INTRODUCTION

Throughout the literature, lower-limb amputation, specifically transfemoral amputation (TFA), has been demonstrated to result in decreased quality of life (QOL), activity limitations, and participation restrictions. As amputation is a permanent impairment, the ultimate goal of treatment and rehabilitation is to improve quality of life for these patients by utilizing a prosthetic limb. Osseointegrated prostheses (OIP) have been proposed as alternatives to conventional socket-prostheses due to improvements in prosthetic stability and fixation, hip range of motion, osseointegration, walking ability, and functional capacity. These improvements have been shown to ultimately contribute to an enhanced QOL in this patient population.

PURPOSE

The purpose of this study was to examine the impact of osseointegrated prostheses on quality of life in patients with transfemoral amputation.

METHODS

A literature search of CINAHL, ProQuest Health & Medical Complete, Google Scholar, PubMed/MEDLINE, and Science Direct was conducted using search terms (osseointegrated prostheses) and (transfemoral amputation) and (quality of life or QOL). Inclusion criteria: published within the last 10 years, English, human subjects, peer reviewed, examined patients with TFA and OIP, and assessed QOL in the form of a questionnaire. Studies that were case studies, case series, article reviews, or pilot studies were excluded. Two reviewers independently assessed each study for methodological quality and came to a consensus based on MINORS criteria.

RESULTS

Sample sizes ranged from 16 to 100 participants (252 total). Treatment parameters varied based upon the type of surgical procedure and rehabilitation protocol post-op. The primary outcome assessed was QOL as measured by the Questionnaire for Persons with Transfemoral Amputation (Q-TFA). Four studies also measured QOL via the Short-form 36 (SF-36) Health Survey (SF-36). Secondary outcome measures assessed included: walking ability (distance and speed), energy cost, and Q dependence. Adverse events including infection were reported. Although one study reported a 54.9% participant rate of infection, another study reported the rate of infection was not a major limiting factor in terms of QOL. One study specifically reported overall improvements in QOL in 69% of participants; 87% of all study participants reported an increase in daily OIP use. Statistically significant increases were seen in physical activity, mobility, and global Q-TFA subscale: physical function, role functioning from a physical perspective, bodily pain reduction, and physical component score SF-36 subscale; and walking ability. Statistically significant decreases were seen in energy cost, Q dependence, and the problem Q-TFA subscale.

CONCLUSION

There is moderate evidence in support of the use of OIP for patients with TFA to improve overall QOL. Limitations include: sample size, study design, and inadequate duration of follow-up. Future studies should focus on long-term assessment of functional outcomes.

REFERENCES

5. Khemka A, Frossard L, Lord S, Bosley B, Al Muderis M. Health-related quality of life of individuals with transcutaneous amputation fitted with the Transcutaneous Bone Anchored Prosthesis following the OGAAP. 6th International Conference Advances in Orthopaedic Osseointegration. 2015. Las Vegas, Nevada, USA, p 24