<i>Staphylococcus epidermidis</i>	<i>Acinetobacter baumannii</i>	<i>Burkholderia cepacia</i>
<i>S. haemolyticus</i>	<i>Klebsiella pneumoniae</i>	<i>Leclercia adecarboxylata</i>
<i>Enterococcus faecium</i>	<i>Serratia marcescens</i>	<i>Enterobacterium intermediates</i>
Gram-positive bacillus	<i>Proteus mirabilis</i>	<i>Serratia odorifera</i>
<i>Staphylococcus simulans</i>	<i>proteusbacillus vulgaris</i>	<i>Enterobacter amnigenus type 2</i>
<i>Enterococcus avium</i>	<i>Stenotrophomonas maltophilia</i>	<i>Achromobacter denitrificans</i>
coagulase negative staphylococcus	<i>Aeromonas hydrophila</i>	<i>Achromobacter sp</i>
<i>Streptococcus haemolyticus</i>	<i>Klebsiella oxytoca</i>	<i>Cedecea lapagei</i>
<i>S. capitis</i>	<i>Enterobacter aerogenes</i>	<i>Myroides odoratimimus</i>
<i>S. lugdunensis</i>	<i>Aeromonas sobria</i>	<i>Cupriavidus</i>
<i>Streptococcus pyogenes</i>	<i>Acinetobacter baumannii-Acinetobacter calcoaceticus complex</i>	<i>Providencia stuartii</i>
<i>Staphylococcus warneri</i>	<i>pseudomonas putida</i>	<i>Vibrio fluvialis</i>
<i>Enterococcus Gallinarum</i>	<i>Proteus vulgaris</i>	<i>Hafnia alvei</i>
<i>Enterococcus casseliflavus</i>	<i>Citrobacter freundii</i>	carbapenem-resistant <i>Acinetobacter baumannii</i>
<i>Streptococcus agalactiae</i>	<i>Morganella morganii</i>	<i>Doblin salmonella</i>
<i>Staphylococcus cohnii</i>	<i>Enterobacter carcinoma</i>	<i>Moraxella osloensis</i>
<i>Micrococcus luteus</i>	<i>Acinetobacter lwoffii</i>	<i>Enterobacter hormaechei</i>
<i>Streptococcus mitis</i>	Fluorescence/foul-smelling <i>pseudomonas</i>	<i>Cedecea davisae</i>
<i>Bacillus cereus</i>	<i>Flavobacterium indologenes</i>	<i>Aeromonas caviae</i>
<i>Streptococcus pneumoniae</i>	<i>Acinetobacter junii</i>	<i>Flavobacterium odoratum</i>
<i>S. saprophyticus</i>	<i>Serratia marcescens subspecies</i>	<i>Raoultella planticola</i>
<i>Streptococcus anginosus</i>	<i>Klebsiella pneumoniae subspecies</i>	<i>Serratia fonticola</i>
<i>staphylococcus xylosus</i>	<i>Xylose oxidizes noncolorific bacillus</i>	<i>Acinetobacter calcoaceticus</i>
<i>S. hominis</i>	<i>Citrobacter braakii</i>	<i>Ochrobactrum anthropi</i>
<i>Staphylococcus lugdunensis</i>	<i>Acinetobacter haemolyticus</i>	<i>Serratia plymuthica</i>
<i>Enterococcus casseliflavus/gslinarum</i>	<i>Baumann/calcium acetate acinetobacter complex</i>	<i>Alcaligenes xylosoxidans subsp xylosoxidans</i>
<i>Kocuria kristinae</i>	<i>Pseudomonas stutzeri</i>	<u><i>Alcaligenes xylosoxidans</i></u>
<i>Streptococcus dysgalactiae</i>	<i>Morganella morganii</i>	Total=96
Group d streptococcus	<i>Prpteus penneri</i>	
<i>Streptococcus constellatus</i>	<i>Enterobacter agglomerans</i>	
<i>S. auricularis</i>	<i>Lycidine klebsiella</i>	
<i>Staphylococcus chromogenes</i>	<i>Proteus penneri</i>	
<i>Enterococcus hirae</i>	<i>Alcaligenes faecalis</i>	
<i>Streptococcus epiphyllis</i>	<i>Pasteurella multocida</i>	
<i>Staphylococcus schleiferi</i>	<i>Citrobacter farmeri</i>	
<i>Enterococcus durans</i>	<i>Klebsiella plantica</i>	
<i>Staphylococcus squirrel</i>	<i>Baumann/acinetobacter haemolyticus</i>	
<i>S. cystobacteria</i>	<i>Sphingomonas paucimobilis</i>	
<i>Staphylococcus kloosii</i>	<i>Serratia rubidaea</i>	
<i>Staphylococcus intermedius/Staphylococcus</i>	<i>Serratia liquefaciens</i>	
<i>Granulicatella para-adiacens</i>	<i>Flavobacterium breve</i>	
<i>Dermacoccus nishinomiyaensis</i>	<i>Providencia rettgeri</i>	
<i>Aerococcus viridans</i>	<i>Providencia stuartii</i>	
<i>Enterococcus raffinosus</i>	<i>Brac citrobacter</i>	
<i>Erysipelothrix rhusiopathiae</i>	<i>Achromobacter xylosoxidans</i>	
<i>Staphylococcus hominis</i>	<i>Non-decarboxylleucella</i>	
<i>Staphylococcus arlettae</i>	<i>Pseudomonas</i>	
<i>Streptococcus tolhutte</i>	<i>Cozer's bacillus citrate</i>	
<i>Corynebacterium striatum</i>	<i>Malonate negative citrate bacillus</i>	
<i>Streptococcus</i>	<i>sagenopsis</i>	
<i>Staphylococcus hyicus</i>	<i>Pseudomonas alcaligenes</i>	
<i>Streptococcus acidominimus</i>	<i>Ralstonia pickettii</i>	
<i>Staphylococcus lentus</i>	<i>Aeromonas</i>	
<i>Enterococcus casseliflavus</i>	<i>Alcaligenes faecalis ssp faecalis</i>	
<i>Bacillus subtilis</i>	<i>Paratyphoid C</i>	
<i>Streptococcus milleri</i>	<i>Myroides</i>	
<i>Micrococcus antarcticus/Micrococcus lute</i>	<i>Citrobacter koseri</i>	
<i>Rhodococcus equi</i>	<i>Haemophilus parainfluenzae</i>	
<i>Staphylococcus caprae</i>	<i>Myroides odoratus</i>	
<i>Bacillus thuringiensis</i>	<i>Gram-negative bacilli</i>	
<i>Corynebacterium jack</i>	<i>Pseudomonas shi (stutzer)</i>	
<u><i>Enterococcus</i></u>	<i>Cronobacter sakazakii</i>	
Total=65		

