Abstract

Any pathological interference with normal vascular development of placenta may have a critical impact on fetal growth and development. The proliferation and differentiation of several cell types play a very important role in the vascular system of placenta. The main factors taking part in the vascular development of placenta include cell elements (e.g. trofoblast, stromal chorion cells, haemangiogenic progenitors), the extracellular matrix, growth factors and cytokines (e.g. VEGF, PlGF, Ang-1,2 and bFGF). The extrinsic factors may also influence the partial oxygen pressure, nutritients availability, and/or the blood perfusion in placenta. Placental ischaemia leading to the worsening of uteroplacentar perfusion is the most common cause of the intrauterine growth retardation (IUGR). The IUGR development is then the result of insufficient prolongation, branching, and dilatation of capillary loops during the formation of terminal villi. Published studies focusing on growth factors in placentas from physiological pregnancies and pregnancies with IUGR do not give clear results. This BSc. Thesis is a review focused on up-to-date-known data concerning changes in placental angiogenesis and their impact on IUGR.

Key words: placenta, angiogenesis, IUGR, pregnancy