

Vulva

1. Introduction

1.1 General Information and Aetiology

The external genital organs include the mons pubis, labia majora, labia minora and clitoris. The area containing these organs is called the vulva (Figure 1).

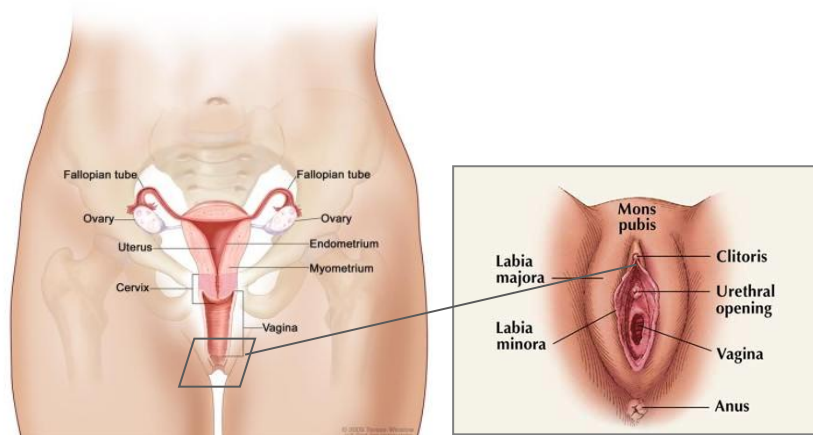


Figure 1. Anatomy of the Vulva (Source: National Cancer Institute*)

*<http://www.cancer.gov/cancertopics/pdq/treatment/vaginal/patient/>

In the Flemish Region, for the period 2004-2007, vulvar cancer accounts for about 5% of gynaecological tumours. Squamous cell carcinoma of the vulva are the most frequent neoplasms at these sites [1,2]. In the Flemish Region (2004-2007), squamous cell carcinoma represent 87% of vulvar cancers.

Human papilloma virus (HPV) infection, particularly genotypes HPV 16 and 18, is pointed as one of the major risk factors in developing an epithelial (pre-)malignant tumour in the vulva [2]. Other identified risk factors are tobacco consumption and well-known precursor lesions such as vulvar intraepithelial neoplasia, lichen sclerosis and chronic granulomatous vulvar disease.

Usually solitary, vulvar squamous cell carcinoma appears mainly on the labia minora or majora, while clitoris and perineal localisation are less frequently affected [1].

Women of 70 years and older, who often have a less intensive gynaecological follow-up than younger women, suffer predominantly of vulvar cancer. However, an increase in prevalence among younger patients has been noticed [3]. This observation leads to the following division [2]:

- Cancers related to intraepithelial neoplasia caused by HPV infection, occurring in young women;
- Cancers caused by vulvar non-neoplastic epithelial disorders due to chronic inflammation, afflicting elderly women.

Regional spreading of the disease involves inguinal and femoral nodes, while extension to pelvic nodes is considered as distant metastasis [4]. Prognosis depends on depth of the disease and resection margins and notably on the extent of the disease, recurrence in the groin carrying a very high mortality. Appropriate management of groin lymph nodes appears therefore to be one of the most important factors in reducing mortality [2,4]. One study notes a five-fold increased risk of recurrence in patients with unilateral lymph node involvement compared to node negative patients, and a 17 times higher risk in bilateral lymph node invasion [5]. General 5-year relative survival is reported to range from 70% to 76% [2,6].

1.2 Diagnosis and Treatment

Following international guidelines, beside macroscopical manifestation of the disease, a biopsy (and exfoliative cytology) should always confirm the diagnosis [2,4]. Moreover, a colposcopy of the cervix and vagina, due to the frequent association with other squamous intraepithelial lesions, is indicated [4]. It is a way to confirm the diagnosis and to determine accurately the morphology and the location of the tumour.

CT-scan and MRI/PET-scan of the pelvis are routinely performed when local or distant node involvement is suspected and can also help to assess more precisely the extension of the tumour and the state of adjacent pelvic organs [4,7,8]. X-rays of the chest are useful to evaluate lung involvement [4]. Abdominal and/or transvaginal echography which likely offer more specific imagery can also complete the diagnostic process [7]. Urethrocystoscopy or rectoscopy are not standard, but can be performed in case of bigger lesions and to evaluate organ involvement in locally extensive disease.

