

Cost-Effectiveness Analysis of the Use of COBLATION™ Knee Chondroplasty versus Mechanical Debridement in German Patients

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Abstract : Background and objectives: Radiofrequency (RF) generated plasma chondroplasty is considered a promising treatment alternative to mechanical debridement (MD) with a shaver. The aim of the study was to perform a cost-effectiveness analysis comparing costs and outcomes following COBLATION chondroplasty versus mechanical debridement in patients with knee pain associated with a medial meniscus tear and idiopathic ICRS grade III focal lesion of the medial femoral condyle from a payer perspective. Methods: A decision-analytic model was developed comparing economic and clinical outcomes between the two treatment options in German patients following knee chondroplasty. Revision rates based on the frequency of repeat arthroscopy, osteotomy and conversion to total knee replacement, reimbursement costs and outcomes data over a 4-year time horizon were extracted from published literature. One-way sensitivity analyses were conducted to assess uncertainties around model parameters. Threshold analysis determined the revision rate at which model results change. All costs were reported in 2016 euros, future costs were discounted at a 3% annual rate. Results: Over a 4 year period, COBLATION chondroplasty resulted in an overall net saving cost of €461 due to a lower revision rate of 14% compared to 48% with MD. Threshold analysis showed that both options were associated with comparable costs if COBLATION revision rate was assumed to increase up to 23%. The initial procedure costs for COBLATION were higher compared to MD and outcome scores were significantly improved at 1 and 4 years post-operation versus MD. Conclusion: The analysis shows that COBLATION chondroplasty is a cost-effective option compared to mechanical debridement in the treatment of patients with a medial meniscus tear and idiopathic ICRS grade III defect of the medial femoral condyle.

Keywords : COBLATION, cost-effectiveness, knee chondroplasty, mechanical debridement

Conference Title : ICOOMD 2017 : International Conference on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases

Conference Location : London, United Kingdom

Conference Dates : May 25-26, 2017