Evaluation of the use and financial impact of Chondrosulf® 400 in current medical practice

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In the management of osteoarthritis (OA) the main aim in supplementing palliatives with a drug (or treatment) with an in-depth effect on the OA is, of course, to improve the patient's functional state. Although a chondroprotective effect has not, as yet, been proved in man for any such drug, it would – if available – make it possible to cut down on the use of other remedies such as analgesics, nonsteroidal anti-inflammatory drugs (NSAIDs), physiotherapy and spa treatment.

A Phase III study involving more than 2,000 sufferers from knee and hip OA has shown that chondroitin 4&6 sulfate (CS 4&6), administered at a daily dose of 1200 mg for several months, was as effective as NSAIDs in reducing pain and improving function from the second month on, without involving any potential risks, especially those of the gastro-intestinal kind, and that its effect also lasted several weeks after suspension of treatment[1].

These advantages should therefore have a bearing on the overall cost of the disease and discovering the financial impact of a molecule is precisely the object of the medico-financial research that is nowadays customary, albeit carried out with greatly varying methodologies.

The aim of the research conducted in France by B. Henry-Launois *et al.* (Evaluation des schémas d'utilisation et impact économique de Chondrosulf® 400 en situation réelle) was two-fold. On the one hand, it sought to reassess the beneficial effect of CS 4&6 on the volume of NSAID prescriptions issued by doctors in France and, on the other, to ascertain how far the product was being correctly used: that is, as indicated and according to the correct posology. To do this, the authors relied on two highly complementary French medical databases: the IMS-DOREMA database, which is concerned with the analysis of prescriptions issued by general practitioners (GPs) and specialists, and the THALES computerised panel which, based on information supplied by 300 GPs, enabled a thorough analysis to be made of the files of 11,000 OA patients.

For a survey of this kind, account had to be taken of four essential factors: the field considered, the reference group, the main appraisal criterion, and the monitoring required.

The field is large and heterogeneous by reason of the different parts affected by OA, the development of the disease, conditioning factors (age, sex, obesity, etc.), the type of doctor in charge – either a GP or a specialist – and the stage reached in the disease, which may vary greatly. It was thus essential to choose a representative sample and a very large number of patients.

There is no reference trend that would permit the physician's therapeutic approach to be standardised, for this depends not only on the stage reached in the disease or the stage at which the patient decides to take advice (relapse of pain or renewal of treatment), but also on the individual habits of the prescriber and his field of specialisation (i.e., a GP, rheumatologist, or some other kind of specialist), limitations due to drug interactions, and any changes in habits practised in the past. All this, therefore, meant collecting data based on a sufficiently large sample of doctors representative of the profession.

As an efficacy criterion the study considered a reduction in the associated prescription issued for a class of drugs, which meant combining different variables: the prescription level, the daily dose, the number of days of treatment, and the type of drug, which involved classifying therapies. All this meant the collection of data that was both extremely precise and exhaustive.

The duration of the monitoring required for following this type of treatment calls for very careful timing: thus, for two-month treatment and for an interruption of two months, the time needed for monitoring is one year.

To meet all these quality requirements, the authors used two databases (THALES and IMS-DOREMA), representative of the patients, prescribers, and the different types of medical practice, which meant accurate recording of all the different analysable parameters over long periods of time (several years). These databases are complementary. IMS-DOREMA is suitable for cross-referenced research due to its comprehensive doctor-patient population (400 GPs, 435 specialists including 30 rheumatologists, out-patients, and home visits). The THALES database is suitable for longitudinal epidemiological studies, targeted on consultations with GPs, on the basis of data collected in real time by 300 permanent GPs.

In this study, the groups of patients 'with' and 'without' Chondrosulf® did not differ significantly in respect of age, sex, type of OA, history of gastro-intestinal disorders, or the annual number of OA-related visits to the doctor. The comparability of these groups, as well as the lion's share of the Chondrosulf® prescriptions issued by specialists, had to be set against a possible selection bias, which could have been associated with more Chondrosulf® prescriptions for less seriously affected patients. The annual volume of NSAID prescriptions by GPs were, as regards cost, reduced by 67% in respect of patients treated with Chondrosulf® (100.50 FF/year *vs* 332.20 FF/year in the reference group [THALES]). The result coincided exactly with the figures supplied by IMS-DOREMA, according to which the average quantities of NSAIDs prescribed under treatment with Chondrosulf® and expressed in daily defined doses (DDD) had been reduced by 63% and 85.3% respectively, in respect of GPs and specialists, as compared with the doses prescribed for patients who were receiving no such treatment. Thus, the number of DDDs was 2.5 less in respect of GPs (3.9 *vs* 10.5) and 6.7 times less in respect of specialists (2.8 *vs* 18.8) in the Chondrosulf® group. Moreover, the Chondrosulf® prescription is associated with numerous attempts to give up drugs: thus, the quantity of NSAIDs prescribed was reduced by two-thirds when Chondrosulf® was re-prescribed by a specialist (1.2 *vs* 3.8 DDD), which corresponded as a percentage to an NSAID prescription rate of 18% when Chondrosulf® was first prescribed and 7.2% when re-prescribed. The figures obtained in respect of GPs were comparable (18.1% and 10.8%).

The overall annual cost of consultations and treatment for patients treated with Chondrosulf® averaged, for the national health insurance, FF 955 *vs* FF 920 in the 'other medicines' group. The cost involved in Chondrosulf® treatment was offset by a reduction in expenditure on kinesitherapy and combined prescriptions of gastroprotective medicines.

Lastly, the second aim of the study was to check to what extent Chondrosulf® had been prescribed in accordance with A.M.M. (Autorisations de Mise sur le Marché) requirements and the methods laid down by the Transparency Committee. We found these requirements to have been fulfilled, since the average dose was 1200 mg/day, the average length of a prescription between six and eight weeks, and the interval between two treatments fifty days.

At the end of this wide-ranging analysis of databases, the authors have concluded that day-to-day practice, in the case of both GPs and specialists, confirms the results of random clinical studies in showing that Chondrosulf® administered for several weeks at a daily dose of 1200 mg, makes it possible to reduce combined prescriptions of NSAIDs without any extra charge to national health insurance.

Reference

1. Morreale P, Manopulo R, Galati M, Boccanera L, Saponati G, Bocci L. Comparison of the anti-inflammatory efficacy of chondroitin sulfate and diclofenac sodium in patients with knee osteoarthritis. *J Rheumatol* 1996; **23:** 1385–1391.