Supplemental Table 3. Univariate analysis of logistic regression was conducted to identify relative risk factors for patients who had monomicrobial positive (MP) or monomicrobial negative (MN) infection.

		MP	MN	Odds Ratio (%95 CI)	P vaule
		N=1427	N=1485		
1-Ethnicity					
The Han ethnicity		1315 (92.15)	1393 (93.8)	Reference	
The Hui ethnicity		24 (1.68)	13 (0.88)	0.511 (0.259 to 1.008)	0.0529
Tujia		17 (1.19)	59 (3.97)	1.111 (0.579 to 2.129)	0.7521
Other minorities		71 (4.98)	20 (1.35)	0.784 (0.551 to 1.117)	0.1782
2-Gender					
Male		1155 (80.94)	1158 (77.98)	Reference	
Female		272 (19.06)	327 (22.02)	1.199 (1.001 to 1.436)	0.0484
3-Injury factors					
Traffic accident		435 (30.48)	605 (40.79)	Reference	
Fall		310 (21.72)	310 (21.72)	0.475 (0.383 to 0.59)	<0.0001
High falling injury		159 (11.14)	21 (9.76)	0.656 (0.507 to 0.847)	0.0013
Hard object crashing		88 (6.17)	133 (8.96)	1.087 (0.808 to 1.461)	0.5822
Crush injury		44 (3.08)	50 (3.37)	0.817 (0.535 to 1.248)	0.3497
Destructive injury		25 (1.75)	51 (3.43)	1.467 (0.895 to 2.404)	0.1287
Mangled injury		27 (1.89)	44 (2.96)	1.172 (0.714 to 1.922)	0.5301
Cutting injury		12 (0.28)	24 (1.62)	1.438 (0.711 to 2.907)	0.3117
High-explosive injury		9 (0.63)	10 (0.67)	0.799 (0.322 to 1.983)	0.6283
Pathological fracture		5 (0.35)	8 (0.54)	1.15 (0.374 to 3.54)	0.8070
Osocomial damage		1 (0.07)	0 (0)	0.185 (0.001 to 23.869)	0.4962
Ambiguous trauma		312 (21.86)	210 (14.14)	0.484 (0.391 to 0.599)	<0.0001
4-Age					
≤ 20 yr		143 (10.02)	128 (8.62)	Reference	
21-30 yr		210 (14.72)	223 (15.02)	1.186 (0.875 to 1.608)	0.2707
31-40 yr		250 (17.52)	275 (18.52)	1.229 (0.916 to 1.648)	0.1691
41-50 yr		386 (27.05)	405 (27.27)	1.172 (0.889 to 1.545)	0.2599
51-60 yr		262 (18.36)	248 (16.7)	1.057 (0.787 to 1.42)	0.7107
≥ 61 yr		176 (12.33)	206 (13.87)	1.307 (0.957 to 1.786)	0.0924
5-Source of patients					
Primary admitted w/o surgery		238 (16.68)	294 (19.8)	Reference	
Transferred w/o postoperative		408 (28.59)	633 (42.63)	1.256 (1.017 to 1.552)	0.0346
Transferred postoperative		586 (41.07)	420 (28.28)	0.58 (0.469 to 0.717)	<0.0001
Return to follow-up postoperative		195 (13.67)	138 (9.29)	0.573 (0.434 to 0.756)	<0.0001
6-Injury types					
Closed		422 (29.57)	280 (18.86)	Reference	
Opened		795 (55.71)	1073 (72.46)	2.04 (1.709 to 2.434)	<0.0001
Ambiguous		210 (14.72)	129 (8.69)	0.926 (0.709 to 1.208)	0.5705
7-Complications/Comorbidities					
Anemia	NA	1357 (95.09)	1384 (93.2)	Reference	
	YES	70 (4.91)	101 (6.8)	1.415 (1.034 to 1.936)	0.0303
Diabetes	NA	1358 (95.16)	1405 (94.61)	Reference	
	YES	69 (4.84)	80 (5.39)	1.12 (0.805 to 1.559)	0.5003
Hypertension	NA	1360 (95.3)	1411 (95.02)	Reference	
	YES	67 (4.7)	74 (4.98)	1.065 (0.759 to 1.494)	0.7177
Hypoproteinemia	NA	1365 (95.66)	1404 (94.55)	Reference	
	YES	62 (4.34)	81 (5.45)	1.27 (0.905 to 1.783)	0.1668
Multiple fracture	NA	1231 (86.26)	1156 (77.85)	Reference	
	YES	196 (13.74)	329 (22.15)	1.787 (1.472 to 2.171)	<0.0001
Nerve injury	NA	1355 (94.95)	1373 (92.46)	Reference	
	YES	72 (5.05)	112 (7.54)	1.535 (1.131 to 2.084)	0.0059
Shock	NA	1386 (97.13)	1370 (92.26)	Reference	
	YES	41 (2.87)	115 (7.74)	2.838 (1.971 to 4.082)	<0.0001
Skin abrasions	NA	1368 (95.87)	1362 (91.72)	Reference	
	YES	59 (4.13)	123 (8.28)	2.094 (1.521 to 2.881)	<0.0001
Vascular injury	NA	1325 (92.85)	1313 (88.42)	Reference	
	YES	102 (7.15)	172 (11.58)	1.702 (1.317 to 2.199)	<0.0001
Others	NA	1328 (93.06)	1394 (93.87)	Reference	
	YES	99 (6.94)	91 (6.13)	0.876 (0.652 to 1.175)	0.3768
None	NA	541 (37.91)	770 (51.85)	Reference	
	YES	886 (62.09)	715 (48.15)	0.567 (0.489 to 0.657)	<0.0001

Supplemental Table 4. Multivariate analysis of logistic regression was performed to identify the relative risk factors for patients with monomicrobial positive (MP) or monomicrobial negative (MN) infections.

