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Poster presentation

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Expression of p73 in the developing human subcommissural organ

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Background

The subcommissural organ (SCO) is a cerebral structure, formed by an ependymal differentiation of the third ventricle and is composed of two layers of cells: the ependymal layer in contact with the ventricular light and the hypendymal layer just below the posterior commissure (PC). The subcommissural organ (SCO) functions are associated with the circulation and composition of the CSF, which secretes glycoprotein into the CSF where the greater part is condensed and forms Reissner's fibre (RF), and the other soluble minor part in the CSF. In the human, the development of SCO is greatest during fetal life and also produces glycoprotein but does not form RF. Variations and alterations in the secretion of the SCO have been described in hydrocephalus. p73 is a complex protein with a variety of isoforms, the transactivating isoforms (TA) are able to transactivate p53 gene target and induce apoptosis, whereas the N-terminally truncated isoforms (ÄN) have anti-apoptotic activities. Immuno-blotting of the choroid plexus and cerebrospinal fluid revealed an N-glycosylated form of TAp73, which suggests that p73 may be secreted. The aim of the present work is to analyze the importance of the p73 expression during the SCO human development.

Materials and methods

Brains from 10, 12, 21, 22, weeks of gestation, three months postnatal and a 27 year old human, from the collection of the Department of Anatomy of University of La Laguna, were used. Brains were processed using the following standardized form: fixation in formaldehyde, post fixation in Bouin's fluid for 24 hours, dehydration, and paraffin embedding, thereafter were cut in three (A, B, and C) coronal and sagittal sections 10 μm thick. The A series were stained with Cresyl Violet or Klüver-Barrera. B and C series were immunohistochemically processed using p73 as primary antibody.

Results

The immunoreactive material for anti-p73 was observed at the fetal ages, and the reaction was more intense at 12 weeks in the ependymal layer. At 22 and 24 weeks of gestation the p73 immunoreactive material was observed in both cellular layers and even in the peripheral prolongation, but the intensity of the reaction decreased with respect to the first ages. At three months and 27 postnatal years the reaction is weaker than prenatal ages.

Conclusion

The greatest intensity of the reaction was observed at 10 weeks of gestation which coincides with the moment of the greatest development of the human SCO.