

Viscosupplementation for pain management on hip osteoarthritis

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Introduction:

Despite numerous reports about clinical efficacy of hyaluronan injection in the treatment of osteoarthritic knee, results of viscosupplementation in hip OA in literature are rare.

Objectives:

The aim of our study was to determine the efficacy and safety of viscosupplementation with synthetic hyaluronic acid to the hip joint

Methods:

It has been set a prospective study to assess control pain and functional performance in a group of patients affected by hip arthritis, before and after viscosupplementation. We performed an intra articular infiltration into the hip of 207 patients (108 male, 99 female), mean age 67,8 (range 40-83). Each patient received under fluoroscopic guidance (Fig 1,2), with the aid of a contrast enhancer, one injection of highly purified sodium hyaluronate derived from bacterial fermentation, containing 75 mg of sodium hyaluronate per 3-ml syringe (**Coxarthrum, LCA Pharmaceutical**, Chartres, France). The inclusion criteria were: hip pain, radiographic evidence of arthritis with the articular rima at least partly conserved, full range of motion of affected hip. Patients were evaluated using Brief Pain Inventory (BPI) score, Visual Analogic Score (VAS) score and Harris Hip score (HHS), pre-infiltration, after three, six and twelve months after treatment. The Brief Pain Inventory (BPI), based from a measure known as the Wisconsin Brief Pain Questionnaire, was developed by the Pain Research Group to provide information on the intensity of pain (the sensory dimension) as well as the degree to which pain interferes with function (the reactive dimension). The BPI also asks questions about pain relief, pain quality, and the patient's perception of the cause of pain. The categorical data were summarized in terms of frequency and percentage. Continuous data were analyzed in terms of mean, standard deviations, Student's test. All patients were evaluated at three months follow-up using HHS and BPI; 165 patients were evaluated by using VAS. 150 patients out of 207 were studied at six months follow-up using HHS and BPI; 128 patients were evaluated by using VAS. 121 patients out of 207 were studied at one year follow-up using HHS and BPI II; 104 patients were evaluated by using VAS.

Results:

Mean VAS scores before infiltration and at 1 year follow-up were 6,21 (range 10-6, SD 1,27) and 2,85 (range 10-3, SD 2.01) respectively ($p < 0,001$) (Fig 3). Fifty three patients (41%) reported at least 50% of pain relief of pain at 6 months follow-up. Mean HHS were 68.35 (range 23-65, SD 8.37) and 81.76 (range 47-91, SD 15.8) respectively ($p < 0,001$) (Fig. 4). Mean BPI Interference score were 30,40 (range 16-60, SD 13,65) and 14,17 (range 8-34, SD 9,78) respectively ($p < 0,05$) (Fig 5). Each item of BPI showed a decrease of pain interference during daily activity. The decrease was statistically significant for all items ($p < 0,001$). Particularly decreasing was observed for pain interference with sleep (from 3,80, SD 2,23 pre infiltration to 1,31, SD 1,17 at 1 year follow-up) and mood (from 4,11, SD 2,18 pre infiltration to 1,83, SD 1,62 at 1 year follow-up). No local side effects or systemic complications were observed in our series

Conclusion:

A single injection of 75 mg of sodium hyaluronate is effective to provide benefit, allowing less injection-related discomfort and fewer hospital visits, encouraging patient to continue long-term treatment. Our results demonstrated that it is possible to delay replacement of the arthritic hip, but above all that hip pain could be eliminated in patients clinically and radiographically at the limit of the indication for surgical treatment. Further prospective randomized placebo controlled studies are necessary to draw definite conclusions

References

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Fig 1. Contrast agent injection (Iopamidol) to check the intra-capsular positioning of the tip needle



Fig 2. Intra-capsular distribution of contrast agent after Sodium Hyaluronate injection