	Odds Ratio (%95 CI)	P vaule
Ethnicity		
The Han ethnicity	Reference	
The Hui ethnicity	0.453 (0.225 to 0.913)	0.0269
Tujia	1.445 (0.736 to 2.838)	0.2847
Other minorities	0.915 (0.63 to 1.328)	0.6403
Gender		
Male	Reference	
Female	1.255 (1.037 to 1.517)	0.0195
Injury factors		
Traffic accident	Reference	
Fall	0.676 (0.536 to 0.852)	0.0009
High falling injury	1.177 (0.868 to 1.597)	0.2938
Hard object crashing	0.79 (0.605 to 1.032)	0.0834
Crush injury	0.719 (0.466 to 1.109)	0.1358
Destructive injury	1.106 (0.665 to 1.839)	0.6973
Mangled injury	1.126 (0.678 to 1.87)	0.6462
Cutting injury	1.343 (0.653 to 2.761)	0.4226
High-explosive injury	0.673 (0.267 to 1.694)	0.4007
Pathological fracture	1.532 (0.484 to 4.854)	0.4684
Ambiguous trauma	0.645 (0.513 to 0.81)	0.0002
Source of patients		
Primary admitted w/o surgery	Reference	
Transferred w/o postoperative	1.183 (0.949 to 1.475)	0.1351
Transferred postoperative	0.654 (0.52 to 0.823)	0.0003
Return to follow-up postoperative	0.683 (0.511 to 0.913)	0.0102
Injury types		
Closed	Reference	
Opened	1.783 (1.47 to 2.162)	<0.0001
Ambiguous	1.298 (0.972 to 1.732)	0.0766
Complications/Comorbidities		
Shock	NA	
YES	1.526 (1.036 to 2.246)	0.0322
None	NA	
YES	0.748 (0.636 to 0.881)	0.0005

MP (N=1427) MN (N=1485)

Supplemental Table 5. Univariate analysis of logistic regression was conducted to identify relative risk factors for patients with polymicrobial positive (PP) or polymicrobial negative (PN) infections.