Because of its important psychological impact, treatment tends to be as conservative as possible. Moreover, seeing that these cancers affect more frequently older patients, the treatment has to be

adapted to the general state of the person. Vulvar cancer management is summarized in Figure 2 [4,9].

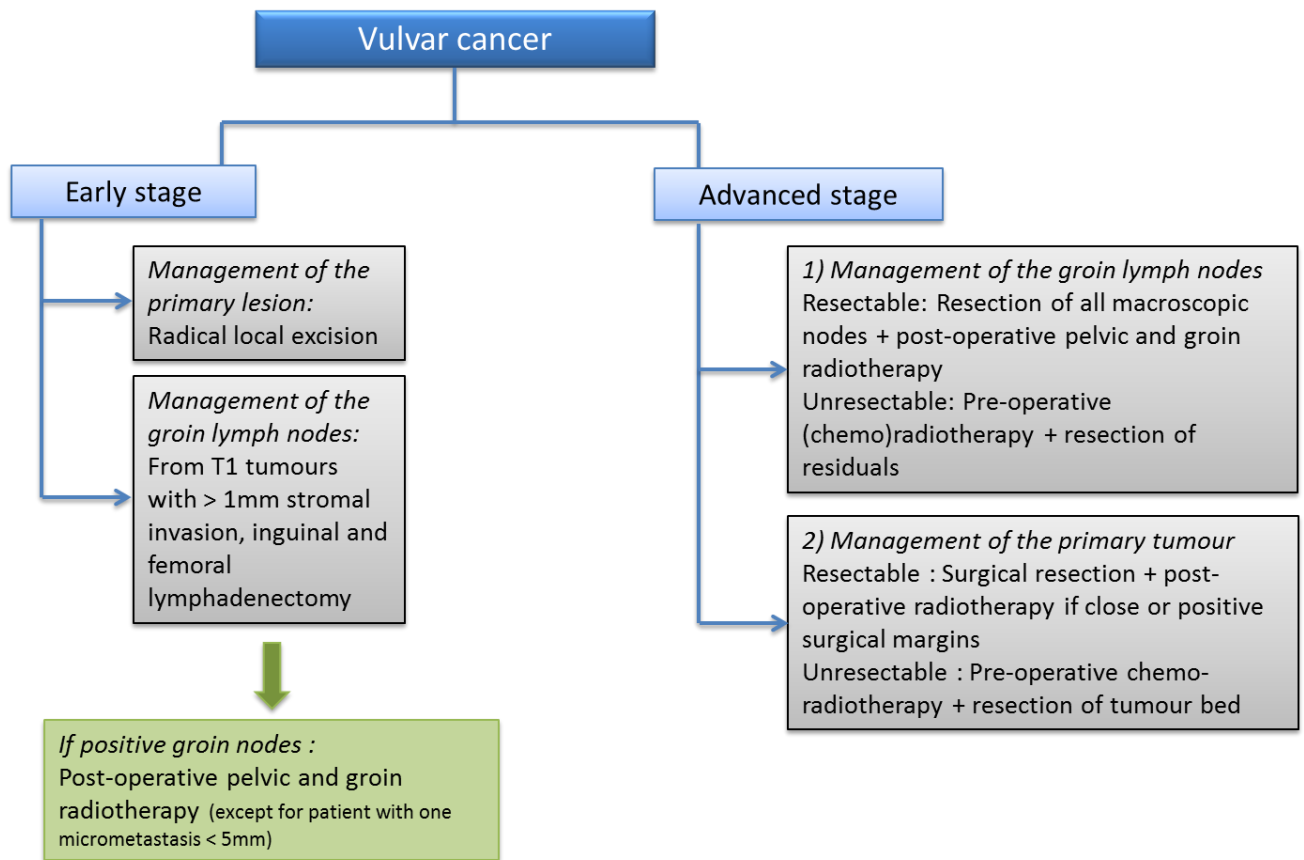


Figure 2. Treatment Scheme of Vulvar Cancer by Stage

When surgery is not possible, chemoradiotherapy is advised (chemotherapy: 5-FU + mitomycin or cisplatinum). Neo-adjuvant chemo/radiotherapy, followed by consideration of surgical resection or pelvic exenteration, could also be performed in advanced stage or if complete remission is not reached within 2-3 months.

