



Short communication

Effect of cyclooxygenase and nitric oxide synthase inhibitors on vincristine induced hyperalgesia in rats

Magdalena Bujalska, Stanisław W. Gumułka

Department of Pharmacodynamics, Medical University of Warsaw, Krakowskie Przedmieście 26/28,
PL 00-927 Warszawa 64, P.O. Box 3, Poland

Correspondence: Magdalena Bujalska, e-mail: mbujalska@gmail.com

Abstract:

The purpose of this study was to investigate the effect of cyclooxygenase (COX) inhibitors and nitric oxide synthase (NOS) inhibitors on the development of vincristine (VIN)-induced hyperalgesia. Indomethacin (IND) and celecoxib (CEX) were used as relatively selective inhibitors of COX-1 and COX-2, respectively. NOS inhibitors included the nonspecific inhibitor N^G-nitro-L-arginine (L-NOArg) and L-N6-(1-iminoethyl)lysine (L-NIL), which preferentially acts on inducible NOS, as well as 7-nitroindazole (7-NI), which is a relatively specific neuronal NO synthase inhibitor. Both IND and CEX markedly suppressed hyperalgesia, whereas all three NOS inhibitors prevented the development of hyperalgesia due to VIN administration. The results of this study suggest participation of COX-1 and COX-2 as well as iNOS and nNOS in the transmission of pain stimuli in VIN-induced hyperalgesia.

Key words:

hyperalgesia, vincristine, indomethacin, celecoxib, cyclooxygenase, nitric oxide inhibitors, rats
