Effects of *CURCUMA LONGA* and *GINKGO BILOBA* in the proliferation and inflammatory process in endothelial cells in vitro.

Patrícia dos Santos Azeredo[1], Claudio C. Werneck[2] and Cristina Pontes Vicente[1]

[1]Departamento de Biologia Estrutural e Funcional, Instituto de Biologia, UNICAMP, SP, Brasil.
[2]Departamento de Bioquímica e Biologia Tecidual, Instituto de Biologia, UNICAMP, SP, Brasil.

Introduction: Endothelium is the main regulator of vascular hemostasis and in normal state is anticoagulant, anti-adhesive and a barrier between blood and extracellular matrix. When endothelium is lesioned, endothelial cells began to produce pro-coagulant proteins, to express adhesive proteins, initiate an inflammatory response, and activate platelets initiating vascular thrombosis. Studies demonstrated that extracts from medicinal plants like *Curcuma Longa* and *Ginkgo Biloba,* present several preventive and therapeutic advantages demonstrating antithrombic, antioxidant, antitumoral, anti-depressive, anti-inflammatory e anti-carcinogenic properties. These compounds may be used as an alternative to treat and prevent thrombosis, but the mechanisms involved in these processes are not well described.
Methods: The objectives of the present work are to compare the effect of *Curcuma Longa* (CL) and *Ginkgo Biloba* (GB) in the proliferation and inflammatory activity of endothelial cells using cell culture of Human umbilical cord Vascular endothelial cells in the presence of different concentrations of CL or GB activated or not to an inflammatory state by TNFα.
Results: We observed that concentrations of 100µg/mL GB do not altered cellular proliferation of HUVEC treated with GB for 24 and 48 hours. The expression of P-selectin is increased by TNFα and decreased by treatment with GB. The expression of eNOS is recovered in the presence of 25µg/mL de GB. About CL, we observed that concentrations above 10 µg/mL decreased cellular proliferation and that this concentration decreases the anti-proliferative effect of TNF-α in 24 h, but this effect disappears after 48 h. The expression of P-selectin is increased by TNFα and is not recovered by CL treatment. In the case of eNOS, the expression is increased by CL and is not altered by TNFα.
Conclusions: We conclude that both GB and CL decreased proliferation of HUVEC in high concentration and that the antioxidant effect of these drugs increases the expression of eNOS in the cells. Consequently, the treatment with these drugs can be beneficial to improve the activity of the vascular endothelium after injury.