

Systematic review and meta-analysis of endovascular therapy versus open surgical repair for the traumatic lower extremity arterial injury, Qi et al. *World Journal of Emergency Surgery*, 2024;19:16.

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Level of Evidence: 2

Reviewer:

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This thorough review and analysis carefully compared the outcomes of endovascular therapy (ET) versus open surgical repair (OSR) for lower extremity arterial injuries caused by trauma. Thirty studies involving 6623 patients were examined, providing a dependable dataset.

The findings, which are of significant importance, revealed that patients who underwent ET had a reduced risk of significant amputation (OR=0.42, 95% CI 0.21 0.85) and fasciotomy or compartment syndrome (OR=0.31, 95% CI 0.20 0.50) compared to those who had OSR. Furthermore, ET showed a significantly reduced risk of amputation in cases of femoral injuries (OR=0.15, 95% CI 0.05 0.45).

There was no variation in all-cause mortality between the ET and OSR groups (OR=1.11, 95% CI 0.75 1.64). However, patients undergoing ET experienced shorter hospital stays than those undergoing OSR (MD= 5.06 days 95% CI 6.76, to 3.36). Intraoperative nerve injury was only documented in OSR patients with an incidence rate of 15% (95% CI 6% 27%).

The comprehensive analysis unequivocally indicates that endovascular therapy surpasses open repair in treating lower extremity arterial injuries, providing a clear direction for medical practice. The option provides reduced chances of amputation fasciotomy or compartment syndrome nerve damage, and a shorter hospital stay, making it a better choice for these patients.

This thorough evaluation and analysis of studies provide compelling evidence supporting endovascular treatment over traditional open surgery for traumatic injuries to the lower leg arteries. The results in terms of saving limbs and minimizing complications are substantial. Endovascular treatment, with its potential to greatly influence medical decision-making, can empower healthcare providers to make better choices, ultimately leading to better outcomes for patients in such situations.



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