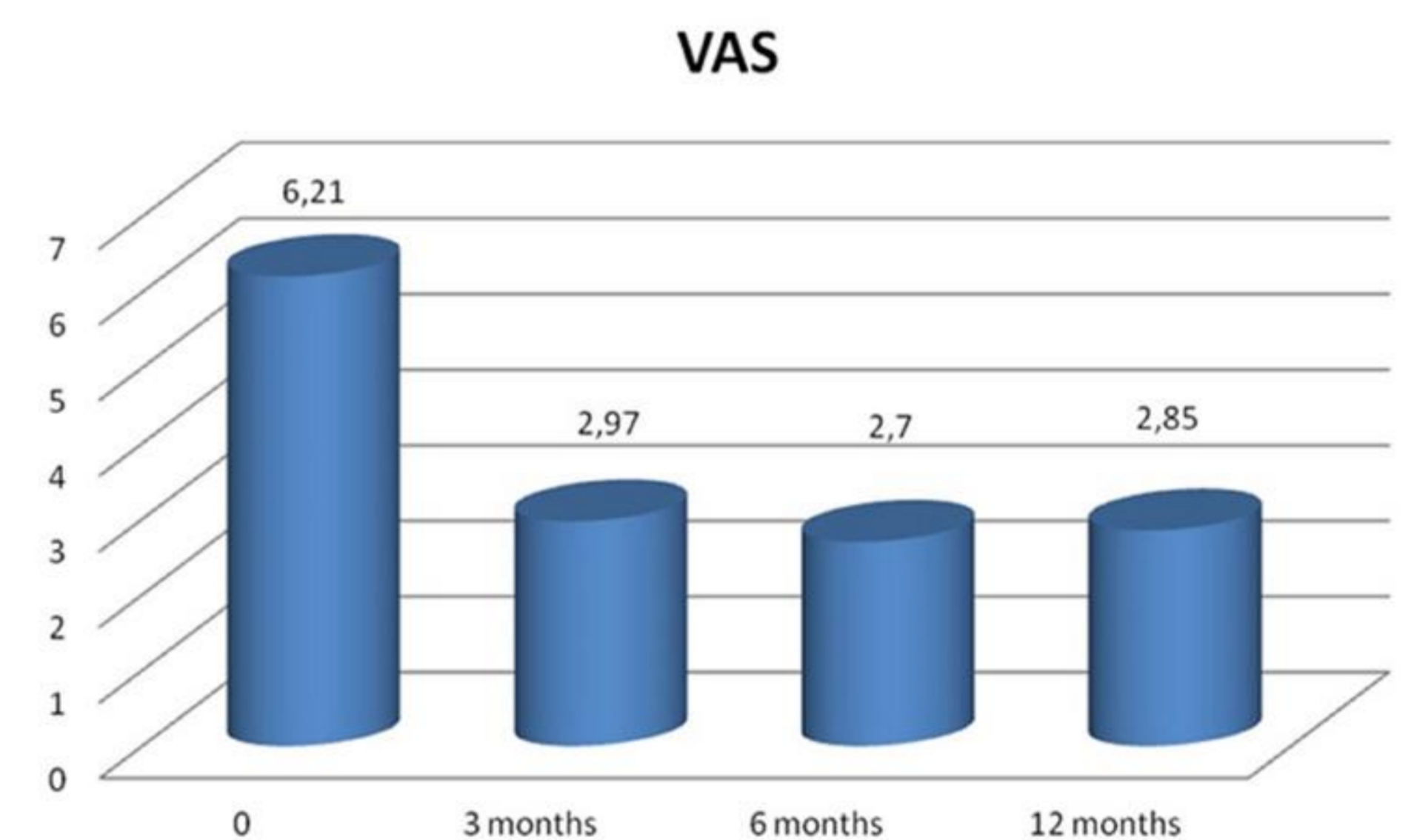


Figure 3: Graph showing reduction in visual analog score after mono-injection



Figure 4: Graph showing variation of Harris Hip Score after mono-injection.