2. Data Selection

All vulvar cancers diagnosed between 2004 and 2007 for patients with an official residence in the Flemish Region are selected, resulting in 317 cases (for detailed information on selected topography and morphology codes, see Appendix A). As described in Figure 3, 19 of them are excluded, resulting in 298 patients for which results are presented in this chapter.

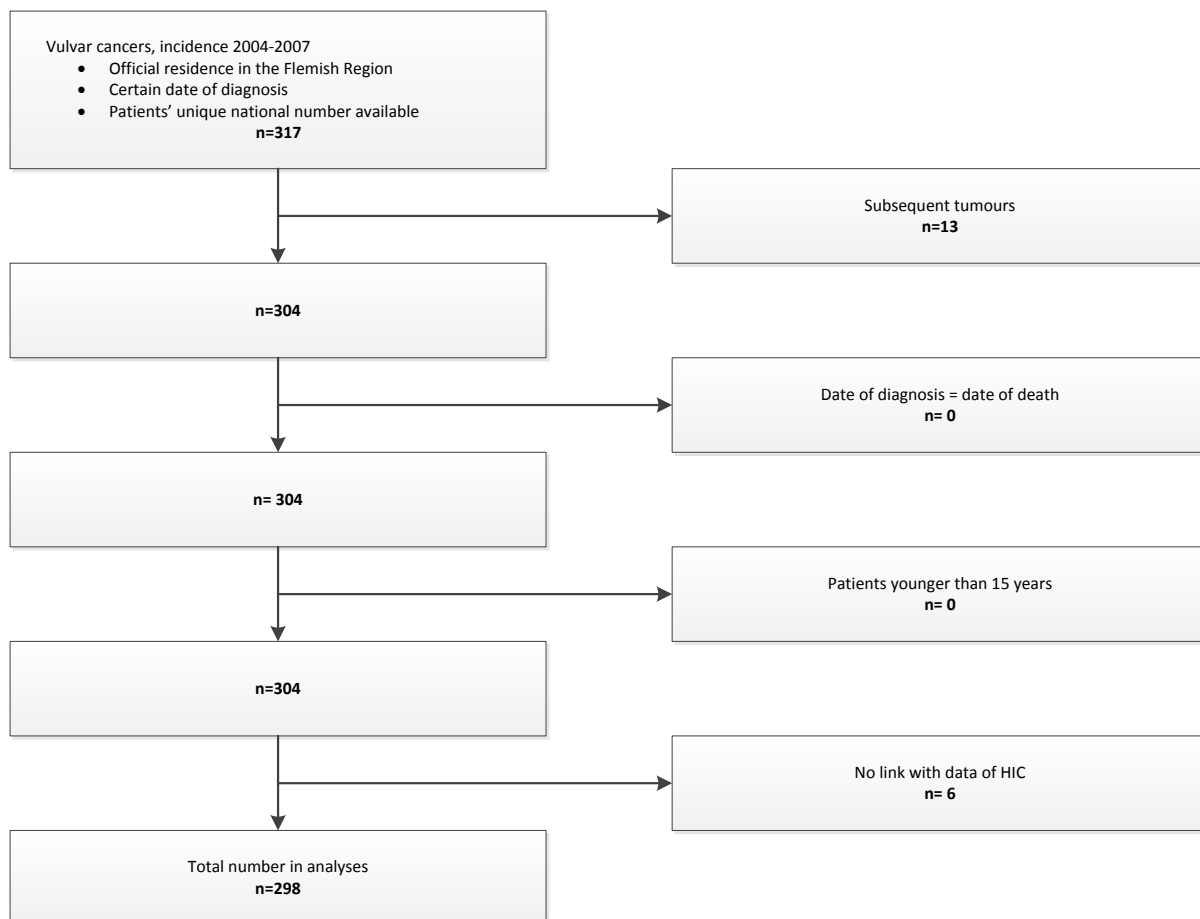


Figure 3. Selection of Vulvar Cancers (Flemish Region, 2004-2007)

3. Patient Characteristics

During the incidence years 2004-2007, 298 females are diagnosed with vulvar cancer. No clear trend in age standardised rates can be observed over the years 2004-2007 (Table 1).

