

INCREASING EVIDENCE FOR VALUE OF HEALTH CARE IN ORTHOPEDICS: UPDATE FROM A SWISS HEALTH SERVICES RESEARCH STUDY OF ROTATOR CUFF REPAIR

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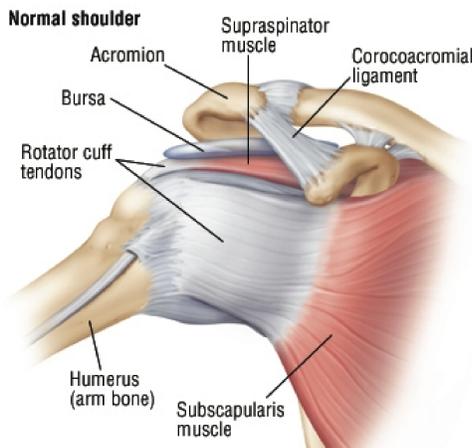


Figure 1: Anatomy of the shoulder
(source: <http://www.patienteducationcenter.org/articles/rotator-cuff-injury/>)

Objectives

Rotator cuff tear of the shoulder (**Figure 1**) is a common musculoskeletal disorder, may have a substantial impact on patients' quality of life (QOL) and implies a significant cost burden. Arthroscopic rotator cuff repair (aRCR) is one established standard therapy. In 2013 a Swiss health economic study in Orthopedics in a real world setting was initiated. We assessed the impact of aRCR on QOL and medical costs compared to the year before surgery. Here we provide intermediate, two year follow-up results.

Methods

In a prospective before-after study at a large Swiss orthopedic center we included consecutive patients, who did not respond to conservative treatment, which is an indication for surgery (aRCR). Patients served as their own controls in the year before surgery. Data for QOL (EQ-5D-5L; utility 0-1) were collected at seven time points up to 2 years after surgery. QOL in the year before surgery was modeled using reasonable assumptions. 10 leading Swiss insurance companies provided direct medical cost data over the whole cycle of care. Primary outcome was incremental cost per quality adjusted life year (QALY) gained from the perspective of a Swiss insurance company.

Intermediate Results

153 patients (mean age 56.9 years; male: 63%) were operated via aRCR. The pattern of the 5 EQ-5D dimensions improved over time (**Figure 2**). Mean QOL (**Figure 3**) showed a stepwise improvement from 0.75 (enrollment before surgery; n=153) to 0.96 (24 months; n=123; German value set). For the first 35 patients with 2 year QOL and cost data, the mean QALY gain was 0.148 (95%-CI: 0.092 to 0.203) compared to the pre-surgical control period. Direct medical costs over time are displayed in the **Table 1**. Mean incremental annual costs were CHF 3,152 (95%-CI: 1,864 to 4,440) compared to the pre-surgical control period. Incremental cost-effectiveness ratio for aRCR was CHF 22,721 per QALY gained (95%-CI: CHF 10,107 to CHF 35,334; **Figure 4**). In a threshold analysis, QALY gain must be lower than 0.035 to cross the CHF 100,000/QALY threshold.

Limitations

This is an observational, uncontrolled study. No control group is available as only some few patients did not agree for surgery despite suboptimal conservative treatment up to the time of the first consultation.

Conclusions

Arthroscopic RCR in Swiss routine care has an attractive cost-utility ratio. Findings have to be confirmed during follow-up.

