## 119. HISTOPATHOLOGICAL PROFILE OF THE PLACENTA IN EARLY-ONSET VS. LATE-ONSET PREECLAMPSIA

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**Introduction.** Preeclampsia (PE) is a major hypertensive disorder specific to pregnancy, with a significant impact on maternal and fetal health worldwide. It is characterized by the presence of proteinuria and newly developed hypertension, defined by systolic blood pressure values ≥140 mmHg and diastolic blood pressure ≥90 mmHg. According to the gestational age at onset, PE is classified into early-onset preeclampsia (EOPE, <34 weeks) and late-onset preeclampsia (LOPE, ≥34 weeks), which are considered distinct entities from a morphopathological perspective.

**Aim of study.** The present study aimed to assess the placental histopathological profile in EOPE and LOPE, with particular emphasis on vascular and villous changes.

**Methods and materials.** The present review is grounded in the analysis of seven peer-reviewed articles identified through database searches in PubMed and Google Scholar using the keywords "preeclampsia," "early-onset," and "late-onset." Additionally, relevant studies indexed in the National Bibliometric Instrument (IBN) were included to ensure comprehensive coverage of the research topic.

**Results.** In EOPE, the underlying pathophysiological mechanism is characterized by insufficient trophoblastic invasion and inadequate remodeling of the spiral arteries. Consequently, the smooth muscle layer and internal elastic lamina persist, maintaining narrowed vascular lumina and increased vascular resistance, which progressively lead to endothelial injury, fibrinoid necrosis, and acute decidual atherosis. These lesions may further complicate with thrombosis and vascular obliteration, ultimately resulting in severe uteroplacental malperfusion and chronic fetal hypoxia. Histopathologically, EOPE is associated with extensive placental infarctions, increased perivillous fibrin deposition, and numerous syncytial knots, which reduce the effective maternal–fetal surface area for gas and nutrient exchange. In contrast, in LOPE, vascular lesions primarily consist of moderate or minimal intimal thickening and focal hyalinization, leading to limited luminal narrowing and comparatively less pronounced uteroplacental malperfusion than in EOPE. The histopathological profile in LOPE typically demonstrates limited or absent placental infarctions and moderate villous alterations.

**Conclusions.** The histopathological profile in the different forms of preeclampsia is distinct, being considerably more aggressive and progressive in the early-onset form, reflecting the involvement of different pathophysiological mechanisms responsible for the development of chorionic villous alterations and changes in maternal–fetal vascularization.

**Keywords.** Preeclampsia, early-onset, late-onset.

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