	PP N=46	PN N=266	Odds Ratio (%95 CI)	P value
1-Ethnicity				
The Han ethnicity	42 (91.3)	251 (94.36)	Reference	
The Hui ethnicity	0 (0)	3 (1.13)	0.643 (0.096 to +∞)	1
Tujia	3 (6.52)	2 (0.75)	0.112 (0.018 to 0.688)	0.0181
Other minorities	1 (2.17)	10 (3.76)	1.673 (0.209 to 13.413)	0.6278
2-Gender				
Male	40 (86.96)	208 (78.2)	Reference	
Female	6 (13.04)	58 (21.8)	1.859 (0.751 to 4.6)	0.1799
3-Injury factors				
Traffic accident	16 (34.78)	119 (44.74)	Reference	
Fall	9 (19.57)	23 (8.65)	0.322 (0.126 to 0.824)	0.0181
High falling injury	5 (10.87)	32 (12.03)	0.807 (0.273 to 2.387)	0.6980
Hard object crashing	3 (6.52)	21 (7.89)	0.957 (0.256 to 3.575)	0.9482
Crush injury	0 (0)	8 (3.01)	2.388 (0.111 to 51.385)	0.5784
Destructive injury	1 (2.17)	11 (4.14)	1.387 (0.167 to 11.51)	0.9374
Mangled injury	0 (0)	11 (4.14)	3.23 (0.16 to 65.024)	0.4440
Cutting injury	0 (0)	4 (1.5)	1.264 (0.046 to 34.521)	0.8896
High-explosive injury	0 (0)	3 (1.13)	0.983 (0.031 to 31.294)	0.9923
Ambiguous trauma	12 (26.09)	34 (12.78)	0.387 (0.167 to 0.898)	0.0270
4-Age				
≤ 20 yr	4 (8.7)	33 (12.41)	Reference	
21-30 yr	10 (21.74)	40 (15.04)	0.485 (0.139 to 1.689)	0.2555
31-40 yr	6 (13.04)	33 (12.41)	0.667 (0.172 to 2.582)	0.5573
41-50 yr	13 (28.26)	89 (33.46)	0.83 (0.253 to 2.727)	0.7586
51-60 yr	9 (19.57)	40 (15.04)	0.539 (0.152 to 1.908)	0.3378
≥ 61 yr	4 (8.7)	31 (11.65)	0.939 (0.216 to 4.086)	0.9336
5-Source of patients				
Primary admitted w/o surgery	5 (10.87)	32 (12.03)	Reference	
Transferred w/o postoperative	8 (17.39)	130 (48.87)	2.539 (0.778 to 8.283)	0.1225
Transferred postoperative	31 (67.39)	96 (36.09)	0.484 (0.173 to 1.35)	0.1654
Return to follow-up postoperative	2 (4.35)	8 (3.01)	0.625 (0.102 to 3.833)	0.6115
6-Injury types				
Closed	4 (8.7)	24 (9.02)	Reference	
Opened	38 (82.61)	232 (87.22)	1.018 (0.334 to 3.096)	0.9756
Ambiguous	4 (8.7)	10 (3.76)	0.417 (0.087 to 2.003)	0.2744
7-Complications/Comorbidities				
