

BRAZILIAN CONSENSUS STATEMENT ON VISCOSUPPLEMENTATION OF THE HIP (COBRAVI-Q)

CONSENSO BRASILEIRO DE VICOSSUPLEMENTAÇÃO DO QUADRIL (COBRAVI-Q)

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ABSTRACT

Objective: The Brazilian Consensus on Hip Viscosupplementation aims to generate a referential and consensual source from the theoretical knowledge and clinical experience of specialists in the field. **Methods:** A multidisciplinary panel was formed with 15 specialists (sports medicine, orthopedists, physiatrists and rheumatologists), based on clinical and academic experience in the use of viscosupplementation of the hip. 12 statements were prepared, discussed and voted. Each panelist gave a value between 0 and 10 on a Likert scale, specifying their level of agreement with the statement. **Results:** The panel reached a consensus on several aspects of viscosupplementation of the hip, with emphasis on the following statements: best indication is for mild to moderate hip arthrosis; it may be indicated in severe osteoarthritis; results may vary according to the characteristics of the viscosupplement used; Viscosupplementation should not be performed as an isolated procedure, but in conjunction with other rehabilitation and pharmacological measures; best injection technique should be based on anatomical references coupled with imaging guidance; it is a cost-effective procedure. **Conclusion:** Viscosupplementation is a safe and effective therapy for hip osteoarthritis, even in severe cases. Guided injection is recommended. **Level of Evidence V, Expert Opinion.**

Keywords: Osteoarthritis. Hip. Viscosupplementation. Injections, Intra-Articular.

RESUMO

Objetivo: O Consenso Brasileiro de Viscosuplementação do Quadril visa gerar uma fonte referencial a partir do conhecimento teórico e da experiência clínica de especialistas da área. **Métodos:** Um painel multidisciplinar foi formado com quinze especialistas (médicos do esporte, ortopedistas, fisiatras e reumatologistas), com base na experiência clínica e acadêmica no uso da viscosuplementação do quadril. Foram elaboradas, discutidas e votadas doze afirmativas. Cada membro do painel deu um valor entre 0 e 10 numa escala tipo Likert, especificando seu nível de concordância com a afirmação. **Resultados:** O painel chegou a um consenso sobre diversos aspectos da viscosuplementação do quadril, destacando-se: a melhor indicação é para tratar artrose de quadril leve a moderada; pode ser indicada para casos graves; os resultados podem variar de acordo com o viscosuplemento utilizado; não deve ser realizada como procedimento isolado, mas em conjunto com outras medidas reabilitadoras e farmacológicas; a melhor técnica para infiltração no quadril deve se basear nas referências anatômicas combinadas com guiagem por imagem; a viscosuplementação do quadril é um procedimento custo-efetivo. **Conclusão:** A viscosuplementação é uma alternativa terapêutica segura e eficaz na osteoartrite do quadril, mesmo em casos graves. Recomenda-se o uso de métodos guiados. **Nível de Evidência V, Opinião do Especialista.**

Descritores: Osteoartrite. Quadril. Viscosuplementação. Injeções intra-articulares.

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INTRODUCTION

Osteoarthritis (OA) of the hip is one of the main causes of pain and disability in the western population.¹ Its incidence increases with age, when there is some stage of the disease in about 25 to 30% of people aged over 45 years, and it can also occur in young adults, especially in high performance athletes, in individuals who perform some labor activities, and after joint fracture.²⁻⁶ The main goals of OA treatment involve pain relief and improved mobility, with a consequent positive impact on quality of life. The use of oral medications, such as acetaminophen, non-steroidal anti-inflammatory drugs, and opioid analgesics, is recommended.⁷ In addition, physical therapy, specific physical activities, and weight control are indicated and, in refractory cases, surgical procedures such as hip arthroplasty.⁷⁻¹¹ However, the use of oral medications has complications¹⁰ as well as arthroplasties.⁹ Thus, other types of treatment have been used for treating OA, aiming at avoiding the side effects of conventional treatments and delaying the evolution of OA.¹¹⁻¹³ The concentration and molecular weight of hyaluronic acid in synovial fluid decreases with age and progression of osteoarthritis.¹⁴ Therefore, among these new alternatives, viscosupplementation (VS) has been studied and used, through the intra-articular injection of hyaluronic acid (HA), which has an important role in joint lubrication and restoration of the rheological properties of the synovial fluid. The use of VS in the treatment of knee OA is well established.¹⁵ Nonetheless, in the treatment of hip OA, VS has been more recently used, lacking robust studies to adequately support its implementation.^{11,16} When verifying the existing literature for use in hip OA, we found numerous gaps regarding the correct indication, as for the association with intra-articular corticosteroids, the existence of differences between the different presentations of HA, the number of infiltrations, and its economic feasibility and real effects, among others. Seeking to contribute to solving these doubts, we decided to reach a consensus, which is the objective of this study.

