INFLUENCE OF BLOOD MICROCIRCULATION ON THE ACUTE NSAID-INDUCED GASTRIC INJURY. I. Esteban*, M.A. Rodríguez*, J.R. Aracama*, C. del Pino*, M.J. Martín**, V. Motilva**, C. Alarcón**, D. Delgado**, J.M. Herrerías**. *Servicio Central de Investigación en Ciencias de la Salud de la Universidad de Cádiz. España. **Servicio de Aparato Digestivo. Hospital Virgen de Macarena. Universidad de Sevilla. España.

Mucosal blood microcirculation has been related with NSAID-induced gastric injury. Gastric mucosal blood microcirculation is controled by several mechanisms including nitric oxide (NO) and neuropeptide Y (NPY). In order to check the implication of both mechanisms in the injuring effect of the NSAID, we have investigated their effect on the mucosal levels of NPY and cGMP, as a measure of NO functionalism.

Wistar male rats (200-250 g body weigth) have been used.The NSAID administred have been: piroxicam 20, 10 and 5 mg/Kg; sodium diclofenac 100, 50, 25, 10, 5 and 2 mg/Kg, ibuprofen 100 and 50 mg/Kg and acetylsalicilic acid 500, 300 and 100 mg/Kg. A control group treated with saline solution has also been used. After a 24 h starved period the drug has been given and 3 h later the animals were anaesthetized (pentobarbital 20 mg/Kg i.p.), the stomachs were perfused with saline solution via abdominal aorta (15 ml/min), extracted and incised by minor curvature, the mucosal gastric injury was assessed using a standard scale and the mucosa was scraped and frozen at -70ºC until it is assessed. We have determined the mucosal NPY levels and cGMP concentration.The differences between NSAID treated groups and the saline group have been determined using the Kruskall-Wallis ANOVA followed by Mann-Whitney U-test when necessary.

The results obtained show that all NSAID used (except ibuprofen) induced a significative and dose-related decrease of cGMP concentration without modifying the mucosal NPY levels. For cGMP the results were: saline (2.88 pmol/mg protein), piroxicam (20 mg/Kg 0.78, 10 mg/Kg 0.68 and 5 mg/Kg 0.63 pmol/mg protein), diclofenac (100 mg/Kg 0.21, 50 mg/Kg 0.52, 25 mg/Kg 0.79 pmol/mg protein), acetylsalicilic acid (500 mg/Kg 0.87, 300 mg/Kg 0.86 pmol/mg protein).

These results are in agreement with the hypothesis that NSAID-induced gastric damage can be related with a decrease of NO functionalism.