The median age is 71.5 years with a range from 25 years to 102 years. For further analyses, the patients are divided in three age categories: 15 -59 years, 60-74 years and 75 years and older (Table 2).

Table 1. Vulvar Cancer: Incidence (Flemish Region, 2004-2007)

Incidence year	Females	
	n	ESR
2004	59	1.29
2005	87	1.84
2006	82	1.78

2007	70	1.48
2004-2007	298	1.60

ESR: age-standardised rate, using the European Standard Population (n/100,000 person years)

Table 2. Vulvar Cancer: Age Distribution (Flemish Region, 2004-2007)

	Females
15-59 years	78
60-74 years	91
75+ years	129

4. Tumour Characteristics

Sublocalisation, morphology, differentiation grade and stage (clinical, pathological and combined stage) of the selected vulvar tumours are described in Table 3. Most tumours have an unspecified vulvar localisation (79.5%). Of those tumours with a specified localisation, tumours of the labia minora occur most frequently. While undifferentiated tumours are never diagnosed, well and moderately differentiated tumours are most frequently diagnosed (30.9 and 32.2%, respectively). Most tumours present at an early stage, while distant metastases at diagnosis are very exceptional.

Table 3. Vulvar Cancer: Tumour Characteristics (Flemish Region, 2004-2007)

	N	% of total	% of known
Localisation			
Labium majus (C51.0)	20	6.7	35.1
Labium minus (C51.1)	27	9.1	47.4
Clitoris (C51.2)	10	3.4	17.5
Overlapping lesion of vulva (C51.8)	4	1.3	/
Vulva, unspecified (C51.9)	237	79.5	/
Morphology			
Squamous cell carcinoma	298	100.0	/
Differentiation grade			
Well differentiated	92	30.9	36.7
Moderately differentiated	96	32.2	38.2
Poorly differentiated	63	21.1	25.1

Undifferentiated	-	0.0	0.0
Unknown	47	15.8	/
Clinical stage			
I	50	16.8	43.5
II	29	9.7	25.2
III	23	7.7	20.0
IV	13	4.4	11.3
Unknown	183	61.4	/
Pathological stage			
I	86	28.9	43.9
II	55	18.5	28.1
III	44	14.8	22.4
IV	11	3.7	5.6
Unknown	102	34.2	/
Combined stage			
I	89	29.9	41.6
II	59	19.8	27.6
III	49	16.4	22.9
IV	17	5.7	7.9
Unknown	84	28.2	/

Patients in the youngest age group (15-59 years) are more frequently diagnosed with stage I tumours than the older age groups. The proportion of tumours with an unknown stage is higher in the age group 15-59 years than in the older age groups.