METHODS

A multidisciplinary panel of physicians with clinical and academic experience in the use of viscosupplementation in hip OA was carried out, with the objective of discussing, in the light of previously surveyed literature, twelve statements that raise the main doubts in the use of this therapy. Two authors searched the PubMed, EMBASE, Google Scholar, and Cochrane databases using the keywords "viscosupplementation," "hyaluronic acid," "hylan," "hyaluronan," "osteoarthritis," and "hip." Articles with levels of evidence I and II were eligible for this study. The selected articles were then sent to the panel members. All of them also received twelve statements (doubts) that would be discussed in a meeting between all panel members. The local research ethics committee did not request for approval, as it is an experts' opinion document. Subsequently, a face-to-face meeting of the participants was held, in which each member of the panel attributed a value between 0 and 10 on a Likert-type scale, specifying their level of agreement with each statement. On this scale, the value zero meant "strongly disagree," and the value 10 meant "strongly agree." After voting, the values were grouped into three categories, with values between 0 and 3 meaning "disagreement"; values between 4 and 6, "indifference"; and values between 7 and 10, "agreement." Finally, the level of agreement among panelists for each statement was established as "unanimous in favor" when all votes were greater than or equal to 7; "strongly in favor," when only one of the votes was not greater than or equal to 7; "moderately in favor," when only 2 to 4 of the votes were not greater than or equal to 7; "no consensus," when there was no category with at least 4 votes more than another; "moderately

against," when only 2 to 4 of the votes were not less than or equal to 3; "strongly against," when only 1 of the votes was not less than or equal to 3; and "unanimous against," when all the votes were less than or equal to 3.

RESULTS

Statement 1: The best indication is for mild to moderate hip OA.

Agreement: Strongly in favor

Mean: 8

Median: 8

Achieved values: 4-10

The experts' panel argued that there are few studies involving severe hip OA, particularly in younger patients. In addition, they emphasized that the expectation in patients with hip OA is to delay surgery. In this regard, what has been observed is that the vast majority of physicians do not pay attention to this possibility, ultimately performing it at a later time. This justifies one of the reasons for the lack of interest in VS, because the symptoms in mild hip OA are minimal.

The literature has a clear indication in favor of the use of VS in cases considered mild to moderate, in which its use allows an important decrease in pain and gain in joint mobility, improving quality of life.^{1,17-19} According to Pogliacomini et al.,² improvement only occurs in moderate osteoarthritis, with no relevance for mild cases. Conversely, De Lucia et al.²⁰ reported that improvement equally occurs in all stages of OA.

Statement 2: It may be indicated in cases of severe hip OA.

Agreement: Strongly in favor

Mean: 8.75

Median: 9

Achieved values: 6-10

In cases of severe OA, it was argued that the properties of HA will not be able to reverse the deleterious changes of OA. Its use would be more directed to delay hip arthroplasty, but there is no substantial literature to support this evidence. Thus, the opinion of the experts' panel is that the use in cases of severe OA would be indicated for individuals who do not have the clinical conditions to undergo the surgical procedure or who do not want to do it. This view is supported by De Lucia et al.²⁰ Conversely, authors such as Henrotin et al.,¹¹ Piccirilli et al.¹⁷ and Eymard, Chevalier and Conrozier,¹⁹ do not believe in viscosupplementation in severe hip OA.

Statement 3: Previous or concomitant use of intra-articular triamcinolone hexacetonide may potentiate the effect of VS.

Agreement: Moderately in favor

Mean: 8.43

Median: 8.5

Achieved values: 6-10

Experts' opinion is that the combination of triamcinolone hexacetonide with VS provides a faster analgesic effect and maintains the longer lasting effect of VS. Therefore, most prefer to make use of the combination instead of using only hyaluronic acid. This view is supported by Conrozier et al.,¹⁸ who point out that VS takes about four weeks to initiate analgesia, being the most effective corticosteroid in this period, reporting that triamcinolone hexacetonide would be the ideal corticosteroid for stabilizing hyaluronic acid, increasing its viscosity and causing a beneficial interaction. Bannuru et al.²¹ reported that HA takes longer to act, but has a much longer effect than corticosteroids. Hence, the concomitant use of both medications would have a synergistic effect.^{18,22-24}

It was also discussed that, in cases of acutely swollen joint with joint effusion, the isolated use of corticosteroids would be more indicated to reduce the inflammatory process, after performing

arthrocentesis, preventing important changes in the HA to be infiltrated, the same measure recommended by Maricar et al.²⁵ and Uthman, Raynauld and Haraoui²⁶ with VS being used after an interval¹⁸ of 7 to 10 days. In cases in which there was no joint effusion, the use of triamcinolone hexacetonide and VS could be concomitantly performed.

