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TABLE E-1 Patient Characteristics and Incidence of Potential Predictors

Characteristic	No. of Patients*
Patient factors	
Mean age (and standard deviation) $\dagger$ (yr)	$39.5 \pm 16.0$
Sex	
Male	904 (73.7%)
Female	322 (26.3%)
Race	,
White	986 (80.4%)
Black	109 (8.9%)
Hispanic	46 (3.8%)
Asian	33 (2.7%)
Native	23 (1.9%)
Other	29 (2.4%)
Mechanism of injury†	` ,
High-energy injuries	796 (64.9%)
Motor-vehicle accident	256 (20.9%)
Pedestrian-motor-vehicle accident	248 (20.2%)
Motorcycle accident	143 (11.7%)
Direct blunt trauma	84 (6.9%)
Crush injury	64 (5.2%)
Snowmobile accident	1 (0.1%)
Low-energy injuries	430 (35.1%)
Fall	355 (29.0%)
Twist	57 (4.6%)
Direct penetrating trauma	18 (1.5%)
Previous surgery to affected limb‡ (n = 1223)	
Yes	73 (6.0%)
No	1150 (94.0%)
Smoking history†‡	, ,
Current smoker	406 (33.3%)
Previous smoker	104 (8.5%)
Nonsmoker	711 (58.2%)
Side of fracture	
Left (isolated)	546 (44.5%)
Right (isolated)	658 (53.7%)
Bilateral	22 (1.8%)
Type of fracture†	== (1.070)
Open	392 (32.0%)
Closed	826 (67.4%)
Both open and closed§	8 (0.7%)
Medications	~ (o., , v,
Nonsteroidal anti-inflammatory medication†	87 (7.1%)
Oral steroids	7 (0.6%)

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Anticoagulants Anticoagulants Statins Bone stimulators#  AO/OTA fracture classification 4-0 ↑  A  Bone stimulators #  AO/OTA fracture classification 4-0 ↑  A  Bone stimulators #  AO/OTA fracture classification 4-0 ↑  A  B  B  B  B  B  B  B  B  B B B B B	Characteristic	No. of Patients*
Statins	Anticonvulsants	32 (2.6%)
Bone stimulators#   34 (2.8%)     Isolated fractures†**   825 (67.3%)     AO/OTA fracture classification   4-6†     A	Anticoagulants	153 (12.5%)
Isolated fractures†**   AO/OTA fracture classification   AO/OTA fracture   AO/OTA fracture	Statins	16 (1.3%)
AO/OTA fracture classification A		34 (2.8%)
A       687 (56.0%)         B       362 (29.5%)         C       177 (14.4%)         Location of fracture†‡ (n = 1216)       131 (10.8%)         Proximal and proximal-middle       131 (10.8%)         Distal and distal-middle       792 (65.1%)         Middle       293 (24.1%)         Surgical factors       8         Reamed intramedullary nailing†       622 (50.7%)         Intervention by fracture type†       0pen and reamed         Open and reamed       206 (16.8%)         Open and unreamed       194 (15.8%)         Closed and reamed       416 (33.9%)         Closed and unreamed       410 (33.4%)         Nail material†‡ (n = 1220)       388 (31.8%)         Stainless steel       388 (31.8%)         Titanium       832 (68.2%)         Number of locking screws†‡ (n = 1220)       20 n both sides         <2 on at least 1 side	Isolated fractures†**	825 (67.3%)
B 362 (29.5%) C 177 (14.4%)  Location of fracture†‡ (n = 1216)  Proximal and proximal-middle 131 (10.8%)  Distal and distal-middle 792 (65.1%)  Middle 293 (24.1%)  Surgical factors  Reamed intramedullary nailing† 622 (50.7%)  Intervention by fracture type†  Open and reamed 206 (16.8%) Open and unreamed 194 (15.8%)  Closed and reamed 416 (33.9%)  Closed and unreamed 410 (33.4%)  Nail material†‡ (n =1220)  Stainless steel 388 (31.8%)  Titanium 832 (68.2%)  Number of locking screws†‡ (n =1220)  ≥ 2 on both sides 699 (57.3%)  < 2 on at least 1 side 521 (42.7%)  Fracture gap (adjudicated)†‡ (n =1225)  Gap of ≥ 1 cm 37 (3.0%)  Gap of < 1 cm 100 (8.2%)  No gap 1088 (88.8%)  Time from injury to surgery†‡ (n =1218)  Late (>24 h) 405 (33.3%)  Middle (6-24 h) 606 (49.8%)  Early (<6 h) 207 (17.0%)  Postoperative weight-bearing status†‡ (n =1224)  Type of coverage†	AO/OTA fracture classification <sup>4-6</sup> †	