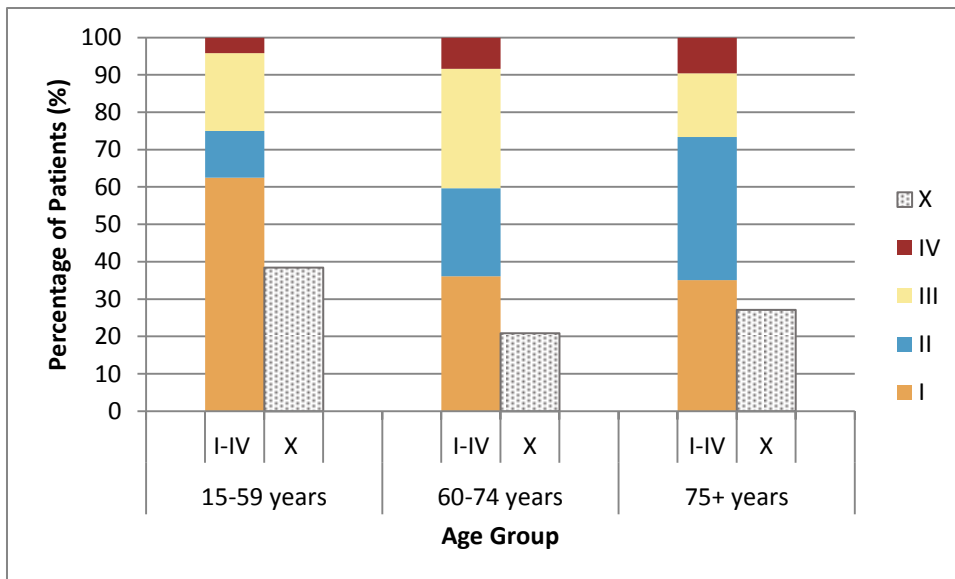


Figure 4. Vulvar Cancer: Stage Distribution by Age Group (Flemish Region, 2004-2007)

5. Diagnostic and Therapeutic Procedures

5.1 Diagnosis and Staging

Table 4 gives an overview of the diagnostic and therapeutic procedures for the vulvar cancer patients in the Flemish Region diagnosed in the incidence years 2004 to 2007. Almost all cancers are confirmed by pathological examination (98.3%), which is in all but one patient based on histology. A very large part of the patients (92.3%) has undergone imaging. However, only chest X-rays (77.9%) and CT scanning (60.4%) are performed in a substantial part of the patients. PET-scan is performed in one patient out of three, MRI is seldom used, more specifically in only 6.0% of the patients.

Table 4. Vulvar Cancer: Overview of Diagnostic and Staging Procedures (Flemish Region, 2004-2007)

Diagnostic Procedure (-3m<inc<+3m)	Total (N=298)		2004 (N=59)		2005 (N=87)		2006 (N=82)		2007 (N=70)	
	n	%	n	%	n	%	n	%	n	%
Tissue Examination	293	98.3	58	98.3	86	98.9	80	97.6	69	98.6
Histological Diagnosis	292	98.0	58	98.3	85	97.7	80	97.6	69	98.6
Cytology	36	12.1	12	20.3	8	9.2	5	6.1	11	15.7
Imaging	275	92.3	56	94.9	82	94.3	73	89.0	64	91.4
Colposcopy	50	16.8	14	23.7	14	16.1	16	19.5	6	8.6
Pelvic Ultrasound	33	11.1	7	11.9	7	8.0	12	14.6	7	10.0
Vaginal Ultrasound	43	14.4	6	10.2	10	11.5	16	19.5	11	15.7
Cystoscopy	19	6.4	5	8.5	6	6.9	4	4.9	4	5.7
Rectoscopy	13	4.4	5	8.5	3	3.4	2	2.4	3	4.3
CT	180	60.4	40	67.8	52	59.8	38	46.3	50	71.4
Chest X-ray	232	77.9	52	88.1	68	78.2	62	75.6	50	71.4
MRI	18	6.0	4	6.8	3	3.4	6	7.3	5	7.1
PET Scan	103	34.6	20	33.9	32	36.8	22	26.8	29	41.4



5.2 Multidisciplinary Oncological Consult

About 72 of all vulvar cancer patients are discussed at a multidisciplinary oncological consult (MOC) within 1 month before till three months after incidence date. The proportion of patients discussed at a MOC is higher in 2007 (82.9%) than in the previous years (ranging from 67.1 to 71.2%) (Table 5).

Table 5. Vulvar Cancer: Frequency of Multidisciplinary Oncological Consult (Flemish Region, 2004-2007)

Incidence year	MOC	
	n	%
2004 (n=59)	42	71.2
2005 (n=87)	60	69.0
2006 (n=82)	55	67.1
2007 (n=70)	58	82.9
Total (n=298)	215	72.1

5.3 Therapeutic Procedures

Two types of surgeries are taken into account: major surgeries and minor surgeries. Major surgery has always priority when performed within the selected timeframe (one month before until six months after the incidence date). Only when no major surgery is performed within this timeframe, a minor surgery is selected for the analyses. As shown in Table 6, most of the selected surgeries are major surgeries (91.6%).