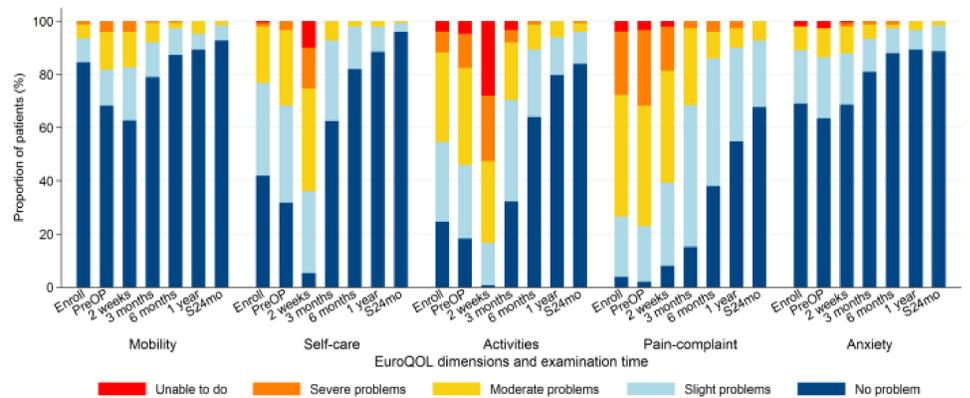


Figure 2: Pattern of the five EQ-5D-dimensions over time

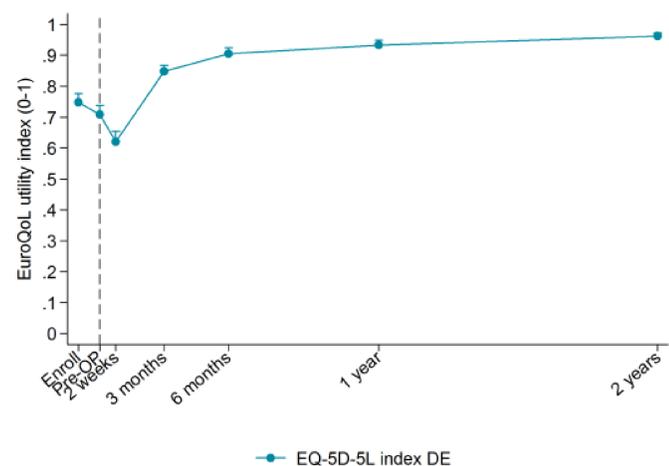


Figure 3: Change in QOL (expressed as EQ-5D-derived utilities 0-1; using German population value set)

Direct medical costs (CHF = Swiss Francs)	Total mean (SD)	Outpatient mean (SD)	Inpatient mean (SD)
1 year before surgery (n=40)	4436 (3142)	3997 (2225)	439 (1546)
1 year after surgery (n=40)	13472 (7804)	5144 (3457)	8328 (6502)
2 year after surgery (n=39)	1681 (2689)	1457 (2466)	224 (799)

Table 1: Direct medical costs. For some of these patients QOL-data are missing.

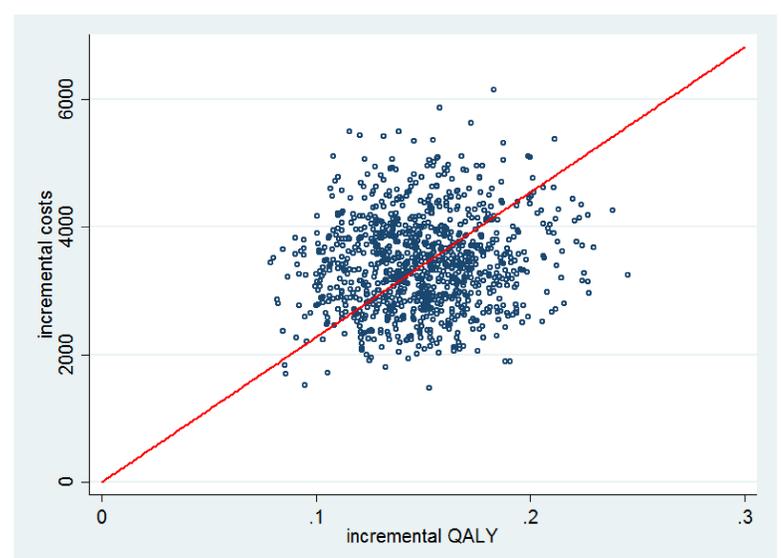


Figure 4: Incremental cost-effectiveness ratio, ICER. 1000 bootstrap re-samples are presented on the cost-effectiveness plane. (Red line: ICER 22,721 CHF/QALY)