IQWiG Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen

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Arthroscopy of the knee joint for gonarthrosis[1]

Executive Summary

[1] Translation of the executive summary of the final report *Arthroskopie des Kniegelenks bei Gonarthrose* (Version 1.0; Status: 14 March 2014). Please note: This translation is provided as a service by IQWiG to English-language readers. However, solely the German original text is absolutely authoritative and legally binding.

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Executive summary

On 26 July 2011 the Federal Joint Committee (G-BA) wrote to the Institute for Quality and Efficiency in Health Care (IQWiG) to commission the assessment of therapeutic arthroscopy of the knee joint for gonarthrosis.

Research question

The aim of this investigation was to assess the benefit of therapeutic arthroscopy with lavage and possibly debridement in comparison with no treatment or sham treatment or in comparison with a different treatment, including physiotherapy, drug treatment, dietary supplements, physical therapy or osteotomy, in patients with gonarthrosis with regard to patient-relevant outcomes.

Methods

Randomized controlled trials (RCTs) that investigated treatment with therapeutic arthroscopy of the knee joint with lavage and possible additional debridement in comparison with no additional treatment, sham treatment or another active treatment were included. Furthermore, the studies were required to include patients with primary or secondary gonarthrosis and to investigate patient-relevant outcomes such as symptoms of gonarthrosis (particularly pain), physical function, health-related quality of life and adverse events.

For this purpose, a systematic literature search was performed in the following databases: MEDLINE, EMBASE, and the Cochrane Central Register of Controlled Trials (Clinical Trials). In addition, a search for relevant systematic reviews took place in the databases MEDLINE and EMBASE in parallel with the search for relevant primary studies. Searches were also conducted in the databases Cochrane Database of Systematic Reviews (Cochrane Reviews), Database of Abstracts of Reviews of Effects (Other Reviews), and the Health Technology Assessment Database (Technology Assessments). The systematic reviews were screened for other relevant studies. The last search was conducted on 24 September 2013.

Depending on the search source, the selection of relevant studies was performed by 2 reviewers independently of each other, or by one reviewer and checked by a second reviewer.

Data extraction was conducted in standardized tables by one reviewer and checked by a second reviewer. After the assessment of the risk of bias, the results of the individual studies were described, organized by outcomes.

Results

Therapeutic arthroscopy with lavage and possible additional debridement was investigated in a total of 11 studies. In 5 of these studies, no active comparator intervention (sham arthroscopy, diagnostic arthroscopy, no additional treatment) was used. In 6 studies, an active comparator intervention (intraarticular glucocorticoid injection, intraarticular hyaluronic acid injection, lavage, oral administration of non-steroidal anti-inflammatory drugs [NSAIDs] or

strengthening exercises under the supervision of a physical therapist). First the results of the studies in which no active comparator intervention was used are presented jointly below. Afterwards the results for each of the active comparator interventions are presented separately.

Arthroscopic interventions compared with no active comparator intervention

There were 5 studies that compared therapeutic arthroscopy with sham arthroscopy, diagnostic arthroscopy or no additional treatment. The results of these studies were considered jointly. It should be noted, however, that one study was only a small pilot study, and its results had no impact in this joint consideration.

There were data from all studies for the outcomes "pain" and "physical function", but the results were often heterogeneous. In summary, there was no hint, indication or proof of a benefit of therapeutic arthroscopy.

There were only data from 2 studies for the global assessment of the symptoms of gonarthrosis. The results were partly heterogeneous, and no hint, indication or proof of a benefit of therapeutic arthroscopy could be derived.

Only data from one study were available for health-related quality of life; a hint, indication or proof of a benefit of therapeutic arthroscopy could not be derived.

For the outcome "adverse events", the overall data availability was insufficient so that no clear conclusion on potential harm of therapeutic arthroscopy could be drawn.

Overall, no hint, indication or proof of a benefit in comparison with no active comparator intervention could be determined for therapeutic arthroscopy with lavage and possible additional debridement.

Arthroscopic interventions compared with an active comparator intervention

There were 6 studies in total that compared therapeutic arthroscopy with an active intervention. There was one study each for the comparison of therapeutic arthroscopy with intraarticular glucocorticoid injection, lavage, oral administration of NSAIDs and strengthening exercises under the supervision of a physical therapist. Two studies compared therapeutic arthroscopy with intraarticular hyaluronic acid injection.

