

## First drug to treat arthrosis: the result of Italian research

*Milan, 30 January 2001* - **It is called glucosamine sulphate, and is the result of Italian research: this is the substance which has - for the first time ever - shown signs of checking the progress of arthrosis. The publication in vol. 357 of the Lancet (27 January 2001) of the results of a three-year study carried out in Belgium opens the way to a genuine revolution in the treatment of a degenerative disease of the joints which afflicts around 4 million people in Italy and some 12% of the world's population. The drug has the ability to stop the process of 'wear and tear' on the joints - in the elderly, who are seriously affected by this problem, in those whose work activities put them at risk of arthrosis, and in athletes. The real possibility of finally being able to combat arthrosis - and not simply to relieve the symptoms - now also offers a considerable opportunity for savings: bringing down the costs arising from invalidity due to the disease means reducing the item which weighs most heavily on national health expenditure.**

Glucosamine sulphate is a natural substance, an amino sugar normally present in the body. It is found chiefly in the joints, the sinovial fluid, the tendons, the ligaments and the muscles, but also in the cardiac valves, the eye, the blood and the gastrointestinal and respiratory tracts. "Glucosamine is normally synthesised from glucose," explains Professor Lucio Rovati, who lectures at the University of Parma's Pharmacological Clinic, "but in arthrosis there is a metabolic defect in its biosynthesis, particularly in the assembly and production of proteoglycans, the main constituents of joint cartilage, which provide biomechanical properties such as elasticity and shock absorption. In this situation the exogenous contribution of glucosamine sulphate compensates for the lack of what is normally produced by the body." The drug based on this natural substance had previously been developed in the early 1980s at Rottapharm Laboratories in Monza, but only now, after the Belgian study and its publication in the Lancet, has its major importance been acknowledged. Today, glucosamine sulphate is actually the only product which has been shown to be able to stop the advance of arthrosis. Until now, nothing was effective against the progressive destruction of cartilage and joint damage; the only possibility was that of giving the patient symptomatic medication to relieve the pain and to restore function, even partially, in the damaged part with, however, the risk of accelerating its anatomical progress. This is why the presentation of the study, co-ordinated by Professor Jean Yves Reginster of the University of Liège, in Belgium, to the scientific community, was greeted with enthusiasm and is rapidly being communicated around the world. "Osteoarthrosis is a disease with a tremendous social impact," emphasised Tim McAlindon, a rheumatologist from the University of Boston, in the notes published in the Lancet commenting on the study. "NSAI cause numerous undesirable side effects, and may actually aggravate the process of the osteoarthrosis. Valuable resources have been used to develop drugs of this class, but little has been done to search for drugs which arrest the progress of arthrosis... The results of this study may change the situation entirely." The study was conducted on 212 patients with arthrosis of the knee; 106 of them were given 1500 mg of glucosamine sulphate per day for three years, and the other 106 patients were given placebo. At the end of the study, all the participants underwent radiographic examination of the knee, with results which were immediately obvious: on average, those who had received the drug showed arrest of the progress of the disease, evidenced by absence of narrowing of the joint space and reduction in painful symptoms and disability verified by questionnaires. In those who had not taken glucosamine sulphate, on the other hand, the situation had deteriorated: there was an average narrowing of the joint space by 0.31 mm, a clear sign of cartilage loss, and worsening of symptoms.

The result appears to be extremely important both for patients and for society as a whole. "Rheumatic diseases cause dramatic deterioration in patients' quality of life," explains Dr Augusto Zaninelli, scientific co-ordinator of the SIMG (the Medici Italian Society of General Medicine), "because the rheumatic patient, in addition to purely clinical problems, sometimes presents with severe psychological problems. Most people do not accept the illness, but see it as a handicap and are ashamed of it: they end up by withdrawing into themselves, tend to become isolated, to have no confidence in the future, and reach the point where they are suffering from true depression. This is why it is so important that the possibility of slowing arthrosis with glucosamine sulphate, a drug which has no side effects, should be scientifically demonstrated. And it is also important that this is a wholly Italian discovery, proof of how we, in this country, can also reach remarkable levels of research."

"The social costs of arthrosis are very high," adds Dr Bianca Canesi, President of the CRO (Association of Hospital Rheumatologists). "Every year in Italy the total expenditure associated with the disease exceeds 13 thousand billion lire, of which almost 11 thousand represent compensation for invalidity, 944 are for outpatient care, 859 for drugs, 686 cover compensation for illness and 224 cover hospital stays."