

Abstract:

The present study provides comparative quantitative data on trigeminal ganglion neurons in order to enable appropriate use of experimental animals. Quantitative analysis of 11 trigeminal ganglia of humans, 4 of vervet monkey (*Cercopithecus aethiops*) and 4 ganglia of 2 baboons (*Papio anubis*) was carried out using the model based method of stereology and total cell counts in serial sections. Mean total numbers of neurons in trigeminal ganglion were found to be in humans 123,010 (stereology); in the vervet monkey 98,073 (counts) or 101,178 (stereology) and in the olive baboon 137,250 (counts) or 153,555 (stereology). The mean total number of neurons reflects intra- and interspecies differences, as well as differences in the method of estimation. The different values of the volume density ($V(v)$) (for humans 0.67, for the monkey 0.35 and for the baboon 0.4) may be related to structural differences in the trigeminal ganglia. In humans, the mean diameter of neurons in the trigeminal ganglion was 39.6 μm ; in the monkey it was 48 μm , and in the baboon 54 μm , respectively. These specific differences found between the neurons of the human, monkey and baboon trigeminal ganglion may be related to differences in body (head) size and can help in the evaluation of data obtained from experimental animals to human studies.