Session E-P02 - Sensory disorders (eye, ear, pain)

E-P02.01 - Spectrum of clinical phenotypes associated with *PAX6* missense mutations

Itinerary

June 17, 2018, 9:00 AM - 5:45 PM	Poster Area

Authors

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Disclosures

T.A. Vasilyeva: None. **V.V. Kadyshev:** None. **A.A. Voskresenskaya:** None. **O.A. Shagina:** None. **A.V. Marakhonov:** None. **R.A. Zinchenko:**None.

Abstract

Introduction: Mutations of the *PAX6* gene cause several phenotypes characterized by complex of ocular malformations varying in expressivity and combination. The most part of loss-of-function (LoF) mutations causes aniridia (absence of the iris among other signs) or closely related phenotypes, while the majority of missense mutations could lead to several other conditions. To make steps towards investigation of phenotype-genotype correlations, the clinical picture of 6 patients with different missense mutations in the *PAX6* gene is analyzed. Materials and Methods: A cohort of patients with *PAX6* missense mutations underwent ophthalmological examination and molecular diagnosis. Results: Two mutations cause aniridia phenotype, three others result in closely related phenotypes. A single missense is associated with iris damage different from aniridia (see Table). A carrier of the mutation also has retinal glial layer atrophy, macula hypoplasia, abnormal retinal pigment epithelium structure, nystagmus and achromatopsia. Conclusions: A significant variety of clinical picture might be partially explained by different etiopathogenetic mechanisms related to the location and peculiarities of affected amino-acid residue. Functional consequences of missense mutations are to be tested by at least *in vitro*analysis. This work is partially supported by RFBR grant 17-04-00475.

Phenotypes of PAX6 missense mutations

Mutations	Phenotypes
p.(G51R)	Iris hypoplasia, cataract, optic nerve hypoplasia
p.(G7R)	Partial aniridia, cataract, keratopathy, fovea hypoplasia, nystagmus
p.(Q47R)	Partial aniridia, keratopathy, fovea and optic nerve hypoplasia, nystagmus
p.(K55T)	Complete aniridia, cataract, keratopathy, fovea hypoplasia, nystagmus
p.(G72S)	Iris hypoplasia, anterior synechiae, nystagmus, retinal glial layer atrophy, macula hypoplasia, abnormal retinal pigment epithelium structure, achromatopsia
p.(S119R)	Complete aniridia, nystagmus, cataract, fovea hypoplasia