Table 6. Vulvar Cancer: Overview of the Selected Surgeries (Flemish Region, 2004-2007)

Type of Surgery	n	%
Major Surgery	251	91.6
Minor Surgery	23	8.4

Almost all patients (91.9%) are treated with surgery for their vulvar tumour and in the majority of these patients (69.1%), this is the only charged oncological treatment they receive. 65 patients (21.8%) are treated with adjuvant radiotherapy, with or without chemotherapy. Only 12 patients are treated with chemo- and/or radiotherapy without surgery. For another 12 patients (4.0%), no oncological treatment is found in the health insurance data. From the total number of patients, 49.0% (n= 146) undergo a lymphadenectomy.

Table 7. Vulvar Cancer: Overview of Treatment Schemes (Flemish Region, 2004-2007)

Treatment Scheme	n	%
Surgery	274	91.9
Adjuvant radiotherapy	47	15.8
Adjuvant chemoradiotherapy	15	5.0
No other therapy	206	69.1
Other therapy		
Surgery < chemotherapy	2	0.7
Chemotherapy < surgery	1	0.3
Chemotherapy < surgery < radiotherapy	3	1.0
Radiotherapy	6	2.0
Chemoradiotherapy	1	0.3
Chemotherapy only	5	1.7
No primary treatment registered	12	4.0

6. Survival

6.1 Observed and Relative Survival

Survival is rather good for patients diagnosed with a vulvar tumour: 5-year relative survival equals 66.3% (Table 8).

Table 8. Vulvar Cancer: Observed and Relative Survival (Flemish Region, 2004-2007)

N at risk	Observed Survival (%)					Relative Survival (%)				
	1 year	2 year	3 year	4 year	5 year	1 year	2 year	3 year	4 year	5 year
298	83.6	71.1	65.8	59.4	56.0	86.7	76.6	73.1	68.1	66.3

6.2 Relative Survival by Age Group

Prognosis is inversely related with age: the relative survival is 87.0% at 5 years after diagnosis in the youngest age group (15-59 years) and only 51.8% in the oldest age group (75+ years) with the middle age group (60-74 years) in between (65.1%).

Table 9. Vulvar Cancer: Relative Survival by Age Group (Flemish Region, 2004-2007)

	N at risk	%	Relative Survival (%)				
			1 year	2 year	3 year	4 year	5 year
15-59 years	78	26.2	93.8	91.5	87.8	86.8	87.0
60-74 years	91	30.5	88.9	78.6	73.8	67.7	65.1
75+ years	129	43.3	80.4	64.8	62.3	54.9	51.8

6.3 Relative Survival by Stage

Patients diagnosed with a stage I tumour have a good prognosis: 84.2% is still alive five years after diagnosis. Less than half of the patients diagnosed with a stage III tumour survives more than five years. Survival is not shown for patients with a stage IV tumour due to the low number at risk.

