

Use Cases aus NRW

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Professor for Interdisciplinary GU Oncology, Carolus endowed professor

sen approval code for the lecture CMX-TW-000237

Conflicts of interest

1. Appointment

University Hospital Essen

2. Consultant

BMS, MSD, Roche, Ipsen, Novartis, Roche, Merck KGa, Nanobiotix, Janssen, EUSA Pharma, Pfizer, Lilly

3. Stocks

Astra Zeneca, BMS, MSD

4. Patent

none

5. Honoraria

Astra Zeneca, Bayer, BMS, MSD, Merck KGa, Eisai, Roche, Ipsen, Novartis, Janssen, Pfizer, Novartis, Lilly

6. Financial research support

Pfizer (Wyeth), BMS, MSD, Novartis, Astra Zeneca

7. Other financial support

BMS, Ipsen, Pfizer, AstraZeneca, Bayer

Survival with invasive urothelial carcinoma and other carcinoma types of the urinary tract

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Background

In Germany, urinary bladder cancer is ranked 4th among men and 12th among women regarding incidence. Urothelial carcinomas account for the largest proportion of all urinary bladder carcinomas with 90% to 95%. Rare histological subtypes, such as squamous cell carcinoma, pure adenocarcinoma and pure neuroendocrine cancer, which can be grouped as non-urothelial neoplasms, should be distinguished. There is still very little data on the rare non-urothelial subtypes. Therefore, we analysed the incidence and survival of urothelial carcinomas and non-urothelial neoplasms.

Methods

- All patients diagnosed with urinary tract neoplasms (ICD-10: C65-C68) in NRW from 2008 to 2019 were included
- Invasive variants (ICD-10: C65-C68) were included
- Non-urothelial cancers have been classified according to the WHO Classification of 2016 as squamous cell carcinoma (SCC), pure adenocarcinoma (ADC) and pure neuroendocrine cancer (NEC)
- We calculated crude rates and age-standardised incidence rates using old European Standard
- Overall survival (OS) was analysed using the Kaplan-Meier method
- The LKR curated data for pathology and outcome

Results

A total of 35,072 patients with invasive urinary tract cancer were examined. 32,666 had a UC, while 2,406 (6.8%) had pure non-urothelial carcinoma (1,172 SCC; 656 ADC; 578 NEC). The median age at diagnosis was 74 years (IQR 66 – 81 years). In the case of invasive urothelial carcinoma, men are affected in 72%. That is comparable to NEC, where 73% of the cases are men. In contrast, only 57% of ADC and 39% of SCC are men. The age-standardised incidence rate was 8.7 for UC, 0.32 for SCC, 0.19 for ADC and 0.15 for NEC per 100,000 persons. For both, the invasive urothelial carcinoma and the non-urothelial variants, the incidence for the bladder (ICD-10: C67) is higher than the incidence for the other urinary tracts (ICD-10: C65, C66, C68).

Oncological outcome:

- Median OS were:
 - 2.37 years for invasive urothelial carcinoma (95% CI 2.31-2.45)
 - 0.89 years for squamous cell neoplasms (95% CI 0.77-1.00)
 - 2.29 years for pure adenocarcinoma (95% CI 1.90-2.68)
 - 0.82 years for pure neuroendocrine cancer (95% CI 0.71-0.94)

Conclusion

- Urothelial carcinoma is a tumour occurring predominantly among older men
- The incidence rates for UC, SCC and ADC remained constant between 2008 and 2019
- SCC and NEC have a worse prognosis with a lower median overall survival
- Strengths: the dataset has a completeness of >90% and the population at risk is approximately 17.8 million people

Further research

- To assess outcome according to treatments for UC and pure non-urothelial subtypes
- Determine specific treatments for NEC and SCC histology

Table 1: Demographics and Clinical Characteristics (Percentages Organised by Column)

