by diclofenac 100 μg with a mean value of 16,1 ± 1,7 mm Hg (58%; response inhibited versus control) and the tachycardia was inhibited with a mean value of 39,4 ± 0,4 bpm (70%; response versus control). This response was reversed by naloxone pretreatment.

Microinjections of diclofenac (1 ng-1,0 μg/0,5 μl) in the periaqueductal gray matter (PAG), hypothalamus and in the preoptic area in rats dose-dependently inhibited the number of writhings. The antinociceptive effect of the drug was inhibited by naloxone, 1 mg/kg, injected s.c. 5 minutes prior to the local injection or 30 minutes after the experiment in a dosage of 50 μg/0,5 μl locally.

Conclusion: Diclofenac exerts a central, naloxone-reversible antinociceptive action in experimental animals after noxious visceral stimuli but not after somatosensory stimuli. This action is exerted from several different areas within the central nervous system, intimately involved in pain control.

P.we.327

Analgesic effect of indometacin, etofenamate and of ibuprofen applied locally in animals and man

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Analgesic efficacy of indometacin and of ibuprofen in the form of gel was evaluated in rats with the yeast-induced inflammation of one hind paw by two methods:

a) by objective measuring of the duration of the paw-lifting behavior time (Hálek and Jezdinský, 1977; Jezdinský, 1982) as a manifestation of spontaneous nociceptive reaction;

b) by assessing the degree of inflammatory hyperalgesia according to Randall-Selitto's method.

All the drugs tested were found to have a significant analgesic effect when applied either on the dorsal surface of the inflamed hind paw or on the contralateral paw. It shows the possibility of a certain resorptive effect of these drugs after their local administration. The resorptive effect of ibuprofen was proved by comparing the ibuprofen blood levels after its systemic and local administration.

Analgesic efficacy of locally applied indometacin-, etofenamate- and ibuprofen gels and ibuprofen cream in women with activated gonarthrosis was also evaluated. In these woman, prior to the application, a pronounced hyperalgesia was determined by measuring the pain-producing intensity of the pressure of a tonometer cuff acting on the knee joint both in pain threshold and in maximal pain tolerance (Jezdinský, 1982). Both these values were remarkably increased in activated gonarthrosis after the local application of indometacin- or etofenamate-containing gels, while ibuprofen gel showed no remarkable effect on this hyperalgesia in activated gonarthrosis.

On the contrary, a significant analgesic effect was proved in women with activated gonarthrosis after local application of ibuprofen in the form of cream. Also, this hyperalgesia was significantly decreased after the p.o. administration of ibuprofen and indometacin. Some degree of resorptive effect was demonstrated after the application of indometacin gel and ibuprofen cream also in women with activated gonarthrosis after the local application of these drug formulations on the contralateral knee joint only. Indometacin compared with etofenamate was significantly analgesically more active after the local administration both in animals and in man.

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