Arthroscopic interventions versus glucocorticoids

There were statistically significant effects in favour of therapeutic arthroscopy for the outcomes "pain" and "physical function" in the one study that compared therapeutic arthroscopy with intraarticular glucocorticoid injection. However, the confidence intervals (CIs) of the estimates were not fully above the irrelevance threshold so that an irrelevant effect could not be excluded with certainty. Hence no hint, indication or proof of a benefit of therapeutic arthroscopy could be derived for these outcomes.

The improvement of knee symptoms based on the patients' assessment was presented for the outcome "global assessment of the symptoms of gonarthrosis" in the study included. The odds ratio (OR) in favour of therapeutic arthroscopy was 3.49 (95% CI: [1.73; 7.07]) at 3 months of follow-up, and 4.07 (95% CI: [1.99; 8.33]) at 6 months of follow-up. Due to the high risk of bias at study and outcome level, only a hint, but no indication or proof of a benefit of therapeutic arthroscopy could be determined.

Data availability on the outcome "adverse events" was insufficient in the study so that any harm from therapeutic arthroscopy or from intraarticular glucocorticoid injection could not be assessed.

There were no data for the outcome "health-related quality of life".

Arthroscopic interventions versus lavage

One study could be included for this comparison, which provided data on the outcomes "pain", "physical function" and "global assessment of the symptoms of gonarthrosis". No hint, indication or proof of a benefit of therapeutic arthroscopy could be determined for any of the outcomes. No data were available from the study on the outcomes "health-related quality of life" and "adverse events".

Arthroscopic interventions versus hyaluronic acid

The comparison of therapeutic arthroscopy with hyaluronic acid was investigated in 2 studies. However, data from both studies were only available for the outcome "global assessment of the symptoms of gonarthrosis" at the time point 12 months. The results of both studies were heterogeneous for this outcome; no hint, indication or proof of a benefit of therapeutic arthroscopy could be derived.

The outcomes "pain" and "physical function" were only investigated in 1 of the 2 studies. There was no significant effect in favour of therapeutic arthroscopy; hence no hint, indication or proof of a benefit of therapeutic arthroscopy could be derived for these outcomes.

No data were available for the outcomes "health-related quality of life" and "adverse events".

Arthroscopic interventions versus oral administration of NSAIDs

Data from one study, which provided data on the outcome "global assessment of the symptoms of gonarthrosis" at the time point 36 months, were available for the comparison of therapeutic arthroscopy with oral administration of NSAIDs. No hint, indication or proof of a benefit of therapeutic arthroscopy could be determined. There were unsuitable data for the outcome "adverse events" so that no reliable conclusion on potential harm of therapeutic arthroscopy could be drawn.

There were no data for the outcome "health-related quality of life".

Arthroscopy versus strengthening exercises under the supervision of a physical therapist

Data on the subgroup of patients who also had gonarthrosis were available for the comparison of arthroscopic interventions with strengthening exercises under the supervision of a physical therapist in patients with damage of the meniscus. The outcomes "pain" and "global assessment of the symptoms of gonarthrosis" were recorded after 3, 6, 12 and 24 months in this study. For all outcomes, there was no significant effect at any time point. Hence no hint, indication or proof of a benefit of therapeutic arthroscopy could be derived.

Conclusion

The benefit of therapeutic arthroscopy (with lavage and possible additional debridement) for the treatment of gonarthrosis is not proven. There was no hint, indication or proof of a benefit of therapeutic arthroscopy for any patient-relevant outcome in comparison with no active comparator intervention. There was also no hint, indication or proof of a benefit of therapeutic arthroscopy for any outcome in the comparisons with lavage, oral administration of NSAIDs, intraarticular hyaluronic acid injection or strengthening exercises under the supervision of a physical therapist. Only in comparison with intraarticular glucocorticoid injection, there was a hint of a benefit of therapeutic arthroscopy for the outcome "global assessment of the symptoms of gonarthrosis".

Keywords: arthroscopy, osteoarthritis – knee, benefit assessment, systematic review

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