



Antinociceptive activity of sildenafil and adrenergic agents in the writhing test in mice

Mirna M. Bezerra¹, Vilma Lima², Virgínia C. C. Girão³, Rafael C. Teixeira¹, José R. V. Graça¹

¹Faculty of Medicine of Sobral, Federal University of Ceará (UFC), Geraldo Rangel 100, CEP: 62.041-040, Sobral-Ceará, Brazil

²Department of Physiology and Pharmacology, Faculty of Medicine, Federal University of Ceará (UFC), Coronel Nunes de Melo 1127, CEP: 60.420-270, Fortaleza-Ceará, Brazil

³Faculty of Veterinary Medicine, State University of Ceará (UECE), Parajana 1700, CEP: 60.740-903, Fortaleza-Ceará, Brazil

Correspondence: Mirna M. Bezerra, e-mail: mirna@ufc.br or mirnabrayner@gmail.com or mirnabezerra@yahoo.com

Abstract:

The authors investigated the antinociceptive activity of sildenafil and adrenergic agents co-administered in the writhing test in mice. The intensity of nociception was quantified by the number of writhes occurring between 0 and 30 min after stimulus injection. Nontreated groups (NT) received acid intraperitoneally (*ip*) followed by sterile saline (*ip*). Animals received (*ip*) sildenafil (2.5 or 5 mg/kg), propranolol (0.5 or 2 mg/kg), atenolol (0.05 or 2 mg/kg), prazosin (0.05 or 0.25 mg/kg) or clonidine (0.01 or 0.1 mg/kg) 30 min before acid injection. It was observed that only the largest doses of every drug inhibited the number of writhes in mice. In another series of experiments, animals were pretreated with the lower ineffective doses of propranolol, atenolol, prazosin or clonidine. After 30 min, mice also received the lower ineffective dose of sildenafil followed by acid injection. The combination of ineffective doses of propranolol, atenolol, prazosin or clonidine with sildenafil significantly inhibited the nociceptive response induced by acetic acid injection. Data obtained from these experiments showed that ineffective doses of sildenafil associated with ineffective doses of adrenergic agents provided analgesic effects in the writhing test.

Key words:

sildenafil, antinociception, pain, acetic acid, mice
