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论著

人胎中后期大脑额叶一氧化氮合酶阳性神经元发育的免疫组织化学观察

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摘要 摘要：目的 探讨人胎发育中后期大脑额叶内一氧化氮合酶(NOS)阳性神经元的生长发育规律。方法 采用免疫组织化学方法对人胎大脑额叶NOS阳性神经元的发育进行观察。结果 第7～8个月龄时, 大脑额叶皮质板深层NOS阳性神经元大小不一, 形态多样, 呈散在分布, NOS阳性反应较强; 在神经元之间脑组织内有膨体神经纤维分布。第9～10个月龄时, 大脑皮质板深层NOS阳性神经元胞体略大, 胞质丰富, 形态饱满, 染色深; 膨体神经纤维明显; 在皮质板浅层出现散在分布的NOS阳性神经元, 胞体呈圆形或椭圆形, 核大, 胞质少, 神经突起明显。结论 大脑额叶皮质深层NOS阳性神经元基本形成神经网络系统, 产生较高浓度的一氧化氮微环境, 有利于各种类型神经元的分化、增殖、迁移和发育。

关键词 一氧化氮合酶阳性神经元 免疫组织化学 额叶 大脑 人胎

分类号

Immunohistochemical Study on Development of Nitric Oxide Synthase-positive Neurons in the Frontal Lobe of Cerebrum of Midanaphase Human Fetus

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Abstract ABSTRACT:Objective To investigate the development of nitric oxide synthase (NOS)-positive neurons in the frontal lobe of the cerebrum of human fetus in midanaphase. Methods The positive expression of the NOS-positive neurons in the frontal lobe of cerebrum of human fetus was observed by immunohistochemistry. Results By the 7th to 8th month of gestation, NOS-positive neurons in the cortical plate of frontal lobe demonstrated themselves inequality of sizes and morphological difference in the deeper layers with interspersed distribution and increased NOS response, and the distribution of beaded nerve fiber was observed between neurons of cerebral tissues. By the 9th to 10th month of gestation, NOS-positive neurons in the deeper layers of cortical plate of frontal lobe developed slightly in size of the cell body with richer cytoplast, full shape and deeper dyeing and extrusive beaded nerve fibers, and the NOS-positive neurons scattered in the shallow layer of cortical plate presented with round or oval shape. The nucleus developed bigger but with sparse cytoplasm and clear nerve process. Conclusion NOS-positive neurons in the deeper layer of cortical plate of lobus frontal consist of largely network of neural system and produce micro-environment with higher concentration of NO, which favors the differentiation, proliferation, migration, and development of various neurons.

Key words nitric oxide synthase-positive neuron immunohistochemistry frontal lobe cerebrum human fetus

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