

## **Prevalence and Impact of Vulvar Lesions Diagnosed Prior to Vulvar Squamous Cell Carcinoma: A Population-Based Cohort Study**

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**Objective:** To systematically explore vulvar pathology diagnosed prior to vulvar squamous cell carcinoma (VSCC), as well as the association with tumor characteristics, stage and survival outcome, with the aim of improving vulvar cancer prevention strategies.

**Methods:** VSCC diagnosed between 2005 and 2019 were identified from a population-based cohort provided by the Dutch Nationwide Pathology Databank (Palga). Pathology reports were reviewed to identify vulvar pathology diagnosed before primary VSCC. Data on treatment, tumor stage and survival were collected from the Netherlands Cancer Registry. Prior vulvar pathology was correlated to tumor characteristics and stage. Cox's proportional hazards model was used to assess the impact of clinicopathological variables on survival.

**Results:** A total of 1036 VSCC patients were identified, of whom most (73%) had no prior biopsy-confirmed vulvar pathology. High-grade squamous intraepithelial lesion (HSIL) and differentiated vulvar intraepithelial neoplasia (dVIN) were diagnosed prior to VSCC in only 8% and 2% of cancer patients, respectively, while adjacent HSIL and adjacent dVIN were reported in 35% and 22% of surgical VSCC resection specimens, respectively. The remaining 17% had a benign vulvar pathology diagnosis prior to cancer. Patients showed advanced staged tumors in 15% and 9% of patients with prior HSIL and dVIN, respectively, as compared to 32% in patients without prior vulvar pathology ( $p < 0.001$ ). There was no independent association between prior vulvar pathology and survival outcomes.

**Conclusion:** The vast majority of VSCC patients were not preceded by a pre-malignant lesion or other benign vulvar pathology, although such lesions were frequently identified adjacent to VSCC in resection specimens. Patients without prior vulvar pathology showed more advanced-stage tumors, which may contribute to less favorable outcomes.