



# Cost-Effectiveness of stand-alone Lateral Lumbar Interbody Fusion (LLIF) versus Transforaminal Lumbar Interbody Fusion (TLIF) for degenerative spondylosis with low back and leg pain over 2 years

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## Introduction

No studies have compared the health care costs associated with lateral lumbar Interbody fusion (LLIF) and Transforaminal lumbar Interbody fusion (TLIF). We sought to calculate the incremental cost-effectiveness ratio (ICER) and thereby the difference in the mean total cost per QALY gained for LLIF versus TLIF done at one level for the treatment of degenerative spondylosis. We also report on the patient reported outcome measures at 2 year follow up.

## Methods

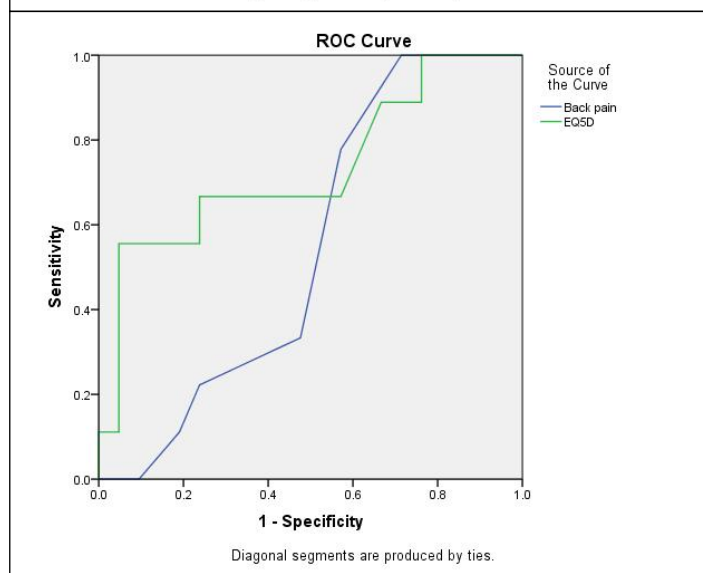
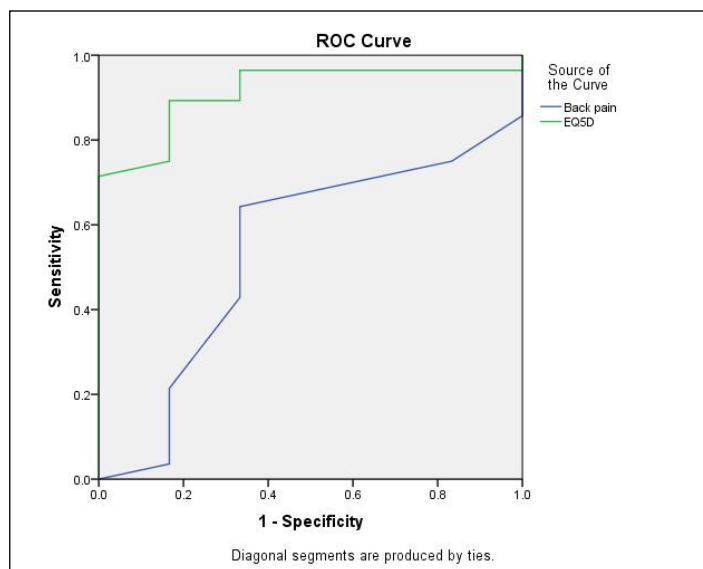
Twenty nine patients undergoing one level stand-alone LLIF and 45 patients undergoing one level TLIF for degenerative spondylosis with low back and leg pain were included. All cost from diagnosis to most recent follow up for every patient was available in the same data bank from a single hospital. Total cost to the third-party payor for all back related medical resource use from the time of diagnosis until 2 years after surgery was calculated. QALYs were calculated from EQ5D. EQ5D scores were collected in an unbiased manner by a non-clinical person. Difference in mean total cost per QALY gained for TLIF minus that for LLIF was assessed as the incremental cost-effectiveness ratio ICER:  $(\text{Cost TLIF} - \text{Cost LLIF}) / (\text{QALY TLIF} - \text{QALY LLIF})$ .

## Results

Significant improvement was observed at latest follow up after LLIF and after TLIF for SF36PCS, SF36MCS, ODI, VAS BP, VAS LP and EQ5d. ICER calculations revealed similar mean QALYs gained (0.34 for TLIF and 0.31 for LLIF). Mean total cost of TLIF and LLIF was \$32870 and \$31998 respectively. Though the cost and EQ5D between the 2 groups were not statistically different, the ICER ratio estimated that TLIF surgery costs \$29066 more to provide one additional QALY.

## Conclusions

The cost effectiveness of TLIF and LLIF are similar. Currently, the reasonable accepted cost-effectiveness threshold in the US is around \$100,000/QALY. Based on the ICER in our study TLIF surgery costs \$29066 more to provide one additional QALY



## Learning Objectives

What is the price we are willing to pay to get one quality adjusted life year? Is it worth it? This study tries to answer these questions.

