

I.O.I.S. Lausanne 2017

Company Interest Symposium (Eye Pharma)

High-bioavailability Curcumin antiinflammatory effect and non-infectious uveitis: new therapeutic perspectives.

Curcumin is the yellow pigment and the active compound obtained from the dried root of Turmeric (*Curcuma longa* L., a member of the *Ginger* family), the most popular spice of the Indian cuisine and a major ingredient of curry blend powders. In Western diet, turmeric is frequently used as a food additive to flavor or color powders, mustards, butter and cheese. Turmeric has a long history of medicinal use in India, and because it may be beneficial for many pathological conditions, it is used as a remedy like a “panacea”. Curcumin (diferuloylmethane) showed, in recent studies, a wide spectrum of biological actions including, anti-inflammatory, anti-oxidant, anti-cancer, anti-mutagenic, anticoagulant, anti-angiogenic, anti-diabetic, anti-infective properties, confirming most of the indications in traditional medicine. As a result, Curcumin emerged as one of the main natural anti-inflammatory drugs, with both a direct and a genomic activity on regulation of proinflammatory enzymes, inflammatory transcription factors and inflammatory cytokines. Based on the research, Curcumin modulates the inflammatory response by down-regulating the activity of cyclooxygenase-2 (COX-2), lipoxygenase and inducible nitric oxide synthase (iNOS) enzymes; inhibits the production of inflammatory cytokines such as tumor necrosis factor- alpha (TNF- α), interleukin (IL) -1, -2, -6, -8, and -12, monocyte chemoattractant protein (MCP) and migration inhibitory protein. Curcumin, just like most dietary phenolics, is sparingly soluble in water, but, when formulated with phospholipids, it is embedded into their lipidic matrix that shields it from hydrolytic degradation. The rapid exchange of phospholipids between biological membranes and extracellular fluids, allows shuttling curcumin from the phospholipid carrier into the biological membranes, increasing its uptake by cells. Its biomedical potential and bioavailability, by using nanoparticles and liposomes (Phytosomes®) has been recently improved.

Pharmacologically, Curcumin does not show any dose-limiting toxicity when it is administered at doses of up to 8 g/day for three months.

Curcumin showed beneficial effects on several ocular diseases, such as chronic anterior uveitis, diabetic retinopathy, glaucoma, age-related macular degeneration, and dry eye syndrome.

Regarding ocular inflammation, Allegri showed that the treatment of more than 100 patients with phospholipidic-Curcumin (600mg twice a day) in combination with conventional therapy was able to decrease more than 80% relapses in subjects suffering from recurrent anterior uveitis mainly of herpetic, autoimmune and inflammatory origin. In this study, some months after the Curcumin-treatment beginning, a significant improvement in symptoms associated with relapses, like ciliary pain, blurred vision, hyperemia and aqueous humor cells was observed in 42% of patients and only 8% of them required additional treatments because of worsening of uveitis.

Among the different etiological groups, the autoimmune group patients proved to be more sensitive to the treatment with phospholipidic-Curcumin.

These results provide the rationale to a new study with a control group on the anti-inflammatory and anti-cystoid macular edema effectiveness of this product in HLA B-27-associated uveitis, which represents the most common type of anterior uveitis (75% of total uveitis) in our countries. We will check if that additional treatment will decrease anterior uveitis recurrences in patients with HLA B-27-associated uveitis by targeting trigger factors such as inflammation (measured by means of Laser Flare Meter), and the complications related to the pathology such as cystoid macular edema (evaluated by Spectralis OCT), cataract and glaucoma overall improving the quality of life of the treated patients.

1 - Epidemiologic aspects of non-infectious uveitis.

Luca Cimino

Reggio Emilia Hospital - Uveitis Referral Center. ITALY

2 - Overview of HLA B 27-related uveitis: clinical aspects.

Ilknur Tugal-Tutkun

Istanbul University, Dep. of Ophthalmology, Ocular Immunology and Uveitis Service. TURKEY

3 – Drugs that Reduce Relapses in HLA-B27 associated AAU.

Janet L. Davis

Miami University, Bascom Palmer Eye Institute, FL, USA

4 – Phytosome technology and high bioavailable curcumin (iPhytoone).

Paolo Morazzoni

INDENA Co., Milano. ITALY

5 – Experience with phospholipidic-curcumin in the treatment of recurrent uveitis and ongoing studies.

Pia Allegri

Rapallo Hospital Referral Center for Ocular Inflammatory Diseases. Genova. ITALY