ABSTRACT

This bachelor thesis is an overview of the most important developmental and molecular milestones in the embryonic development of the human head and face and it brings a comprehensive overview of the latest knowledge in developmental and molecular biology of craniofacial structures with focus on the fusion of facial processes. During early embryogenesis the most important developmental changes take place in the cranial area. This period is the most susceptible period for defects and malformations formation. The most common defect in the craniofacial region is the cleft lip and/or palate occurring alone (non-syndromic) or as a part of a syndrome (syndromic). The most common reason of the cleft formation is the insufficient proliferation in the facial processes and palatal shelves, which is caused by the incorrect expression of genes or receptors of these genes whose function can be studied on the mouse and chick models. The present thesis summarizes also the knowledge of etiology of orofacial clefts in the context of new findings about the fusion of facial processes and ossification in the cleft area. Improvement of our knowledge of facial development and defects associated with it is important for accurate prenatal diagnosis and successful treatment of patients, whose problems may not only be aesthetic but also life-threatening.