Decision algorithms for the re-treatment with viscosupplementation in patients suffering from knee osteoarthritis.

Recommendations from the EUROpean VIScosupplementation COnsensus group

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BACKGROUND

Viscosupplementation (VS) is a symptomatic treatment of knee osteoarthritis. Although systematic reviews of its repeat use showed favorable benefit/risk ratio, no study was focused on the indication of re-treatment. A task force was created to look at issues regarding re-treatment with VS in knee osteoarthritis. An attempt was made to reach consensus on several issues.

METHODS 1

Experts: Ten experts from Belgium, France, Germany, Italy, Spain and UK, congregated in a working group meeting held in Lyon, France, on September 17 -18, 2015. This expert panel constituted of 7 rheumatologists, 2 orthopedic surgeons and 1 rehabilitation specialist. All had expertise in clinical research methodology in the field of OA and VS and experience in academic medicine and/or private practice.

Issues: Three members of the task force were tasked to collate an exhaustive literature analysis on the topic. Eighteen statements were discussed during the meeting. After extensive debate, the expert panel had to give opinion on each of the 88 issues within the 18 statements. The first step was to define "success" and "failure" of the treatment. The second step was to determine when and how to re-treat patients successfully treated by a previous VS. The third step was to determine when and how to re-treat patients in whom VS previously failed. The fourth step was to propose management options where the patient experienced moderate adverse reaction following previous VS. Finally, the task force examined the role of serum and urine biomarkers in re-treatment with HA.

Scoring and voting methods: For each statement, the experts had to score according to their degree of agreement, using an 4-point Likert scale (0-3), 0 meaning « I don't agree », 1 "I tend to disagree", 2 "I tend to agree" and 3 «I agree ». After debate and review of literature each item was finally classified into 2 categories: "Agree" or "Disagree". The statement was adopted and was consequently included into the decision algorithm only if 8 experts or more voted either to "Agree" or "Disagree". At the end of the session, 2 "Decision Trees" regarding re-treatment with VS were built according to the results of the votes: one after failure and the second after success of a previous VS.

Recommendations: The algorithms of recommendations (Figures 1 and 2) were drafted after taking into account suggestions, comments and approval by all the experts in the working group.

RESULTS

In case of failure of a previous VS:

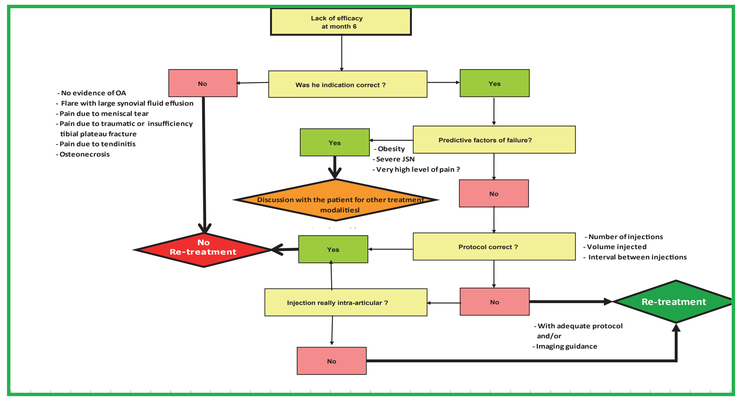
The task force draw attention to the need of a rigorous clinical and radiological analysis, and the respect of Evidence-Based-Medicine (Table I). All the decision steps are summarized in the algorithm (FIGURE 1)

Table I

Issues on re-treatment after failure of viscosupplementation	Level of consensus	Agreement	
		Agree	Disagree
Among the following items which are those you consider as predictive factors of viscosupplementation failure?			
Kellgren-Lawrence grade III and IV	Moderate against	3	7
Kellgren-Lawrence grade IV only	Unanimous in favour	10	0
Overweight (BMI between 25 and 30)	No consensus	5	5
Obesity (BMI>30).	Unanimous in favour	10	0
Clinical severity: pain on VAS >6 and ≤8	Strong against	2	8
Clinical severity: pain on VAS ≥8	Weak in favour	6	4
Severe patello-femoral involvement	Strong in favour	9	1
Isolated patello-femoral OA	Strong in favour	8	2
Synovial fluid effusion<10 ml	Strong against	2	8
Synovial fluid effusion>10 ml	Moderate in favour	7	3
Pain due to meniscus tear.	Strong in favour	9	1
OA flare	Strong against	8	2
In your opinion may the following statements influence the results of VS?			
Choice of the viscosupplément	Strong in favour	8	2
Inappropriate protocol (inadequate number of injections, time interval not respected between 2 injections?)?	Strong in favour	8	2
Wrong clinical analysis of pain origin	Unanimous in favour	10	0
Wrong analysis of anatomical severity	Strong in favour	8	2
Extra-articular injection	Unanimous in favour	10	0

Abbreviations: BMI: Body Mass Index; VS: Viscosupplementation; OA: Osteoarthritis; VAS: 100 mm visual analogue scale

Figure 1



When VS was previously successful, re-treatment can be considered after recurrence or increase in pain. However, in subjects with high risk of disease progression, in young patients, and in professional sportsmen re-treatment could be considered systematically, because of the probability of hyaluronic acid to slow OA progression.