Anemia	NA	45 (97.83)	244 (91.73)	Reference
YES	1 (2.17)	22 (8.27)	2 (0.454 to 8.81)	0.3596
Diabetes	NA	45 (97.83)	261 (98.12)	Reference
YES	1 (2.17)	5 (1.88)	0.862 (0.098 to 7.552)	0.8934
Hypertension	NA	46 (100)	256 (96.24)	Reference
YES	0 (0)	10 (3.76)	2.494 (0.501 to +∞)	0.391
Hypoproteinemia	NA	43 (93.48)	227 (85.34)	Reference
YES	3 (6.52)	39 (14.66)	2.462 (0.728 to 8.329)	0.1473
Multiple fracture	NA	38 (82.61)	175 (65.79)	Reference
YES	8 (17.39)	91 (34.21)	2.47 (1.106 to 5.516)	0.0274
Nerve injury	NA	42 (91.3)	233 (87.59)	Reference
YES	4 (8.7)	33 (12.41)	1.487 (0.501 to 4.416)	0.4749
Shock	NA	44 (95.65)	237 (89.1)	Reference
YES	2 (4.35)	29 (10.9)	2.691 (0.62 to 11.686)	0.1864
Skin abrasions	NA	44 (95.65)	241 (90.6)	Reference
YES	2 (4.35)	25 (9.4)	2.282 (0.522 to 9.981)	0.2732
Vascular injury	NA	41 (89.13)	225 (84.59)	Reference
YES	5 (10.87)	41 (15.41)	1.494 (0.557 to 4.006)	0.4248
Others	NA	45 (97.83)	249 (93.61)	Reference
YES	1 (2.17)	17 (6.39)	3.069 (0.399 to 23.623)	0.2815
None	NA	14 (30.43)	160 (56.77)	Reference
YES	32 (69.57)	106 (43.23)	0.29 (0.148 to 0.569)	0.0003

Supplemental Table 6. Multivariate analysis of logistic regression was conducted to identify the relative risk factors for patients with polymicrobial positive (PP) or polymicrobial negative (PN) infections.

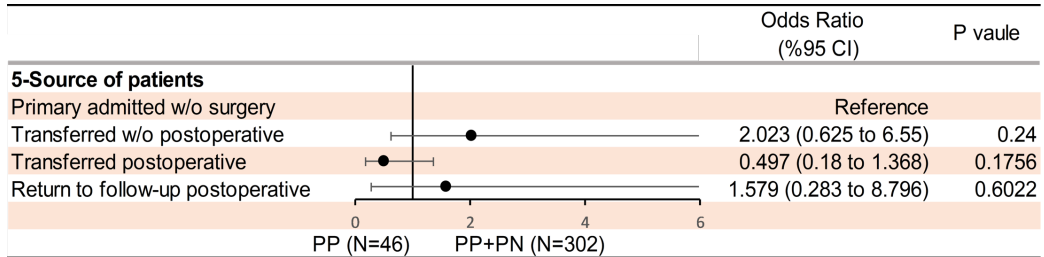
	Odds Ratio (%95 CI)	P vaule
5-Source of patients		
Primary admitted w/o surgery	Reference	
Transferred w/o postoperative	2.648 (0.8 to 8.761)	0.1108
Transferred postoperative	0.637 (0.22 to 1.839)	0.4039
Return to follow-up postoperative	0.685 (0.108 to 4.341)	0.6881
7-Complications/Comorbidities		
None	NA	
YES	0.384 (0.189 to 0.78)	0.0082

Supplemental Table 7. Univariate analysis of logistic regression was conducted to identify the relative risk factors for patients with polymicrobial positive (PP) or polymicrobial positive/negative (PP+PN) infections.