	UC, n (%)	SCC, n (%)	ADC, n (%)	NEC, n (%)	Other, n (%)	Total, n
Total	32666 (54%)	1172 (2%)	656 (1%)	578 (1%)	25971 (43%)	61043
Age, y						
< 60	4078 (12%)	219 (19%)	145 (22%)	74 (13%)	3244 (12%)	7760
60-69	6929 (21%)	229 (20%)	168 (26%)	124 (21%)	5357 (21%)	12807
70-79	11927 (37%)	353 (30%)	191 (29%)	209 (36%)	8741 (34%)	21421
80+	9732 (30%)	371 (32%)	152 (23%)	171 (30%)	8629 (33%)	19055
median (IQR)	74 (66-81)	74 (64-81)	71 (61-79)	74 (66-80)	75 (66-82)	
Gender						
male	23640 (72%)	461 (39%)	375 (57%)	421 (73%)	19071 (73%)	43968
female	9026 (28%)	711 (61%)	281 (43%)	157 (27%)	6900 (27%)	17075
Grading (WHO1973)						
I	550 (2%)	51 (4%)	38 (6%)	3 (1%)	1986 (8%)	2628
II	5331 (16%)	514 (44%)	250 (38%)	4 (1%)	6819 (28%)	12918
III	22482 (69%)	488 (42%)	242 (37%)	388 (67%)	8537 (35%)	32137
IV	1103 (3%)	18 (2%)	9 (1%)	76 (13%)	255 (1%)	1461
unknown	1762 (5%)	85 (7%)	106 (16%)	90 (16%)	6791 (28%)	8834
Topography						
upper urothelial tract	3633 (11%)	84 (7%)	35 (5%)	23 (4%)	2272 (9%)	6047
lower urothelial tract	28783 (89%)	1087 (93%)	620 (95%)	555 (96%)	23654 (91%)	54699
T-stage						
T1	8952 (27%)	156 (13%)	128 (20%)	29 (5%)	10215 (39%)	19480
T2	11407 (35%)	376 (32%)	132 (20%)	205 (35%)	3034 (12%)	15154
T3	5777 (18%)	260 (22%)	102 (16%)	141 (24%)	1333 (5%)	7613
T4	2449 (7%)	138 (12%)	54 (8%)	58 (10%)	374 (1%)	3073
unknown	4081 (12%)	242 (21%)	240 (37%)	145 (25%)	11015 (42%)	15723
N-stage						
N0	10406 (32%)	381 (33%)	187 (29%)	179 (31%)	6227 (24%)	17380
N1-N3	3749 (11%)	133 (11%)	58 (9%)	97 (17%)	681 (3%)	4718
unknown	18511 (57%)	658 (56%)	411 (63%)	302 (52%)	19063 (73%)	38945
M-stage						
M0	8867 (27%)	304 (26%)	142 (22%)	194 (34%)	6263 (24%)	15770
M1	1092 (3%)	53 (5%)	43 (7%)	30 (5%)	242 (1%)	1460
unknown	22707 (70%)	815 (70%)	471 (72%)	354 (61%)	19466 (75%)	43813

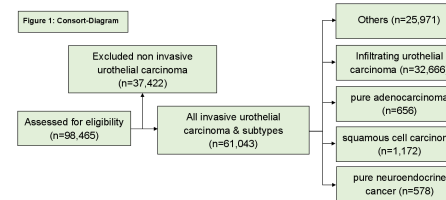


Table 2: Incidence per Year (per 100,000)

