

The effect of hallux valgus open and percutaneous surgery on AOFAS scale: a systematic review and meta-analysis

Hernández-Castillejo, L.E.

Álvarez-Bueno, C.

Garrido-Miguel, M.

Torres-Costoso, A.

Reina-Gutiérrez, S.

Martínez-Vizcaíno, V.

Abstract

Purpose: To estimate the comparative effect of open and percutaneous hallux valgus (HV) surgery on patients' quality of life (QoL) using the American Orthopedic Foot and Ankle Society (AOFAS) scale including total score and individual domains (pain, function, and alignment). **Methods:** MEDLINE, EMBASE, Cochrane Library, and Web of Science databases were systematically searched from inception to March 2020 for studies on the effect of HV surgery on patients' QoL using the AOFAS score. A standardized mean difference score was calculated on the total AOFAS score and on each AOFAS domain (pain, function, and alignment) using Cohen's d index. **Results:** Considering the 53 published studies included, the pooled effect size (ES) estimates for the AOFAS total score were 3.69 (95% CI 3.37–4.01; $I^2 = 95.5\%$) for open surgery and 3.40 (95% CI 2.99–3.80, $I^2 = 88.2\%$) for percutaneous surgery. The total pooled ES estimate was 3.61 (95% CI 3.35–3.87, $I^2 = 94.5\%$). Considering the pain domain, the pooled ES estimates were 2.21 (95% CI 1.98–2.43, $I^2 = 64\%$) for open surgery and 2.52 (95% CI 1.83–3.20, $I^2 = 92.6\%$) for percutaneous surgery. For the function domain, the pooled ES estimates were 1.37 (95% CI 0.93–1.81, $I^2 = 91\%$) for open surgery and 2.28 (95% CI 1.10–3.47, $I^2 = 96.8\%$) for percutaneous surgery. Finally, the pooled ES estimates for the alignment domain were 3.99 (95% CI 3.51–4.47, $I^2 = 85.7\%$) for open surgery and 2.66 (95% CI 2.23–3.09, $I^2 = 78.5\%$) for percutaneous surgery. **Conclusion:** Our data support that HV surgery increases the total AOFAS score as well as the AOFAS scores by domain (pain, function, and alignment). Furthermore, our data show that HV surgery increases patients' QoL, after both open and percutaneous surgery, without differences between them.

Author keywords

AOFAS

Hallux valgus

Osteotomy

Quality of life

Surgery