Estimated annual cost of amyloid screening at a single orthopedic practice

Richard W. Mckinney, Jeremiah Alexander Adams, Pedro K Beredjiklian, Christopher McCarthy Jones, Jonas Leif Matzon

INTRODUCTION:
The purpose of the study was to estimate the annual cost of adopting a standard amyloidosis screening protocol in patients undergoing carpal tunnel or trigger finger release.
METHODS: Using established and emerging screening criteria for amyloidosis, a database query was conducted to identify patients who would qualify for biopsy over a one-year period (2024) at a single orthopaedic practice with 16 hand surgeons. Two cohorts were established. Cohort 1 captured patients using established screening criteria; that is, either two major criteria (men > 50 years, women > 60 years, bilateral carpal tunnel syndrome (CTS)) or one major criteria plus an additional known amyloidosis risk factor. Cohort 2 utilized emerging criteria, which adds multiple trigger fingers and (trigger finger + CTS) to the major screening criteria. Cost information for initial screening, and for subsequent amyloidosis subtyping and follow-up in cases of a positive screen, were obtained from departmental billing managers and from publicly available data. Based on current literature, we estimated positive amyloidosis screening rates of 2% (minimum), 65% (maximum), and 17% (mean). This yielded the number of patients that would require further amyloidosis testing. This information was used to estimate annual cost associated with the screening protocols.

RESULTS:
In 2024, 1501 patients met established screening criteria. With emerging screening criteria, the number of patients increased to 1981. The cost estimates for initial screening ranged from $255,170 to $336,770. Using mean biopsy positivity rates, the cost for subsequent subtyping and other testing ranged from $2,572,397 – $3,399,599 yielding a net annual cost for all recommended screening and follow-up from $2,827,567 – $3,736,369.
DISCUSSION AND CONCLUSION:
The costs of adopting a standard amyloidosis screening protocol are significant. Further research is needed to better characterize patients at risk for amyloidosis and to determine the cost effectiveness and impact of routine amyloidosis screening.