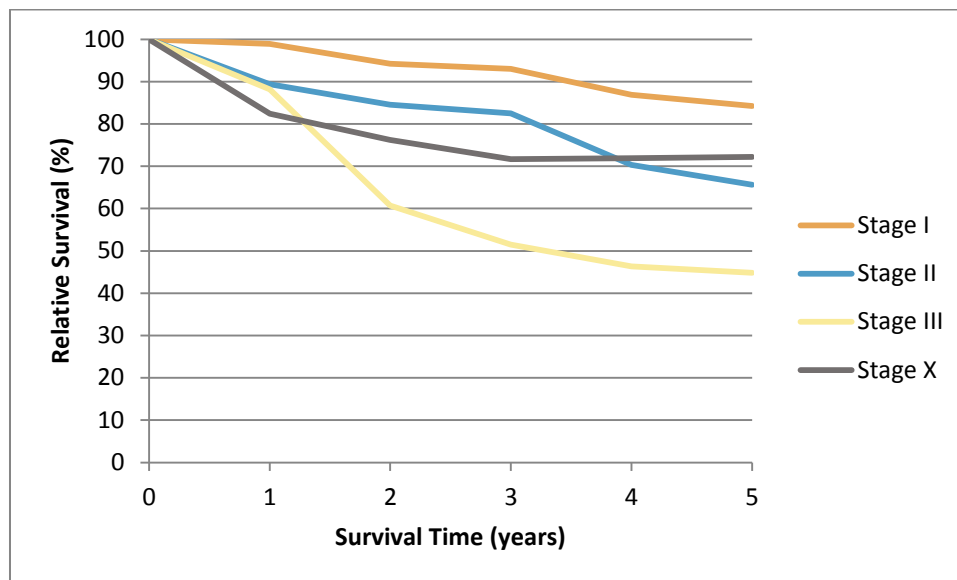
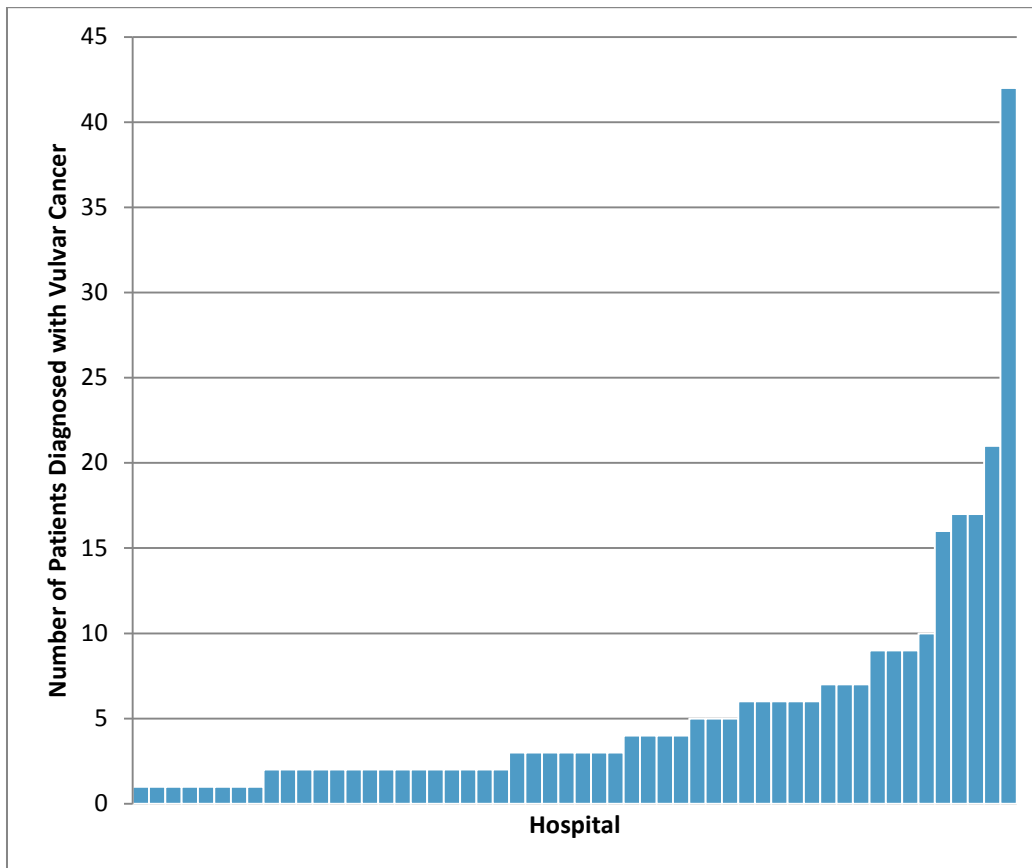


Figure 5. Vulvar Cancer: Relative Survival by Stage (Flemish Region, 2004-2007)

7. Analyses by Volume

During the period 2004-2007, Belgian patients with vulvar cancer are managed in 54 different Flemish hospitals. The mean number of patients (during the period 2004-2007) by hospital is 5.4 and the median is 3, with a range between 1 and 42. The distribution of the number of patients (=volume) per hospital is displayed in Figure 6.



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