	PP N=46	PP+PN N=302	Odds Ratio (%95 CI)	P value
1-Ethnicity				
The Han ethnicity	42 (91.3)	269 (89.07)	Reference	
The Hui ethnicity	0 (0)	19 (6.29)	4.119 (0.872 to +∞)	0.1417
Tujia	3 (6.52)	7 (2.32)	0.364 (0.091 to 1.464)	0.1548
Other minorities	1 (2.17)	7 (2.32)	1.093 (0.131 to 9.109)	0.9345
2-Gender				
Male	259 (85.76)	40 (86.96)	Reference	
Female	43 (14.24)	6 (13.04)	1.107 (0.443 to 2.768)	0.8282
3-Injury factors				
Traffic accident	15 (32.61)	97 (32.12)	Reference	
Fall	9 (19.57)	42 (13.91)	0.722 (0.293 to 1.779)	0.4785
High falling injury	5 (10.87)	36 (11.92)	1.113 (0.377 to 3.285)	0.8457
Hard object crashing	4 (8.7)	30 (9.93)	1.16 (0.358 to 3.761)	0.8049
Crush injury	0 (0)	13 (4.3)	4.524 (0.231 to 88.673)	0.3202
Destructive injury	1 (2.17)	5 (1.66)	0.773 (0.084 to 7.082)	0.8199
Mangled injury	0 (0)	11 (3.64)	3.853 (0.191 to 77.656)	0.3787
Cutting injury	0 (0)	3 (0.99)	1.173 (0.037 to 37.368)	0.9281
High-explosive injury	0 (0)	2 (0.66)	0.838 (0.02 to 35.814)	0.9264
Pathological fracture	0 (0)	1 (0.33)	0.348 (0.005 to 23.589)	0.6235
Ambiguous trauma	12 (26.09)	62 (20.53)	0.844 (0.374 to 1.902)	0.6818
4-Age				
≤ 20 yr	4 (8.7)	46 (15.23)	Reference	
21-30 yr	10 (21.74)	55 (18.21)	0.478 (0.141 to 1.626)	0.2375
31-40 yr	6 (13.04)	61 (20.2)	0.884 (0.236 to 3.315)	0.8550
41-50 yr	13 (28.26)	75 (24.83)	0.502 (0.154 to 1.631)	0.2516
51-60 yr	9 (19.57)	43 (14.24)	0.415 (0.119 to 1.449)	0.1681
≥ 61 yr	4 (8.7)	22 (7.28)	0.478 (0.109 to 2.093)	0.3274
5-Source of patients				
Primary admitted w/o surgery	5 (10.87)	38 (12.58)	Reference	
Transferred w/o postoperative	8 (17.39)	123 (40.73)	2.023 (0.625 to 6.55)	0.2400
Transferred postoperative	31 (67.39)	117 (38.74)	0.497 (0.18 to 1.368)	0.1756
Return to follow-up postoperative	2 (4.35)	24 (7.95)	1.579 (0.283 to 8.796)	0.24
6-Injury types				
Closed	4 (8.7)	47 (13.56)	Reference	
Opened	38 (82.61)	234 (77.48)	0.524 (0.179 to 1.538)	0.2396
Ambiguous	4 (8.7)	21 (6.95)	0.447 (0.102 to 1.959)	0.2855
7-Complications/Comorbidities				
Anemia	NA	45 (97.83)	264 (87.42)	Reference
YES	1 (2.17)	38 (12.58)	6.475 (0.867 to 48.34)	0.0686
Diabetes	NA	45 (97.83)	292 (96.69)	Reference
YES	1 (2.17)	10 (3.31)	1.541 (0.193 to 12.329)	0.6835
Hypertension	NA	46 (100)	296 (98.01)	Reference
YES	0 (0)	6 (1.99)	1.722 (0.362 to +∞)	0.6209
Hypoproteinemia	NA	43 (93.48)	275 (91.06)	Reference
YES	3 (6.52)	27 (8.94)	1.407 (0.409 to 4.837)	0.5882
Multiple fracture	NA	38 (82.61)	242 (80.13)	Reference
YES	8 (17.39)	60 (19.87)	1.178 (0.522 to 2.656)	0.6934
Nerve injury	NA	42 (91.3)	284 (94.04)	Reference
YES	4 (8.7)	18 (5.96)	0.665 (0.215 to 2.062)	0.4803
Shock	NA	44 (95.65)	286 (94.7)	Reference
YES	2 (4.35)	16 (5.3)	1.231 (0.274 to 5.537)	0.7868
Skin abrasions	NA	44 (95.65)	281 (93.05)	Reference
YES	2 (4.35)	21 (6.95)	1.644 (0.372 to 7.257)	0.5116
Vascular injury	NA	41 (89.13)	272 (90.07)	Reference
YES	5 (10.87)	30 (9.93)	0.904 (0.332 to 2.464)	0.8442
Others	NA	45 (97.83)	279 (92.38)	Reference
YES	1 (2.17)	23 (7.62)	3.71 (0.489 to 28.153)	0.2049
None	NA	14 (30.43)	136 (42.72)	Reference
YES	32 (69.57)	166 (57.28)	0.534 (0.274 to 1.041)	0.0655