Statement 4: VS results vary according to the molecular characteristics of the viscosupplement used.

Agreement: Unanimous in favor

Mean: 8.75

Median: 9

Achieved values: 7-10

The experts discussed that there are different VS options on the market. They observed that the higher the concentration of the product, the better the clinical result. For De Lucia et al.²⁰, VS with medium and high molecular weight have the same effect, whereas Tikiz et al.²⁷ did not observe any difference comparing the VS with high and low molecular weight.

Statement 5: VS should not be performed as an isolated procedure in the treatment of OA, but in association with other rehabilitative and pharmacological measures.

Agreement: Unanimous in favor

Mean: 10

Median: 10

Achieved values: 10

In the experts' opinion, there is a consensus in the literature that VS should be used together with other measures, as the treatment of OA is multimodal, encompassing weight loss, specific physical exercises, physical therapy, palliative drugs, among others.^{2,18,28,29}

Statement 6: The number of applications will depend on the clinical conditions of the patient and the viscosupplement used.

Agreement: Unanimous in favor

Mean: 8.81

Median: 9

Achieved values: 7-10

According to the specialists' experience, the number of applications will initially depend on the used VS and the patient's clinical conditions. Mauro et al.,³⁰ considered three injections with HA as ideal for patients with mild to moderate OA. This same frequency of three vials, with weekly intervals, was adopted by Tikiz et al.²⁷ and Poubagher, Ozalay and Poubagher³¹. Qvistgard et al.³² also used three vials, but at 14-day intervals. Clementi et al.³³ observed that in cases of moderate OA, the improvement in pain and function was the same when using one vial of HA with high molecular weight and two vials of HA with medium molecular weight. For Migliore et al.,¹ it is safer to use VS with indication of a single intra-articular injection than those with indication of more than one to obtain the same beneficial effects, as it reduces risks and facilitates patient's adherence to treatment.

Statement 7: In cases of mild osteoarthritis of the hip, VS has a chondroprotective effect.

Agreement: No consensus

Mean: 5.94

Median: 6.5

Achieved values: 0-10

The discussion among experts addressed the fact that the use of VS as a chondroprotective drug in the case of mild hip OA is on the borderline between clinical conviction and literature data, considering that there are no studies demonstrating such an effect. It has been postulated that there is little clinical experience on the subject, and it is stated that prophylactic VS is not routinely performed on the hip.

Statement 8: The best technique for VS infiltration in the hip should be based on anatomical references coupled with ultrasound guidance.

Agreement: Strongly in favor

Mean: 9.25

Median: 10

Achieved values: 5-10

According to experts, the use of guided joint infiltration depends on several factors, including the physician's experience, the region to be infiltrated, the patient's biotype, the amount of fluid to be infiltrated, and the chosen access route. In the case of hip joint, the presence of the neurovascular bundle and its depth reinforce the use of guided infiltration. In addition to ultrasound, radioscopy and computed tomography were suggested, depending on the local infrastructure as an imaging method for performing the procedure.

When searching in the literature, the need to associate a subsidiary method to guide hip infiltration is unanimous, due to the risk of injury to the neurovascular bundle and technical difficulty in reaching the joint, in which ultrasound is predominant, both for the simplicity of use and for the absence of risks both for physicians and patients.^{1,2,18,20,30,33,34}

Statement 9: VS generates cost reduction for the Supplementary Health System, being a cost-effective procedure.

Agreement: Strongly in favor

Mean: 8.5

Median: 10

Achieved values: 2-10

For specialists, this is a difficult topic, given the scarcity of studies on the subject, especially with regard to national literature. Migliore et al.,³⁵ observed that the use of VS in the Italian health system, in cases of hip OA, reduced the cost of treatment by delaying surgical procedures — such as arthroplasty and its complications —, in addition to reducing the use of oral medications and its side effects and the need for physical therapy. Arnold et al.³⁶ also observed a cost reduction in the expense of this pathology, when comparing VS in hip OA with arthroplasty; but Pasquale et al.³⁷ has a contrary view, reporting that arthroplasty would be cheaper than the treatment with viscosupplement.

