Generic Volar Locking Plate Use in Distal Radius Fractures: A Prospective Randomized Study to Evaluate Cost Reduction

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Purpose: Distal radius fractures (DRFs) are common, especially among older patients and those with osteoporosis. While the optimal treatment choice for DRFs is still debated, the use of open reduction and internal fixation (ORIF) with volar locking plates (VLPs) has increased. Implant cost is a key cost driver in DRF ORIF. Moreover, orthopaedic surgeons are unfamiliar with implant costs. The purpose of this study was to evaluate for differences in cost, surgical characteristics, and clinical outcomes between patients treated with generic VLPs and conventional VLPs.

Methods: From November 2022-April 2023, a prospective study was undertaken in which 6 surgeons alternated between using a generic VLP and a brand name VLP each month while keeping other perioperative protocols unchanged. A retrospective analysis was performed comparing the 2 groups. Demographics and surgical characteristics were collected via chart review. The institution's chargemaster database was cross-referenced for implant cost. Primary outcomes were implant cost and 90-day clinical outcomes (readmission, reoperation, and mortality). Secondary outcomes included estimated blood loss (EBL) and tourniquet time.

Results: A total of 66 patients sustained an isolated, closed DRF and were thus included in this study. Most were female (n = 61, 92.4%), with an average age of 61.0 ± 11.5 years. There were no significant differences between age, sex, smoking status, American Society of Anesthesiologists class, body mass index, AO/OTA classification, EBL, or tourniquet time between patients who received generic and conventional implants. The total cost was significantly different with generic implants and brand name implants costing $702.38 ± 47.83 and $1,348.61 ± 100.77, respectively ($P<0.001$). The largest difference in cost came from generic pegs and screws that were $372.30 ± 11.70 less than conventional pegs and screws ($P<0.001$). No patients experienced complications such as readmission, reoperation, or death within 90 days.

Conclusion: Total implant cost was lower for procedures where generic VLPs were used. Cost differences between generic and brand name implants are driven by the variable selection of pegs and screws. With no differences in tourniquet time, EBL, readmissions and reoperations between the groups, surgeons should consider using generic implants to as a way of increasing the value of care.