	UC					SCC					ADC					NEC				
Year	Cases	Rate	95%-CI	ASR	95%-CI	Cases	Rate	95%-CI	ASR	95%-CI	Cases	Rate	95%-CI	ASR	95%-CI	Cases	Rate	95%-CI	ASR	95%-CI
2008	2581	14.36	13.81-14.92	8.73	8.40-9.07	88	0.49	0.39-0.59	0.30	0.24-0.36	57	0.32	0.24-0.40	0.24	0.16-0.31	26	0.14	0.09-0.20	0.10	0.06-0.13
2009	2459	13.74	13.20-14.28	8.15	7.83-8.47	89	0.50	0.39-0.60	0.30	0.24-0.36	40	0.22	0.15-0.29	0.14	0.10-0.18	38	0.21	0.15-0.28	0.12	0.08-0.16
2010	2653	14.86	14.29-15.43	8.77	8.43-9.10	96	0.54	0.43-0.65	0.35	0.28-0.42	55	0.31	0.23-0.39	0.19	0.14-0.24	29	0.16	0.10-0.22	0.10	0.06-0.14
2011	2744	15.64	15.06-16.23	9.10	8.76-9.44	102	0.58	0.47-0.69	0.37	0.30-0.44	48	0.27	0.20-0.35	0.15	0.11-0.20	33	0.19	0.12-0.25	0.10	0.07-0.14
2012	2719	15.49	14.91-16.08	8.83	8.50-9.17	92	0.52	0.42-0.63	0.28	0.22-0.34	69	0.39	0.30-0.49	0.27	0.21-0.33	40	0.23	0.16-0.30	0.15	0.10-0.19
2013	2824	16.08	15.49-16.67	9.15	8.82-9.49	94	0.54	0.43-0.64	0.32	0.26-0.39	76	0.43	0.34-0.53	0.28	0.22-0.35	52	0.30	0.22-0.38	0.17	0.12-0.21
2014	2870	16.30	15.71-16.90	9.21	8.88-9.55	90	0.51	0.41-0.62	0.29	0.23-0.35	52	0.30	0.22-0.38	0.18	0.13-0.23	45	0.26	0.18-0.33	0.15	0.10-0.19
2015	2877	16.21	15.62-16.80	9.05	8.72-9.38	93	0.52	0.42-0.63	0.30	0.24-0.36	55	0.31	0.23-0.39	0.19	0.14-0.24	56	0.32	0.23-0.40	0.19	0.14-0.25
2016	2813	14.62	14.06-15.18	8.13	7.82-8.44	110	0.62	0.50-0.73	0.37	0.30-0.44	55	0.31	0.23-0.39	0.18	0.13-0.23	63	0.35	0.27-0.44	0.20	0.15-0.24
2017	2892	14.98	14.42-15.55	8.21	7.90-8.52	103	0.58	0.46-0.69	0.34	0.27-0.40	45	0.25	0.18-0.33	0.14	0.10-0.18	56	0.31	0.23-0.40	0.16	0.12-0.21
2018	2849	15.90	15.31-16.48	8.76	8.43-9.08	107	0.60	0.48-0.71	0.34	0.28-0.40	60	0.33	0.25-0.42	0.21	0.15-0.26	68	0.38	0.29-0.47	0.20	0.16-0.25
2019	2795	15.58	15.00-16.16	8.41	8.10-8.72	108	0.60	0.49-0.72	0.31	0.26-0.37	44	0.25	0.17-0.32	0.16	0.11-0.20	72	0.40	0.31-0.49	0.22	0.17-0.27
Total	32666	15.31	15.14-15.48	8.70	8.61-8.80	1172	0.55	0.52-0.58	0.32	0.31-0.34	656	0.31	0.28-0.33	0.20	0.18-0.21	578	0.27	0.25-0.29	0.15	0.14-0.17

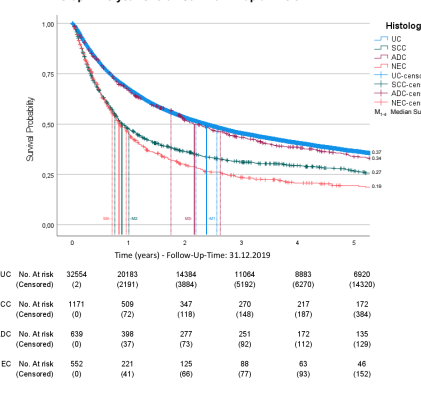
Abbreviations: UC = invasive urothelial carcinoma; SCC = squamous cell carcinoma; ADC = pure adenocarcinoma; NEC = pure neuroendocrine cancer; Rate = crude incidence-rate; ASR = age-standardised incidence-rate

Table 3: Incidence according to ICD10, 2008-2019 (per 100,000)