C       177 (14.4%)         Location of fracture†‡ (n = 1216)       131 (10.8%)         Proximal and proximal-middle       131 (10.8%)         Distal and distal-middle       792 (65.1%)         Middle       293 (24.1%)         Surgical factors       8         Reamed intramedullary nailing†       622 (50.7%)         Intervention by fracture type†       206 (16.8%)         Open and reamed       194 (15.8%)         Closed and unreamed       416 (33.9%)         Closed and unreamed       410 (33.4%)         Nail material†‡ (n =1220)       \$388 (31.8%)         Stainless steel       388 (31.8%)         Titanium       832 (68.2%)         Number of locking screws†‡ (n =1220)       \$20 not least 1 side         \$20 not at least 1 side       521 (42.7%)         Fracture gap (adjudicated)†‡ (n =1225)       \$73 (3.0%)         Gap of ≥1 cm       37 (3.0%)         No gap       100 (8.2%)         No gap       1088 (88.8%)         Time from injury to surgery†‡ (n =1218)         Late (>24 h)       405 (33.3%)         Middle (6-24 h)       606 (49.8%)         Early (<6 h)	A	687 (56.0%)
Location of fracture†‡ (n = 1216)   Proximal and proximal-middle   131 (10.8%)     Distal and distal-middle   792 (65.1%)     Middle   293 (24.1%)     Surgical factors     Reamed intramedullary nailing†   622 (50.7%)     Intervention by fracture type†     Open and reamed   206 (16.8%)     Open and unreamed   194 (15.8%)     Closed and reamed   416 (33.9%)     Closed and unreamed   410 (33.4%)     Nail material†‡ (n = 1220)     Stainless steel   388 (31.8%)     Titanium   832 (68.2%)     Number of locking screws†‡ (n = 1220)     ≥2 on both sides   699 (57.3%)     <2 on at least 1 side   521 (42.7%)     Fracture gap (adjudicated)†‡ (n = 1225)     Gap of ≥1 cm   37 (3.0%)     Gap of <1 cm   100 (8.2%)     No gap   1088 (88.8%)     Time from injury to surgery†‡ (n = 1218)     Late (>24 h)   405 (33.3%)     Middle (6-24 h)   606 (49.8%)     Early (<6 h)   207 (17.0%)     Postoperative weight-bearing status†‡ (n = 1224)     Full   117 (9.6%)     Partial or non-weight-bearing   1107 (90.4%)     Type of coverage†		362 (29.5%)
Proximal and proximal-middle         131 (10.8%)           Distal and distal-middle         792 (65.1%)           Middle         293 (24.1%)           Surgical factors         Reamed intramedullary nailing†           Reamed intramedullary nailing†         622 (50.7%)           Intervention by fracture type†         0pen and reamed           Open and unreamed         194 (15.8%)           Closed and reamed         416 (33.9%)           Closed and unreamed         410 (33.4%)           Nail material†‡ (n =1220)         388 (31.8%)           Stainless steel         388 (31.8%)           Titanium         832 (68.2%)           Number of locking screws†‡ (n =1220)         22 on both sides           <2 on at least 1 side		177 (14.4%)
Distal and distal-middle       792 (65.1%)         Middle       293 (24.1%)         Surgical factors       8         Reamed intramedullary nailing†       622 (50.7%)         Intervention by fracture type†       206 (16.8%)         Open and reamed       206 (15.8%)         Closed and unreamed       416 (33.9%)         Closed and unreamed       410 (33.4%)         Nail material†‡ (n = 1220)       388 (31.8%)         Stainless steel       388 (31.8%)         Titanium       832 (68.2%)         Number of locking screws†‡ (n = 1220)       20 no both sides         <2 on at least 1 side		