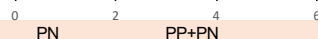


Supplemental Table 8. Multivariate logistic regression analysis was conducted to identify the relative risk factors for patients with polymicrobial positive (PP) or polymicrobial positive/negative (PP+PN) infections.



Supplemental Table 9. Univariate analysis of logistic regression was conducted to identify the relative risk factors for patients with polymicrobial negative (PN) or polymicrobial positive/negative infection (PP+PN).

	PN N=266	PP+PN N=302		Odds Ratio (%95 CI)	P value
1-Ethnicity					
The Han ethnicity	251 (94.36)	269 (89.07)		Reference	
The Hui ethnicity	3 (1.13)	19 (6.29)		5.815 (1.701 to 19.883)	0.005
Tujia	2 (0.75)	7 (2.32)		3.216 (0.662 to 15.626)	0.1476
Other minorities	10 (3.76)	7 (2.32)		0.643 (0.241 to 1.716)	0.3779
2-Gender					
Male	259 (85.76)	208 (78.2)		Reference	
Female	43 (14.24)	58 (21.8)		0.595 (0.386 to 0.919)	0.0194
3-Injury factors					
Traffic accident	119 (44.74)	97 (32.12)		Reference	
Fall	23 (8.65)	42 (13.91)		2.24 (1.261 to 3.98)	0.0060
High falling injury	21 (7.89)	30 (9.93)		1.753 (0.944 to 3.254)	0.0755
Hard object crashing	32 (12.03)	36 (11.92)		1.38 (0.799 to 2.384)	0.2479
Crush injury	8 (3.01)	13 (4.3)		1.94 (0.773 to 4.872)	0.1583
Destructive injury	11 (4.14)	5 (1.66)		0.558 (0.187 to 1.66)	0.2939
Mangled injury	11 (4.14)	11 (3.64)		1.227 (0.51 to 2.951)	0.6480
Cutting injury	4 (1.5)	3 (0.99)		0.895 (0.196 to 4.23)	0.9229
High-explosive injury	3 (1.13)	2 (0.66)		0.818 (0.134 to 4.993)	0.8276
Pathological fracture	0 (0)	1 (0.33)		3.678 (0.038 to 353.548)	0.5761
Ambiguous trauma	34 (12.78)	62 (20.53)		2.177 (1.324 to 3.579)	0.0022
4-Age					
≤ 20 yr	33 (12.41)	46 (15.23)		Reference	
21-30 yr	40 (15.04)	55 (18.21)		0.986 (0.539 to 1.806)	0.9646
31-40 yr	33 (12.41)	61 (20.2)		1.326 (0.716 to 2.455)	0.3692
41-50 yr	89 (33.46)	75 (24.83)		0.605 (0.351 to 1.04)	0.0690
51-60 yr	40 (15.04)	43 (14.24)		0.771 (0.415 to 1.435)	0.4120
≥ 61 yr	31 (11.65)	22 (7.28)		0.509 (0.251 to 1.031)	0.0609
5-Source of patients					
Primary admitted w/o surgery	32 (12.03)	38 (12.58)		Reference	
Transferred w/o postoperative	130 (48.87)	123 (40.73)		0.797 (0.469 to 1.355)	0.4016
Transferred postoperative	96 (36.09)	117 (38.74)		1.026 (0.597 to 1.765)	0.9252
Return to follow-up postoperative	8 (3.01)	24 (7.95)		2.526 (0.999 to 6.391)	0.0503
6-Injury types					
Closed	24 (9.02)	47 (13.56)		Reference	
