VULVAR CANCER ASSOCIATED WITH RENAL TRANSPLANTATION

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Introduction. Chronic immunosuppression, required after renal transplantation, significantly increases the risk of developing vulvar cancer. This type of cancer is frequently associated with persistent HPV infection and tends to have a more aggressive clinical course than in the general population. Identification of molecular markers may contribute to the development of personalized therapeutic strategies and the optimization of immunosuppressive regimens.

Materials and Methods. A narrative literature review was conducted to synthesize current evidence on vulvar cancer in renal transplant recipients, examining relevant studies identified through electronic databases such as *PubMed, Scopus*, and *Web of Science*.

Results. Most tumors examined in the context of renal transplantation were HPV-positive, predominantly genotypes 16 and 33. Overexpression of the p16 protein was observed in more than two-thirds of patients, indicating an HPV-dependent mechanism. The proliferative index Ki-67 was elevated, correlating with high-grade histology and rapid disease progression. Activation of the *PI3K/AKT/mTOR* signaling pathway was more frequent in patients treated with calcineurin inhibitors, and *PD-L1* expression was detected in 30–35% of tumors, suggesting a potential role for immunotherapy, although limited by the risk of graft rejection. Conversion of the immunosuppressive regimen to mTOR inhibitors was associated with better tumor control and reduced recurrence. In addition, *PTEN* loss correlated with *PI3K/AKT/mTOR* pathway activation and aggressive histological features. Integration of these markers allowed individualized therapeutic approaches, including immunosuppression adjustment, targeted therapy, and radiotherapy planning. Data analysis showed that approximately 40% of patients with multiple positive molecular markers experienced recurrence within 12 months, compared to only 15% of those without marker combinations, indicating a significantly increased risk of rapid disease progression.

Conclusions. Vulvar cancer post-renal transplantation exhibits a distinct molecular profile, dominated by HPV-dependent mechanisms and *PI3K/AKT/mTOR* pathway activation. Systematic molecular testing may guide personalized therapy and immunosuppressive management, highlighting the importance of a multidisciplinary oncologic and transplant approach.

Keywords: vulvar cancer, renal transplantation, molecular markers.