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## TITLE

### **THE FEATURES OF EXPRESSION OF S-100 IN THE FORMATION OF THE MEDIAL LONGITUDINAL FASCICULUS AT UTERO DEVELOPMENT OF THE FETUS**

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## ABSTRACT

**CONTEXT:** The medial longitudinal fasciculus is a group of pairs of nerve fibers that connect between a nuclei of III, IV and VI cranial nerves, vestibular nucleus and the nucleus of the reticular formation, and extends from the midbrain. As usually the cellular elements is absent in the postnatal period of human development at the level of the medulla oblongata in the structure of the medial longitudinal fasciculus. S-100 protein as fetal marker of astrocytic glia was used for determination of the glial cells in the medial longitudinal fasciculus.

**OBJECTIVE:** Comparing of expression of the S-100 in medial longitudinal fasciculus of the medulla oblongata in human fetuses of different gestational age.

**PATIENT (S):** 205 human fetuses from 10 to 40 weeks of fetal development, that died from causes unrelated to the brain or spinal cord diseases in relatively healthy mothers.

**INTERVENTION (S):** The expression of S-100 in the immuno-histological preparations of the medulla oblongata at different gestational periods.

**MAIN OUTCOME MEASURE (S):** expression of S-100.

**RESULTS** We found the strong expression of S-100 protein in the medial longitudinal fasciculus on medulla level in human fetuses from 10 to 15 weeks of gestation (66% stained cells), moderate expression of S-100 in human fetuses from 17 to 26 weeks of gestation (45% stained cells) and the weak expression of S-100 in human fetuses from 28 to 31 weeks of gestation and the lack of positive response of the S-100 in human fetuses from 33 weeks gestation (15% stained cells).

**CONCLUSIONS** The changes of protein expression S-100 was obviously linked to the high density of glial cells in the area of the medial longitudinal fasciculus in humans fetuses in the early stages of fetal development, decreasing their number to 31 weeks' gestation, and their absence after 33 weeks of gestation.

## INSTITUTE

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