CELL DEATH AND MICROGLIA IN THE DEVELOPING OPTIC TECTUM OF THE LIZARD GALLOTIA GALLOTI

Plaza-Pérez M.L. (1), Romero-Alemán M.M. (1), Arbelo-Galván J.F. (1), Castellano B. (2), González B. (2), Monzón-Mayor M.
(1) Department of Morphology, Faculty of Health Sciences, University of Las Palmas de Gran Canaria, Canary Islands, Spain;
(2) Department of Histology, Faculty of Medicine, University Autonomous of Barcelona, Spain.

It has been suggested (1) that the degenerating elements in the Central Nervous System (CNS) provide a chemotactic stimulus for ameboid microglia.

Four embryos of each developmental stage from E.30 to hatching were used in this study. The microglial population was identify by means the tomato lectin histochemistry. The paraffin sections were counterstained with toluidine blue to show the pyknotic nuclei. We have studied the relation between microglia and cell death in the developing optic tectum of the lizard Gallotia galloti. We have observed pyknotic nuclei in the grey matter at E.37 stage at the bottom of stratum griseum centrale (SGC) and concentrations of microglia associated with it. This microglial cells belong to the most immature forms and they are extended from the pial surface to the cell death area (2). Another striking observation has been the concomitant entrance of microglial cells from the ventricular lumen at the same time.

In conclusion, taking into account that E.37 stage is the peak of cell death in optic tectum (3), when presumably the synaptogenesis takes place in SGC, and the period of a great amount of microglia in the same area, we also suggest (4) that the presence of immature forms of microglia is related to developmental cell death and to removal of redundant axons.

(1) Imamoto and Leblond (1978) J. Comp. Neurol. 180:139-164.

(2) Plaza-Pérez et al. (1998) (submitted).

(3) Monzón-Mayor et al. (1987) J. Submicrosc. Cytol.19:71-76.

(4) Ashwell (1991) Dev. Brain Res. 58:1-11, Ferrer et al. (1990) Neuroscience 39:451-458, Perry et al. (1985) Neuroscience 15:313-326.

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