		UC					SCC					ADC					NEC				
ICD-10	Label	Cases	Rate	95%-CI	ASR	95%-CI	Cases	Rate	95%-CI	ASR	95%-CI	Cases	Rate	95%-CI	ASR	95%-CI	Cases	Rate	95%-CI	ASR	95%-CI
C65	renal pelvis	2372	1.11	1.07-1.16	0.83	0.60-0.94	16	0.03	0.02-0.04	0.02	0.01-0.02	16	0.01	0.00-0.01	0.004	0.00-0.01	8	0.004	0.00-0.01	0.002	0.00-0.004
C66	ureter	1263	0.59	0.56-0.63	0.33	0.31-0.35	22	0.01	0.01-0.02	0.01	0.00-0.01	20	0.01	0.005-0.01	0.01	0.00-0.01	14	0.01	0.003-0.01	0.004	0.00-0.005
C67	urinary bladder	27076	13.11	12.96-13.27	7.47	7.38-7.56	967	0.45	0.43-0.48	0.26	0.25-0.28	581	0.27	0.25-0.29	0.17	0.16-0.19	549	0.26	0.24-0.28	0.15	0.14-0.16
C68	other parts of the urinary tract	1054	0.49	0.46-0.52	0.28	0.26-0.29	120	0.06	0.04-0.07	0.04	0.03-0.04	39	0.02	0.01-0.02	0.01	0.01-0.014	6	0.003	0.00-0.01	0.001	0.00-0.004

Abbreviations: UC = invasive urothelial carcinoma; SCC = squamous cell carcinoma; ADC = pure adenocarcinoma; NEC = pure neuroendocrine cancer; Rate = crude incidence-rate; ASR = age-standardised incidence-rate

Graph 1: 5-year Overall Survival – Kaplan Meier



Kopf-Hals-Karzinom

- A Cancer Registry Analysis from 2008-2018

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Background: Oropharyngeal cancer (OPC) is commonly caused either by alcohol and tobacco abuse or by an oropharyngeal HPV infection which is associated with a better overall survival. [1] The 8th edition of the TNM-classification distinguishes between HPV positive and negative carcinoma since 2017. The most common test and clinical standard for HPV association is IHC-p16 testing but HPV-DNA PCR is also found frequently. [2] A growing incidence of oropharyngeal carcinoma [3] despite a decrease in use of classical risk factors [4] suggests a rising proportion of HPV-associated oropharyngeal carcinomas but larger scaled analyses are still required. Furthermore it is not known how frequently patients were tested for HPV in the last decade. Therefore we analysed the number of OPC-cases, the test-rate for HPV and the proportion of HPV-associated OPC in North-Rhine Westphalia.

Material and Methods: For this retrospective study the database of the Landeskrebsregister – North Rhine-Westphalia was used. This database consists of pathology reports, incidence reports and progress reports from pseudonymized individual cases reported from the treating hospital or the pathology institute evaluating the patients tumor. We analysed each report and extracted the necessary data which was then assessed via SPSS. All reported patients, newly diagnosed with oropharyngeal cancer (ICD-10: C01; C02.4; C05.1; C05.2; C09.0-9; C10.0-9), in a timespan from 2008-2018 resident in North Rhine-Westphalia were included. We considered oropharyngeal cancer as HPV associated if p16 IHC test and/or HPV-DNA PCR showed a positive test result.

Results:

