Abstract

The naked mole rat (NMR) is a fossorial rodent that has been observed to have a unique nociceptive system in comparison to others. In this study, we explored on characterization of chronic inflammation in the NMR using Complete Freund's adjuvant (CFA) and investigated the effects of dexamethasone and acetylsalicylic acid on the resulting inflammation. The NMRs were injected with 0.1 ml of CFA subcutaneously in the right hind paw, and an equivalent volume of normal saline was injected to the control group. Swelling of the injected right hind limb was observed within 24 h of injection, which involved the tibiotarsal joint, palmar surface and the digits of the injected paw. Swelling persisted for 6 weeks of experimentation and peaked between day 14 and 21. The resulting inflammation affected the mobility, stance and joint rigidity of CFA treated NMRs in comparison to the control group. Treatment of the chronic phase of the inflammation from the 11^{th} day with dexamethasone and acetylsalicylic acid showed no statistical significance in paw circumference compared to the control group, other than on a few, negligible occasions. The present data showed that CFA was able to induce chronic inflammation in the NMR, and the NMR could thus be established as a model for chronic inflammation. There is, however, need for more sensitive parameters to evaluate the effects of anti-inflammatory drugs.