Level of consensus is given in Table II. Algorithm for decision is presented in FIGURE 2.

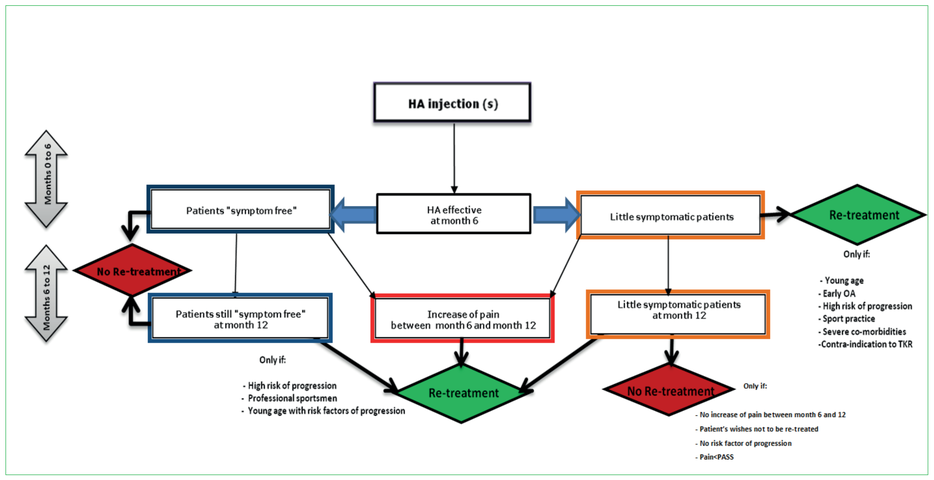


Figure 2

Issues on re-treatment after success of viscosupplementation	Level of consensus	Agreement	
		Agree	Disagree
Re-treatment with VS must be considered			
Systematically every 6 to 12 months, even if patients remain asymptomatic	Strong against	2	8
Only if pain returns to pre-treatment levels	Strong against	2	8
Only from a certain level of pain (i.e. PASS)	Strong in favour	8	2
As soon as pain occurs again	Strong in favour	9	1
According to the patient's wishes	Moderate in favour	7	3
Must we re-treat systematically little symptomatic patients?			
Yes	Weak in favour	6	4
Every 3 months	Strong against	0	6
Every 6 months	Strong against	1	5
Every year	Strong against	1	5
Yes but the time interval between 2 treatments must be adapted to the patient's situation (i.e. age, anatomical severity, activities...)	Unanimous in favour	6	0
Which of these clinical situations may push you into re-treating patients?			
Early stage of OA?	Strong in favour	9	1
Advanced stage of OA?	Strong against	2	8
Young age?	Strong in favour	9	1
Elderly	Moderate against	3	7
Risk factors of rapid progression?	Strong in favour	9	1
Sports practice (leisure)?	No consensus	5	5
Sports practice (professional)?	Strong in favour	9	1
Contra-indication to arthroplasty ?	Moderate in favour	7	3
Severe co-morbidities?	Strong in favour	8	2
Does the chondroprotective properties of HA influence your decision to re-treat asymptomatic or little symptomatic patients with HA?	Strong in favour	8	2

Abbreviations: VS: Viscosupplementation; OA: Osteoarthritis; PASS: Patient's Acceptable Symptom State; HA: Hyaluronic Acid

Table II

CONCLUSION

In conclusion, the EUROVISCO working group drew up a set of suggestions aimed to help practitioners in the decision of re-treatment with VS in patients with knee OA who were previously treated with IA HA injections.

In case of failure, the authors draw attention to the necessity of a rigorous clinical and radiological analysis, and to the use of VS in concordance with data from the Evidence-Based-Medicine.

In patients who previously improved with VS, re-treatment can be considered as soon as pain recurs or increases again. However, in subjects with a high risk of progression, in young patients, early OA, professional sportsmen, VS re-treatment can be considered systematically even in asymptomatic patients as there is compelling new evidence on HA to retard OA progression. Evidence on soluble biomarkers was not considered as enough strong to support their use as decision tools for patient retreatment.

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