

Prospective Randomized Controlled Trial: Early Weight Bearing After Conservative Treatment of Weber B Ankle Fractures

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Purpose: The Weber B fracture is the most common among malleolar fractures. AO guidelines suggest non-weight-bearing with a cast for 4 to 6 weeks. Previous studies have shown weight bearing to be a safe treatment for stable Weber B fractures; however, these studies had low-quality evidence. Our aim was to compare mobilization and weight bearing to immobilization and non-weight-bearing.

Methods: All patients, 16 years and older, with an isolated Weber B fracture (Lauge Hansen supination-eversion stage 2-4A) and congruent ankle mortise in primary radiographs were screened. After assessment of ankle stability on weight-bearing radiographs, patients were randomized between mobilization and weight bearing with a walker (intervention group) and immobilization and non-weight-bearing with a cast (control group). Primary outcome measure was the Olerud-Molander Ankle Score (OMAS). Secondary outcome measures were displacement of fracture after 6 weeks (based on radiographs), range of motion of the ankle, calf circumference, and the 36-Item Short Form Survey (SF-36). Follow-up was planned at 1, 6, and 12 weeks after trauma.

Results: Baseline OMAS was comparable between both groups. A 30-point difference ($P < 0.001$) on a 0-100 scale was observed between study arms after 6 weeks and a 10-point difference ($P = 0.015$) was observed after 12 weeks. Patients randomized to the walker group scored significantly better on SF-36 after 6 and 12 weeks compared to the cast group. Range of motion was significantly better ($P < 0.001$) after 6 weeks of weight bearing. This difference was leveled out after 12 weeks ($P > 0.05$). No radiological displacement was observed in any patient.

Conclusion: The current AO guideline for stable Weber B fractures is outdated. Weight bearing using a walker is a safe and patient-friendly treatment for patients with stable Weber B ankle fractures.

Factor	Ankle Functionality and Health Related Quality of Life			Significance (p-value)
	General (n=49)	Control group (n=25)	Intervention group (n=24)	
Functionality*				
OMAS baseline (Median (IQR))	100 (100-100)	100 (100-100)	100 (100-100)	
OMAS 6 weeks (Median (IQR))	55 (40-71)	40 (30-55)	70 (65-80)	p < 0.001
OMAS 12 weeks (Median (IQR))	80 (60-90)	75 (43-80)	85 (64-95)	p = 0.015
ROM baseline (Median (IQR))	35 (26-42)	36 (27-42)	35 (26-43)	
ROM 6 weeks (Median (IQR))	43 (30-50)	32 (28-44)	48 (42-52)	p < 0.001
ROM 12 weeks (Median (IQR))	51 (46-56)	50 (46-53)	54 (48-57)	
Quality of life				
Baseline vs 6 week follow-up**				
Physical functioning (significance)		p = 0.002	p > 0.001	
Role Limitations due to physical problems (significance)		p = 0.001	p > 0.001	
Role Limitations due to emotional problems (significance)		p = 0.017	p = 0.042	
Energy (significance)		p = 0.039		
Emotional well-being (significance)				
Social functioning (significance)		p < 0.001	p = 0.032	
Pain (significance)		p < 0.001	p = 0.025	
General health (significance)				
6 week vs 12 week follow-up**				
Physical functioning (significance)		p = 0.007		
Role Limitations due to physical problems (significance)		p = 0.012	p = 0.020	
Role Limitations due to emotional problems (significance)				
Energy (significance)		p = 0.049		
Emotional well-being (significance)			p = 0.044	
Social functioning (significance)		p = 0.007	p = 0.046	
Pain (significance)				
General health (significance)				
Baseline vs 12 week follow-up**				
Physical functioning (significance)				
Role Limitations due to physical problems (significance)		p = 0.039	p = 0.031	
Role Limitations due to emotional problems (significance)				
Energy (significance)				
Emotional well-being (significance)				
Social functioning (significance)		p = 0.049		
Pain (significance)		p = 0.030		
General health (significance)				

*Measured using Mann-Whitney U test
**Measured using Wilcoxon-Ranked test
If not significant, p-value was left blank

See the meeting app for complete listing of authors' disclosure information. Schedule and presenters subject to change.