Middle       293 (24.1%)         Surgical factors       Reamed intramedullary nailing†       622 (50.7%)         Intervention by fracture type†       206 (16.8%)         Open and unreamed       194 (15.8%)         Closed and reamed       416 (33.9%)         Closed and unreamed       410 (33.4%)         Nail material†‡ (n =1220)       388 (31.8%)         Stainless steel       388 (31.8%)         Titanium       832 (68.2%)         Number of locking screws†‡ (n =1220)       ≥2 on both sides         <2 on at least 1 side		131 (10.8%)
Surgical factors       Reamed intramedullary nailing†       622 (50.7%)         Intervention by fracture type†       206 (16.8%)         Open and reamed       194 (15.8%)         Closed and reamed       416 (33.9%)         Closed and unreamed       410 (33.4%)         Nail material†‡ (n = 1220)       388 (31.8%)         Titanium       832 (68.2%)         Number of locking screws†‡ (n = 1220)       699 (57.3%)         ≥2 on both sides       699 (57.3%)         <2 on at least 1 side		792 (65.1%)
Reamed intramedullary nailing†       622 (50.7%)         Intervention by fracture type†       206 (16.8%)         Open and reamed       194 (15.8%)         Closed and reamed       416 (33.9%)         Closed and unreamed       410 (33.4%)         Nail material†‡ (n = 1220)       388 (31.8%)         Titanium       832 (68.2%)         Number of locking screws†‡ (n = 1220)       22 on both sides         <2 on at least 1 side		293 (24.1%)
Intervention by fracture type†   Open and reamed   206 (16.8%)     Open and unreamed   194 (15.8%)     Closed and reamed   416 (33.9%)     Closed and unreamed   410 (33.4%)     Nail material†‡ (n =1220)     Stainless steel   388 (31.8%)     Titanium   832 (68.2%)     Number of locking screws†‡ (n =1220)     ≥2 on both sides   699 (57.3%)     <2 on at least 1 side   521 (42.7%)     Fracture gap (adjudicated)†‡ (n =1225)     Gap of ≥1 cm   37 (3.0%)     Gap of <1 cm   100 (8.2%)     No gap   1088 (88.8%)     Time from injury to surgery†‡ (n =1218)     Late (>24 h)   405 (33.3%)     Middle (6-24 h)   606 (49.8%)     Early (<6 h)   207 (17.0%)     Postoperative weight-bearing status†‡ (n =1224)     Full   117 (9.6%)     Partial or non-weight-bearing   1107 (90.4%)     Type of coverage†		
Open and reamed       206 (16.8%)         Open and unreamed       194 (15.8%)         Closed and reamed       416 (33.9%)         Closed and unreamed       410 (33.4%)         Nail material†‡ (n =1220)       388 (31.8%)         Stainless steel       388 (31.8%)         Titanium       832 (68.2%)         Number of locking screws†‡ (n =1220)       699 (57.3%)         <2 on at least 1 side		622 (50.7%)
Open and unreamed       194 (15.8%)         Closed and reamed       416 (33.9%)         Closed and unreamed       410 (33.4%)         Nail material†‡ (n =1220)       388 (31.8%)         Stainless steel       388 (31.8%)         Titanium       832 (68.2%)         Number of locking screws†‡ (n =1220)       699 (57.3%)         ≥2 on both sides       699 (57.3%)         <2 on at least 1 side		
Closed and reamed       416 (33.9%)         Closed and unreamed       410 (33.4%)         Nail material†; (n =1220)       388 (31.8%)         Stainless steel       388 (31.8%)         Titanium       832 (68.2%)         Number of locking screws†; (n =1220)       699 (57.3%)         ≥2 on both sides       699 (57.3%)         <2 on at least 1 side		
Closed and unreamed       410 (33.4%)         Nail material†‡ (n =1220)       388 (31.8%)         Stainless steel       388 (31.8%)         Titanium       832 (68.2%)         Number of locking screws†‡ (n =1220)       699 (57.3%)         ≥2 on both sides       699 (57.3%)         <2 on at least 1 side	-	` '