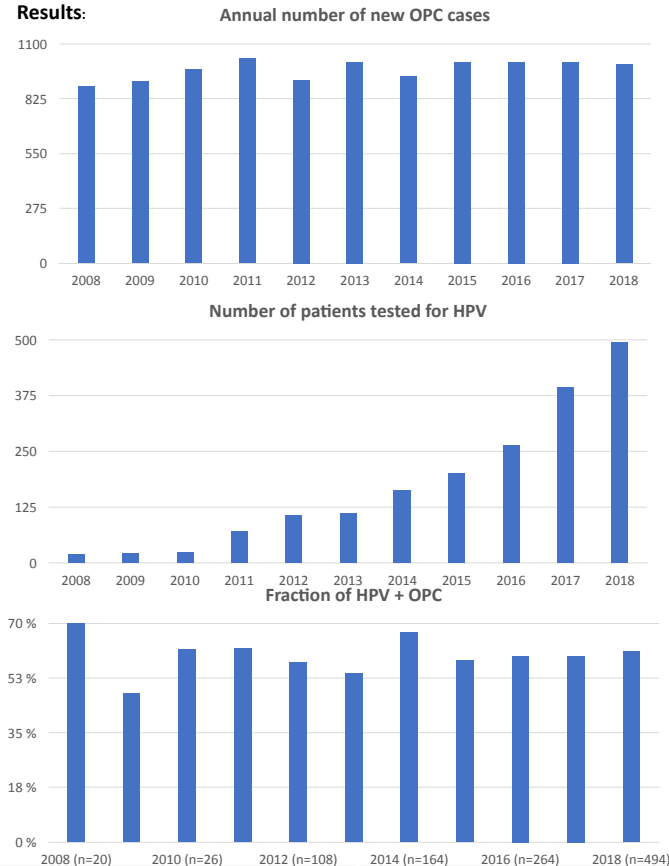


Table 1: Demographics and Clinical Characteristics

Table 1:	total OPC	HPV tested OPC	HPV+OPC	HPV-OPC
Total	10686	1876	1126	750
Gender				
Male:	7684 (71,9%)	1321 (70,4%)	791 (70,2%)	530 (70,6%)
Female:	3002 (28,1%)	555 (29,6%)	335 (29,8%)	220 (29,3%)
Age				
mean:	63,05	62,56	62,5	62,65
median:	62	62	62	62
T-stage				
T 1-2	4263 (39,9%)	945 (50,4%)	254 (22,6%)	337 (44,9%)
T 3-4	2556 (23,9%)	489 (26,1%)	608 (54,0%)	225 (30,0%)
unknown	3867 (36,2%)	442 (23,6%)	264 (23,4%)	188 (25,1%)
N-stage				
N 0	1604 (15,0%)	290 (15,5%)	128 (11,4%)	162 (21,6%)
N 1	1184 (11,1%)	345 (18,4%)	253 (22,5%)	92 (12,3%)
N 2	3344 (31,3%)	653 (34,8%)	424 (37,7%)	229 (30,5%)
N 3	270 (2,5%)	80 (4,3%)	38 (3,4%)	42 (5,6%)
N unknown	4284 (40,1%)	508 (27,1%)	283 (25,1%)	225 (30,0%)
M-stage				
M 0	4152 (38,9%)	924 (49,3%)	572 (50,8%)	352 (46,9%)
M 1	282 (2,6%)	49 (2,6%)	23 (2,0%)	26 (3,5%)
M unknown	6252 (58,5%)	903 (48,1%)	531 (47,2%)	372 (49,6%)

Conclusion:

- Total number of OPC did not rise, incidence rate is stable
- HPV test rate increased from 2% to almost 50%
- Fraction of HPV+ OPC did not rise
- Despite an increase in test rate, 50% are still too low, a test rate of 100% should be the target as HPV testing should be available for every OPC patient
- next step of our study: evaluation of overall survival of patients and comparison between HPV + and HPV- OPC patients

Weichgewebsarkome



Urogenitale Sarkome im Erwachsenenalter: Eine populationsbasierte Analyse von Tumorcharakteristika, Inzidenz und Überleben in Nordrhein-Westfalen (NRW)