Opened	232 (87.22)	234 (77.48)		0.515 (0.305 to 0.87)	0.0131
Ambiguous	10 (3.76)	21 (6.95)		1.072 (0.436 to 2.636)	0.8792
7-Complications/Comorbidities					
Anemia	NA	244 (87.42)		Reference	
YES	22 (8.27)	38 (12.58)		1.596 (0.918 to 2.776)	0.0975
Diabetes	NA	261 (96.69)		Reference	
YES	5 (1.88)	10 (3.31)		1.788 (0.603 to 5.297)	0.2947
Hypertension	NA	256 (98.01)		Reference	
YES	10 (3.76)	6 (1.99)		0.519 (0.186 to 1.448)	0.2101
Hypoproteinemia	NA	227 (85.34)		Reference	
YES	39 (14.66)	27 (8.94)		0.571 (0.339 to 0.962)	0.0354
Multiple fracture	NA	175 (65.79)		Reference	
YES	91 (34.21)	60 (19.87)		0.477 (0.326 to 0.697)	0.0001
Nerve injury	NA	233 (87.59)		Reference	
YES	33 (12.41)	18 (5.96)		0.448 (0.246 to 0.815)	0.0086
Shock	NA	237 (89.1)		Reference	
YES	29 (10.9)	16 (5.3)		0.457 (0.242 to 0.862)	0.0156
Skin abrasions	NA	241 (90.6)		Reference	
YES	25 (9.4)	21 (6.95)		0.72 (0.393 to 1.319)	0.2882
Vascular injury	NA	225 (84.59)		Reference	
YES	41 (15.41)	30 (9.93)		0.605 (0.366 to 1.001)	0.0504
Others	NA	249 (92.38)		Reference	
YES	17 (6.39)	23 (7.62)		1.207 (0.631 to 2.312)	0.5696
None	NA	160 (60.15)		Reference	
YES	106 (39.85)	166 (57.28)		1.842 (1.319 to 2.573)	0.0003



Supplemental Table 10. Multivariate analysis of logistic regression was conducted to identify the relative risk factors for patients with polymicrobial negative (PN) or polymicrobial positive/negative (PP+PN) infections.

	Odds Ratio (%95 CI)	P value
Ethnicity		
The Han ethnicity	Reference	
The Hui ethnicity	4.704 (1.312 to 16.87)	0.0175
Tujia	3.368 (0.643 to 17.648)	0.1506
Other minorities	0.629 (0.226 to 1.75)	0.3746
Gender		
Male	Reference	
Female	1.573 (0.745 to 3.32)	0.0803
Age		
≤ 20 yr	Reference	
21-30 yr	1.424 (0.746 to 2.719)	0.2841
31-40 yr	1.738 (0.899 to 3.359)	0.1002
41-50 yr	0.728 (0.407 to 1.302)	0.2841
51-60 yr	0.863 (0.444 to 1.675)	0.6627
≥ 61 yr	0.636 (0.301 to 1.341)	0.2344
Source of patients		
Primary admitted w/o surgery	Reference	
Transferred w/o postoperative	0.655 (0.371 to 1.155)	0.1439
Transferred postoperative	0.815 (0.456 to 1.455)	0.4887
Return to follow-up postoperative	2.256 (0.857 to 5.941)	0.0994
Complications/Comorbidities		
Anemia	NA	Reference
	YES	1.66 (0.915 to 3.009)
Multiple fracture	NA	Reference
	YES	0.528 (0.351 to 0.796)
Nerve injury	NA	Reference
	YES	0.529 (0.28 to 0.997)
Shock	NA	Reference
	YES	0.537 (0.274 to 1.051)

PN (N=266) PP+PN (N=302)

