

## **3T's Guidance on Glucosamine and Chondroitin for the treatment of osteoarthritis**

### **Statement**

Across primary and secondary care the NHS prescribing of supplements such as glucosamine and chondroitin is **not routinely recommended**. This is in line with current NICE guidance<sup>1</sup> for the treatment of osteoarthritis.

Prescribers should be aware of the following:

- Glucosamine hydrochloride (licensed) Alateris has poor evidence of effectiveness.
- Glucosamine sulphate (not licensed), provides only modest pain relief in knee osteoarthritis and whilst it appears to be relatively safe does not have sufficiently strong evidence of cost-effectiveness.
- If used, only a mild or modest reduction in pain can be expected.
- If used, a trial of therapy should be used because not all people benefit from glucosamine.
- If used, the patient's pain should be evaluated before starting glucosamine.
- If used, the benefits of glucosamine should be reviewed after 3 months.
- Avoid in patients taking warfarin or who are allergic to shellfish.

### **Drug and Therapeutics Bulletin November 2008<sup>2</sup>**

There are no published trials of glucosamine (hydrochloride) Alateris, the first and currently only glucosamine product to be licensed as a medicine in the UK as a treatment for knee osteoarthritis.

Alateris should not be prescribed on the NHS until such evidence is available. Published evidence suggests that oral glucosamine sulphate (1,500 mg once daily) provides modest pain relief in knee osteoarthritis and appears to be relatively safe. There are questions about the cost-effectiveness of glucosamine sulphate that make it difficult to advise prescribing such treatment on the NHS.

**Nevertheless, patients might wish to purchase and try glucosamine sulphate and the evidence suggests that this is a reasonable strategy.** The Medicines and Healthcare products Regulatory Agency recommends that **patients on warfarin should not take glucosamine supplements**, since this combination makes bleeding more likely.

### **Why is glucosamine not recommended for use within the NHS?**

#### **Evidence**

Evidence to support the efficacy of glucosamine for osteoarthritis is mixed, and any benefits are small<sup>3</sup>. A Cochrane systematic review performed a meta-analysis of data from 20 RCTs: 17 trials compared glucosamine with placebo, and four trials compared glucosamine with a NSAID (ibuprofen in three trials and piroxicam in one trial). After all the evidence was analysed it was found that glucosamine was not more effective than placebo with respect to pain and function.

The British Medical Journal has recently published<sup>4</sup> the results of a meta-analysis that reviews the effect of glucosamine, chondroitin or the two in combination on joint pain and on radiological progression of disease in osteoarthritis of the hip or knee. The authors conclude that active treatment does "*not reduce joint pain or have an impact on narrowing of joint space*". They further advise that the cost of these treatments should **not be covered** by health organisations and that new treatment initiations should be avoided. The National Institute for Health and Clinical Excellence (NICE) guideline on osteoarthritis **advises against** prescribing glucosamine or chondroitin products. This analysis indicates that this advice is justified.

**The health economics analysis conducted by NICE concluded that glucosamine is not currently cost-effective for the NHS.**

**When economically evaluating the role of glucosamine, NICE concluded that:**

- For glucosamine sulphate, evidence to support its efficacy was not strong enough to warrant recommending that it should be prescribed on the NHS.
- For glucosamine hydrochloride, evidence to support its efficacy as a symptom modifier was poor and, because only one product is licensed, it would not be cost effective to prescribe glucosamine on the NHS - NICE regarded measurement of joint-space narrowing as of questionable value.

Many people with osteoarthritis take over-the-counter glucosamine products and may benefit from clear evidence-based information. It may be beneficial to advise people who wanted to trial over-the-counter glucosamine that the only potential benefits identified in early research are purely related to a reduction in pain (to some people and to only mild or modest degree) with glucosamine sulphate 1500mg daily. They could also benefit from advice on how to perform their own trial of therapy, that is, to evaluate their pain before starting glucosamine and ensure they review the benefits of glucosamine after 3 months.

On the recommendation of NICE the 3T's Formulary Working Group have concluded that **glucosamine** is not recommended for NHS prescribing.

**Why is chondroitin not recommended for use within the NHS?**

- The National Institute for Health and Clinical Excellence (NICE) does not recommend the use of chondroitin for the treatment of osteoarthritis.
- NICE investigated the efficacy and safety of chondroitin with respect to symptoms, function, quality of life, and ability to beneficially modify structural changes of osteoarthritis.
- The NICE guideline development group were even less convinced by the evidence for the efficacy of chondroitin than glucosamine.

**References:**

- 1.) National Institute of Clinical Excellence Osteoarthritis Guidelines CG 59 (Feb 2008)  
<http://www.nice.org.uk/nicemedia/pdf/CG59NICEguideline.pdf>
- 2.) Drug and Therapeutics Bulletin November 2008 Glucosamine for knee osteoarthritis - what's new? -- 46 (11): 81
- 3.) Clinical Knowledge Summaries Osteoarthritis (August 2008)  
[http://www.cks.nhs.uk/osteoarthritis/management/detailed\\_answers/principles\\_of\\_management\\_of\\_osteoarthritis/treatments\\_not\\_recommended/glucosamine](http://www.cks.nhs.uk/osteoarthritis/management/detailed_answers/principles_of_management_of_osteoarthritis/treatments_not_recommended/glucosamine)
- 4.) Wandel S et al. Effects of glucosamine, chondroitin, or placebo in patients with osteoarthritis of hip or knee: network meta-analysis. BMJ 2010; 341:c4675 <http://www.bmj.com/content/341/bmj.c4675.abstract>

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