Statement 10: Viscosupplementation promotes analgesic effect.

Agreement: Unanimous in favor

Mean: 9.25

Median: 9

Achieved values: 8-10

Statement 11: Viscosupplementation promotes anti-inflammatory effect.

Agreement: Strongly in favor

Mean: 8.5

Median: 9

Achieved values: 4-10

We chose to discuss these two statements together, considering the proximity between analgesic and anti-inflammatory effects. Specialists notice a real effect in reducing pain and less need for using anti-inflammatory drugs, which suggests that it also has this effect.

The literature that indicates the use of VS in hip OA is preponderant in reporting pain improvement as one of the main effects of this medication.^{1,2,14,20,38,39} As for the anti-inflammatory action, Pogliacomini et al.² highlight it for inhibiting the formation and release of prostaglandin, and it is described by Gupta et al.¹⁴ and Piccirilli et al.¹⁷

Statement 12: VS can promote improved functionality and quality of life in patients with hip OA.

Agreement: Unanimous in favor

Mean: 8.68
Median: 9
Achieved values: 7-10

According to experts, VS has a beneficial effect, but not for all patients. The difficulty in stating a percentage of improvement and its impact on the patient's quality of life was also questioned. When searching in the literature, several studies present, as one of the effects of viscosupplementation on hip OA, the improvement of joint function and pain, with a consequent improvement in the quality of life.^{1,2,14,20,38}

DISCUSSION

This consensus is the continuation of the study on the application of viscosupplementation to the treatment of OA in human joints, which began with the knee.¹⁵ Despite the extensive literature on its use and effectiveness in knee OA, the same does not occur in hip OA, as we could verify when surveying the existing literature, in which we identified both recommendations against its use^{16,21,39,40} and studies describing good results with the use of VS as a treatment option.^{1,2,18,20,21,30,33} In studies that indicate the use of viscosupplements,^{1,2,17-19,21} there is great heterogeneity regarding the type of patient to be treated as well as the different presentations of viscosupplements available on the market. In our view, it is valid to use VS at any stage of OA, as many patients do not have the clinical conditions to undergo surgical procedures or even do not want it, but we have observed that the best results are found for less severe cases.^{1,2,17-19} When using HA, in view of the previous existence of synovitis, we perform arthrocentesis and infiltration with triamcinolone hexacetonide, delaying the infiltration with HA, due to the important changes of this acid by the inflammatory process, as recommended by other authors.^{18,25,26} We perform VS only after healing the synovitis, which occurs, on average, 7 to 10 days after infiltration. In the absence of synovitis, we chose to use triamcinolone hexacetonide in association for achieving an early analgesic effect, as HA only had the same effect approximately four weeks after its use, which was also observed by Bannuru et al.²¹

Despite being a consensus among us that the characteristics of HA influence the result, no differences were identified in the literature consulted on this topic.^{20,27} However, we emphasize that it is easier for the patient to adhere to the treatment when we use a single infiltration, as well as reducing the risks of it, considering the technical difficulties involving this joint. This observation is supported by Migliore et al.¹ The literature also shows that the type of hyaluronic acid is directly linked to the number of required injections, but there seems to be no difference in the result.^{27,30-33} When using intra-articular HA, we emphasize that, as it is a deep joint and with important technical difficulties, the use of guided infiltration, especially with ultrasound, makes the procedure safer and more effective. Our observation is in line with the literature.^{1,2,18,20,30,33,34} It is worth emphasizing that this procedure, from our point of view, is part of a multimodal treatment in which weight loss and specific physical exercises are relevant, as described by other authors.^{2,18,28-30} This treatment results in an improvement in quality of life,^{2,14,20,35,38} due to the improvement in pain and function, both due to analgesic^{1,2,14,20,38,39} and anti-inflammatory effects.^{2,14,17}

Another important effect that we observed with the use of HA is the reduction of costs, despite the fact that we do not have relevant studies in our country, with HA being used only for knee OA.¹⁵ In the literature review, Migliore et al.,³⁵ cited significant cost savings in the Italian health system, but Pasquale et al.³⁷ observed that total hip arthroplasty would be cheaper than the treatment with viscosupplement.

CONCLUSION

The experts, authors of this study, conclude that the use of HA in the treatment of hip OA is a therapeutic alternative that should be used, even in severe cases, due to its safety, efficacy, improvement of pain and function, improvement of patients' quality of life, regardless of the type of HA used, thus emphasizing that the use of guided methods makes the procedure safer and more effective.

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