In low- to middle-income countries, there is a lack of consensus on the most suitable treatment option between intramedullary nailing (IMN) and external fixation (EF) for the long-term management of open tibial fractures.

Randomized clinical trial to assess outcomes in patients from Tanzania with open tibial shaft fractures

N = 240

EF treatment group IMN treatment group

Postoperative follow-up at 3 to 5 years to determine

Primary outcome
Death or reoperation for fracture-related complications

Secondary outcomes
- Quality of life (EQ-5D-3L index score)
- Function (FIX-IT score)
- Radiographic alignment (mRUST score)

Outcomes of Intramedullary Nailing and External Fixation of Open Tibial Fractures
Cortez et al. (2022) | DOI: 10.2106/JBJS.22.00016

Regardless of treatment choice, a quarter of patients experienced fracture-related complications, 25% of which persisted to affect long-term outcomes of open tibial fractures.

Patients who died or returned for a follow-up after a mean duration of 4 years

Number of composite primary events detected

EF group IMN group
27.1% 23.9%

Events newly detected on extended follow-up

EF group IMN group
3 3

Unresolved chronic fracture-related infections or nonunion detected in

EQ-5D-3L scores

Patients who sustained a primary event*

25%

EF group IMN group

EQ-5D-3L scores took at least a year to normalize in patients with resolved or no complications

Significantly lower EQ-5D-3L scores in patients with primary events without resolution, as compared to patients with resolved or no complications

mRUST scores

Unresolved chronic fracture-related infections or nonunion detected in

FIX-IT scores

Unresolved chronic fracture-related infections or nonunion detected in

Primary event: A composite of death or recommended reoperation for the treatment of deep infection, nonunion, or malalignment

EQ-5D-3L scores took at least a year to normalize in patients with resolved or no complications

EF group IMN group

Regardless of treatment choice, a quarter of patients experienced fracture-related complications, 25% of which persisted to affect long-term outcomes of open tibial fractures.

In low- to middle-income countries, there is a lack of consensus on the most suitable treatment option between intramedullary nailing (IMN) and external fixation (EF) for the long-term management of open tibial fractures.