Introduction/Background* Molecular landscape and carcinogenesis of vulvar squamous cell carcinoma (VSCC) have been poorly explored and lack a biomarker-driven targeted therapy. In this non-systematic review we aimed to summarize findings of studies exploring molecular landscape of VSCC.
Methodology Key word search was conducted (PubMed, Scopus) in January 2021, using the terms ("vulvar" and "cancer" or "carcinoma") and ("molecular" or "genomic" or "mutation"). Observational studies evaluating molecular alterations in VSCC were deemed eligible. Pre-specified data were extracted from the selected articles, including the number of samples analyzed, DNA sequencing technique, number and frequency of identified mutations, HPV prevalence and prognostic data.
Result(s)* Fourteen studies published between 2005 and 2020 were identified, including a total of 747 VSCC samples. Selected studies were highly heterogeneous in terms of DNA sequencing and HPV testing strategies and included small samples. Twelve studies performed next generation sequencing (NGS), nine of whom used targeted approach, two used whole exome sequencing and one used whole genome sequencing. The two remaining studies used multiplex ligation-dependent probe amplification assay and Sanger sequencing.

The most frequently studies and mutated genes were *TP53* and CDKN2A, followed by *PIK3CA*, *HRAS* and *PTEN* (table 1). Evidence on genomic differences between HPV-associated and -independent VSCC is particularly scarce and variable between studies. Only a single, targeted NGS study showed notorious differences in molecular profiles based on HPV status. Accumulated evidence indicates that in HPV-associated VSCC more frequently involves PI3K/AKT/mTOR pathway, involving *HRAS*, *KRAS*, *PIK3CA*, *KMT2D*, *PTEN* and *FBXW7* mutations. On the other hand, HPV-independent VSCC involve alterations in *TP53*, *CDKN2A*, *CCND1*. The prognostic role of molecular alterations in VSCC was assessed in seven articles, with discordant results. Some articles suggest that *TP53* alterations are associated to worse prognosis in patients with VSCC, particularly when combined with *PIK3CA*, *HRAS* or *CDKN2A*.
Conclusion* Limitations and heterogeneity of available molecular series contribute to a limited view of the molecular landscape of VSCC. Prognostic or therapeutic roles of identified mutations and pathways in VSCC remain to be elucidated. Large-scale, genome or exome-wide studies with robust HPV testing are necessary to expand the knowledge on molecular landscape in VSCC.

Abstract 449 Table 1 Overall frequency of most studied mutations in the included studies

Gene	N	Number of VSCC assessed	Overall frequency	Frequency range	Number of articles
TP53	387	711	54,43%	33-79%	13
PIK3CA	112	711	15,75%	0-34%	13
HRAS	60	677	8,86%	0-28%	11
CDKN2A	156	610	25,57%	6-36%	9
PTEN	26	646	4,02%	0-6%	9

471 VULVAR AND PERINEAL SURGERY : DOES FLAP REPAIR DEFECT STRATEGY ALLOW TO BALANCE FREE MARGIN AND POST-OPERATIVE MORBIDITY?

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Introduction/Background* Vulvar and perineal (VP) surgery has to combine surgical efficiency with free margin in an mechanical strained anatomical area with high vulnerability to infectious disease.

The size of excision as well as the anatomical restitution strategy justifies simple or complex associated reconstruction techniques..
Methodology All women who underwent VP surgery from November 2014 to August 2020 in our institution were included.

The cohort was divided into 3 groups : Groupe 0 (G0) : no reconstruction, Groupe 1 (G1) : fasciocutaneous flap, Groupe 3 (G3) pediculed or perforator flap.

Main objective was the margin status specified as follow : Safe Margins (SM) $\geq$ 8mm, Free Margins (FM) < 8mm and Involved Margins (IM).

Secondary objective were tumor and excision size, and postoperative morbidity.

Data was extract from Excel™ database. Quantitative variables were analyzed using the Chi-square test of Pearson.
Result(s)* Twenty-nine consecutive patients (29) were enrolled in the survey : 72,9% invasive disease (main pathological subtype Squamous Cell Carcinoma).

Twelve patients had a radical vulvectomy (41,4%) and 10 superficial vulvectomy (34,5%).

In group 1, V-Y flap was the most used flap (50%), Lotus Flap in group 2 (58,3%). The others flaps were DIEP, Gracilis, Taylor and rotative flap.

Twelve patients achieved SM (41%), 9 patients SM (31%) without any significant difference between the 3 groups (p= 0.68).

Among the 8 patients with IM (27%), 6 presented with Paget disease, no patient presented with invasive disease and IM in Group 2.

Median size of tumor was similar between the groups (2,5cm vs. 2,8cm, p = 0,76, but excision size seems to be superior in the group 2 (9,5cm vs 6.6cm, p = 0,09).

Clavien Dindo Grade 3 complications occurred in 11 cases (37,9%) and grade 2 in 5 cases (17,2%) without significant difference between G1 and G2.

Main complication was wound dehiscence (48,3%) and 3 patients had partial flap necrosis.
Conclusion* Vulvar and perineal surgery should include the use of a wide range of surgical repair options from local flap to complex reconstruction techniques in order to offer the best compromise between quality of the margins and postoperative morbidity.