3. AUXILIARY DIAGNOSTIC METHODS FOR HYDATIDIFORM MOLE: A CONCISE REVIEW

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Introduction. Hydatidiform moles (HMs) are premalignant conditions within gestational trophoblastic disease (GTD). Early diagnosis is crucial due to the risk of malignant transformation, with neoplasia risks for complete hydatidiform mole (CHM) at 15-20% and for partial hydatidiform mole (PHM) at 0.5-1%.

Aim of study. This research aims to evaluate advanced diagnostic methods in hydatidiform mole patients to prevent recurrences and gestational trophoblastic neoplasia.

Methods and materials. A bibliographic study was conducted using articles from databases (NCBI, PubMed, Nature, Medscape, MDPI) published between 2013-2023. Key terms included gestational trophoblastic disease, hydatidiform mole, complete and partial hydatidiform mole, genotyping, immunohistochemistry p57.

Results. Routine microscopic evaluation, even by experienced pathologists, misclassified 20% of cases. Morphological assessment limitations and overlap with other entities necessitate an algorithmic approach, combining p57 immunohistochemistry and molecular genotyping. P57, a paternal imprinted gene product, is absent in CHMs and early forms due to lacking maternal genetic contribution. In contrast, PHM and nonmolar pregnancies exhibit diffuse p57 expression. However, it cannot distinguish PHM from nonmolar pregnancies, necessitating genotyping. STR genotyping excels in distinguishing CHM, PHM, and nonmolar pregnancies by discerning androgenetic diploidy, diandric triploidy, and biparental diploidy. Other techniques (karyotyping, DNA ploidy analysis, FISH) fail to distinguish maternal from paternal contributions.

Conclusion. Auxiliary methods enhance hydatidiform mole diagnosis, yet challenges persist. P57 immunohistochemistry struggles to differentiate PHM from nonmolar pregnancies. Molecular genotyping faces difficulties in mosaic conceptions and rare trisomies, potentially leading to misclassification. Further research is needed to refine these techniques and overcome current limitations.