Abstract

During the ageing process the enteric nervous system undergoes morphofunctional changes, such as enteric neurodegeneration. Neuronal death can be attributed to increase radicals free, and ascorbic acid (AA), known antioxidant, could minimize damage cause by oxidative stress. The objective of this study is to analyse the behaviour of morphoquantative myenteric neurons in the duodenum of adult Wistar rats with aged 90 (C90), 345 (E345) and 428 (E428) days, as well as animals of the same age who received ascorbic acid supplementation for 120 days (EA345 and EA428). Whole-mount preparations of muscle layer from the duodenum of the animals were immunostained by the method myosin V. 80 microscopic fields were quantified (14.8 mm²/animal) and measured 100 neuronal cell bodies per animal. During the aging process, there was a reduction in neuronal density in all animals groups, indicating that the effects of age were not attenuated with AA supplementation. The increase in the neuronal area of the cell bodies in 428-day-old animals proved the influence of age on this parameter. There was no observed a neuroprotective effect of AA (1 mL/g body weight) on the neuronal population myenteric myosin V immunoreactive.

Keywords
Aging, antioxidant, enteric nervous system, immunohistochemistry.