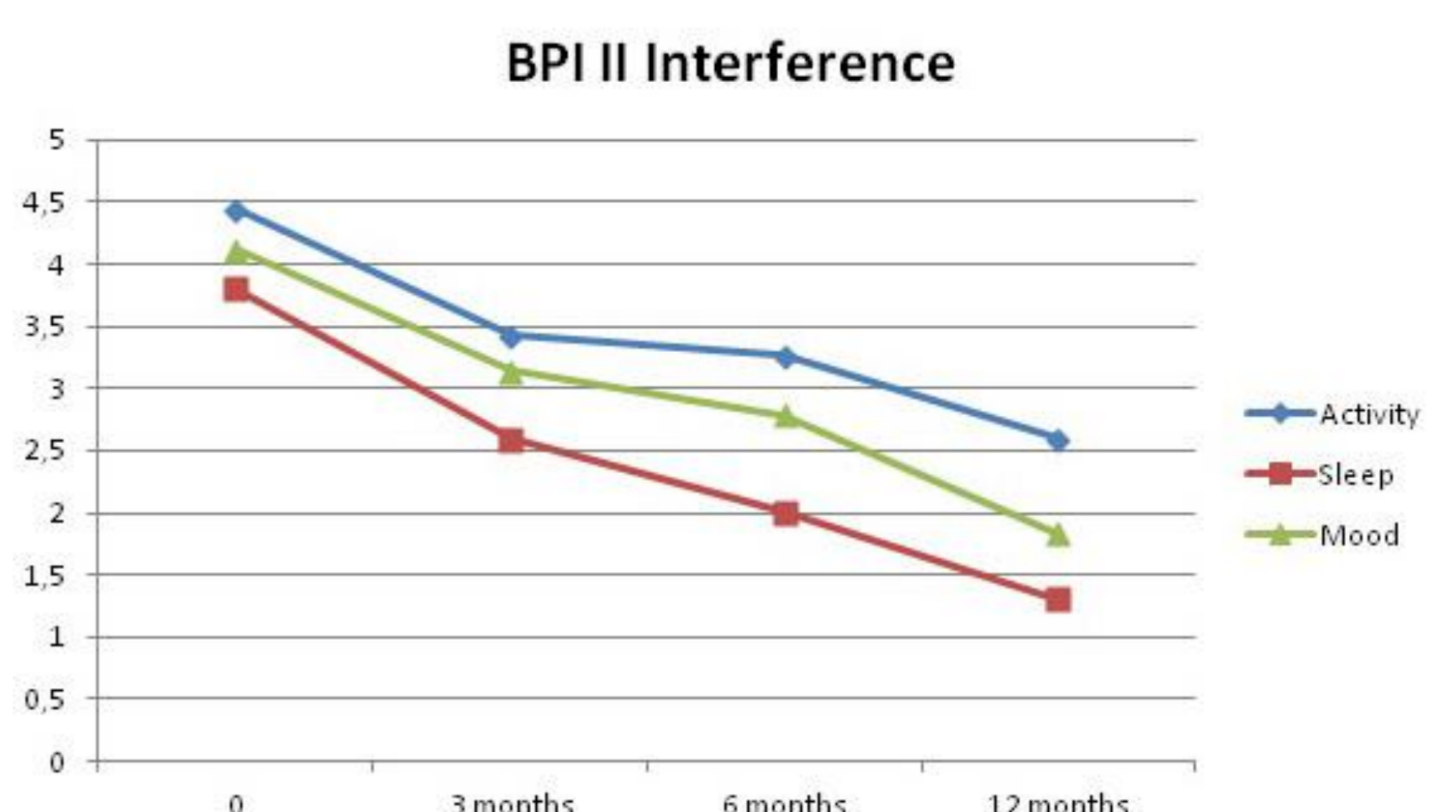


Figure 5: Graph showing analysis of the painful symptomatology incidence on patient life after mono-injection of hyaluronic acid