

UNIVERSAL INSIGHTS CONFERENCE ON SCIENCE AND SOCIETY

international scientific conference

MULTIORGAN MORPHOLOGICAL PROFILE OF THE FETUS IN INTRANATAL DEATH ASSOCIATED WITH PREECLAMPSIA - A PERINATAL AUTOPSY PERSPECTIVE

Jabborova Munisxon Abdubanon qizi

Assistant, Department of Obstetrics and Gynecology
Fergana Public Health Medical Institute

Annotation. *This thesis characterizes the multiorgan morphological profile of the fetus in cases of intranatal death complicating preeclampsia. Systematic perinatal autopsy and histopathological analysis reveal stereotypic patterns of hypoxic-ischemic injury across the brain, lungs, liver, and kidneys reflecting the chronic and acute components of placental insufficiency.*

Keywords: *preeclampsia, perinatal autopsy, hypoxic-ischemic encephalopathy, villous maturation defect, meconium aspiration syndrome, hepatic congestion, renal tubular injury, placental abruption, intrapartum asphyxia, morphological diagnosis.*

Today, preeclampsia is recognized by the World Health Organization as the primary obstetrical etiology underlying one in four perinatal deaths, based on multicountry data encompassing nearly 8,000 enrolled pregnancies across Argentina, Egypt, India, Peru, South Africa, and Vietnam. Intranatal fetal death, defined as fetal demise occurring during the active process of labor and delivery, represents a clinically and pathologically distinct category from antepartum stillbirth, determined by specific hemodynamic, mechanical, and hypoxic mechanisms that require dedicated morphological characterization through standardized perinatal autopsy protocols to enable accurate cause-of-death determination and meaningful prevention research.

UNIVERSAL INSIGHTS CONFERENCE ON SCIENCE AND SOCIETY

international scientific conference

Systematic perinatal autopsy of fetuses dying during labor in the context of preeclampsia reveals a characteristic and reproducible morphological profile that reflects the superimposition of acute intrapartum asphyxia upon a background of chronic uteroplacental insufficiency. At the placental level, the most consistent histopathological findings include extensive villous infarction affecting more than ten percent of the parenchymal mass, accelerated villous maturation with syncytial knot formation exceeding thirty percent of terminal villi as a reflection of chronic hypoxia, widespread perivillous fibrinoid deposition disrupting the syncytiotrophoblast-intervillous blood interface, and retroplacental hematoma formation indicative of placental abruption, which occurs as a particularly dangerous intrapartum complication of sustained severe hypertension.

Examination of the fetal brain in these cases discloses patterns consistent with acute hypoxic-ischemic encephalopathy superimposed upon chronic hypoxic injury. Neuronal eosinophilia, cytoplasmic shrinkage, and nuclear pyknosis affecting the hippocampal neurons, basal ganglia, and cerebral cortical layers document the irreversible cellular consequences of intrapartum oxygen deprivation. The pulmonary parenchyma demonstrates meconium aspiration syndrome in a substantial proportion of cases, characterized by meconium-laden alveolar macrophages, airway obstruction, and chemical pneumonitis, reflecting the reflexive fetal response to acute and severe intrapartum hypoxemia. Hepatic morphology reveals pericentral sinusoidal congestion, hepatocyte vacuolization, and focal necrosis consistent with hypoxic hepatopathy and passive venous congestion arising from acute right heart failure secondary to hypoxemic myocardial depression. Renal histology demonstrates proximal tubular epithelial swelling, luminal protein casts, and early tubular necrosis reflecting fetal hypoperfusion and the hyperviscosity state associated with chronic polycythemia secondary to sustained intrauterine

UNIVERSAL INSIGHTS CONFERENCE ON SCIENCE AND SOCIETY international scientific conference

hypoxemia. Integration of these multiorgan findings into a standardized and reproducible perinatal autopsy protocol provides the essential scientific basis for establishing the precise mechanism of intranatal death in each individual case.

Standardized perinatal autopsy in preeclampsia-associated intranatal death reveals a consistent multiorgan hypoxic-ischemic morphological profile. Implementation of systematic autopsy protocols is essential for elucidating death mechanisms and informing future preventive obstetric interventions.

REFERENCES:

1. Lawn J.E., Blencowe H., Pattinson R., Cousens S., Kumar R., Ibiebele I. Stillbirths: Where? When? Why? How to make the data count? // Lancet. - 2011. - Vol. 377, No. 9776. - P. 1448-1463.
2. Kingdom J.C., Kaufmann P. Oxygen and placental villous development: origins of fetal hypoxia // Placenta. - 1997. - Vol. 18, No. 8. - P. 613-621.
3. Roberts J.M., Hubel C.A. The two-stage model of preeclampsia: variations on the theme // Placenta. - 2009. - Vol. 30, Supplement A. - P. S32-S37.
4. Redman C.W.G., Sargent I.L. Latest advances in understanding preeclampsia // Science. - 2005. - Vol. 308, No. 5728. - P. 1592-1594.