Nail material†‡ (n =1220)       388 (31.8%)         Titanium       832 (68.2%)         Number of locking screws†‡ (n =1220)       699 (57.3%)         ≥2 on both sides       699 (57.3%)         <2 on at least 1 side		416 (33.9%)
Stainless steel       388 (31.8%)         Titanium       832 (68.2%)         Number of locking screws†‡ (n =1220)       699 (57.3%)         ≥2 on both sides       699 (57.3%)         <2 on at least 1 side	Closed and unreamed	410 (33.4%)
Titanium       832 (68.2%)         Number of locking screws†‡ (n =1220)       699 (57.3%)         ≥2 on both sides       699 (57.3%)         <2 on at least 1 side	Nail material†‡ (n =1220)	
Number of locking screws†‡ (n =1220)         ≥2 on both sides       699 (57.3%)         <2 on at least 1 side	Stainless steel	388 (31.8%)
≥2 on both sides       699 (57.3%)         <2 on at least 1 side	Titanium	832 (68.2%)
<2 on at least 1 side	Number of locking screws†‡ (n =1220)	
Fracture gap (adjudicated)†‡ (n =1225)         Gap of ≥1 cm       37 (3.0%)         Gap of <1 cm	≥2 on both sides	699 (57.3%)
Gap of ≥1 cm $37 (3.0\%)$ Gap of <1 cm	<2 on at least 1 side	521 (42.7%)
Gap of ≥1 cm $37 (3.0\%)$ Gap of <1 cm	Fracture gap (adjudicated)†‡ (n =1225)	
No gap       1088 (88.8%)         Time from injury to surgery†‡ (n =1218)       405 (33.3%)         Late (>24 h)       405 (33.3%)         Middle (6-24 h)       606 (49.8%)         Early (<6 h)	Gap of ≥1 cm	37 (3.0%)
Time from injury to surgery†‡ (n =1218)  Late (>24 h)  Middle (6-24 h)  Early (<6 h)  Postoperative weight-bearing status†‡ (n =1224)  Full  Partial or non-weight-bearing  Type of coverage†  Time from injury to surgery†‡ (n =1218)  405 (33.3%)  606 (49.8%)  207 (17.0%)  117 (9.6%)  1107 (90.4%)	Gap of <1 cm	100 (8.2%)
Late (>24 h)       405 (33.3%)         Middle (6-24 h)       606 (49.8%)         Early (<6 h)	No gap	1088 (88.8%)
Late (>24 h)       405 (33.3%)         Middle (6-24 h)       606 (49.8%)         Early (<6 h)	Time from injury to surgery†‡ (n =1218)	
Early (<6 h)  Postoperative weight-bearing status†‡ (n =1224)  Full  Partial or non-weight-bearing  Type of coverage†  207 (17. 0%)  117 (9.6%)  1107 (90.4%)		405 (33.3%)
Early (<6 h)  Postoperative weight-bearing status†‡ (n =1224)  Full  Partial or non-weight-bearing  Type of coverage†  207 (17. 0%)  117 (9.6%)  1107 (90.4%)	Middle (6-24 h)	606 (49.8%)
Full 117 (9.6%) Partial or non-weight-bearing 1107 (90.4%) Type of coverage†	Early (<6 h)	
Full 117 (9.6%) Partial or non-weight-bearing 1107 (90.4%) Type of coverage†	Postoperative weight-bearing status†‡ (n =1224)	
Partial or non-weight-bearing 1107 (90.4%)  Type of coverage†		117 (9.6%)
Type of coverage†	Partial or non-weight-bearing	`
	5 5	
		239 (19.5%)
Delayed primary closure 100 (8.2%)	Delayed primary closure	`
Additional soft-tissue reconstruction 61 (5.0%)		61 (5.0%)
Closed fracture 826 (67.4%)	Closed fracture	826 (67.4%)

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\*Data are based on all 1226 patients who completed one year of follow-up. †Factors included in the predictors analysis. AO/OTA = Arbeitsgemeinschaft für Osteosynthesefragen/Orthopaedic Trauma Association. ‡Missing some data. §Fractures classified as "open" in outcomes analyses and that are bilateral injuries. #Some centers violated the prohibition of using bone stimulators during the one-year follow-up. \*\*No other appendicular long-bone injuries.