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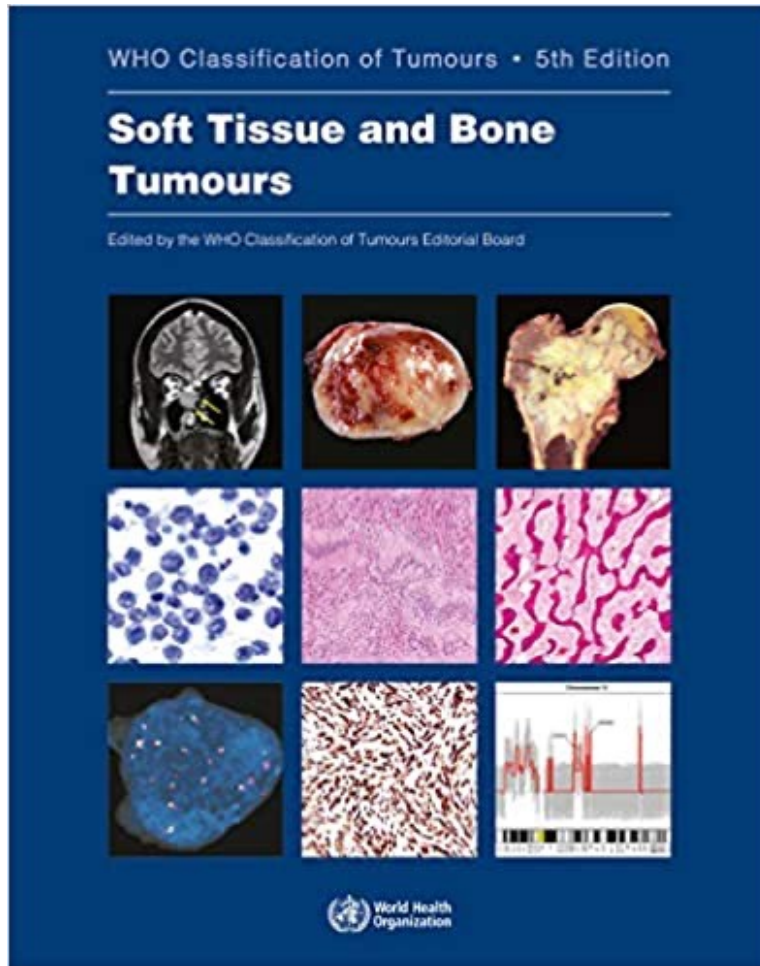
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Weichteilsarkome



Seltene maligne, solide Tumore

ausgehend von mesenchymalen & ektodermalen Gewebe

Gesamtinzidenz Sarkome: 95,1 /10⁶ /Jahr

- ca. 1500-2000 Neuerkrankungen / Jahr in Deutschland
- 1% aller malignen Erkrankungen

Ätiologie:

- meist **sporadisch**
- selten nach **Radiatio**
- Familiär: **Li-Fraumeni**, **Neurofibromatose**

>150 verschiedene histologische Subtypen

Häufige Subtypen

- **Gastrointestinale Stromatumore (GIST)**
- **Leiomyosarkome**
- **Liposarkome**
- **undifferenzierte Sarkome**

Methode und Charakteristik Patient:innen

Einschlusskriterien:

- Zeitraum **2008 bis 2019**
- Personen **wohnhaft in NRW**
- Alter **≥ 18 Jahre**
- **ICD-O-3 Topographie** (C51-58, C60-68)
- **ICD-O-3 Morphologie** Codes Sarkome
- Nur maligne Tumore (**ICD-O-3 behaviour 3**)

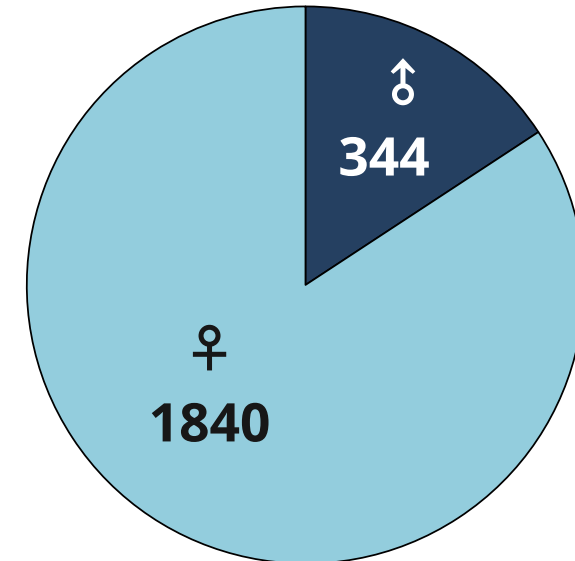
Alter bei Diagnose

	Medianes Alter	Altersbereich	25-75%-Quantile
Gesamt	65	18-98	53-75
♀	64	18-98	52-75
♂	69	18-96	55-78

Inzidente Fälle

N = 2184

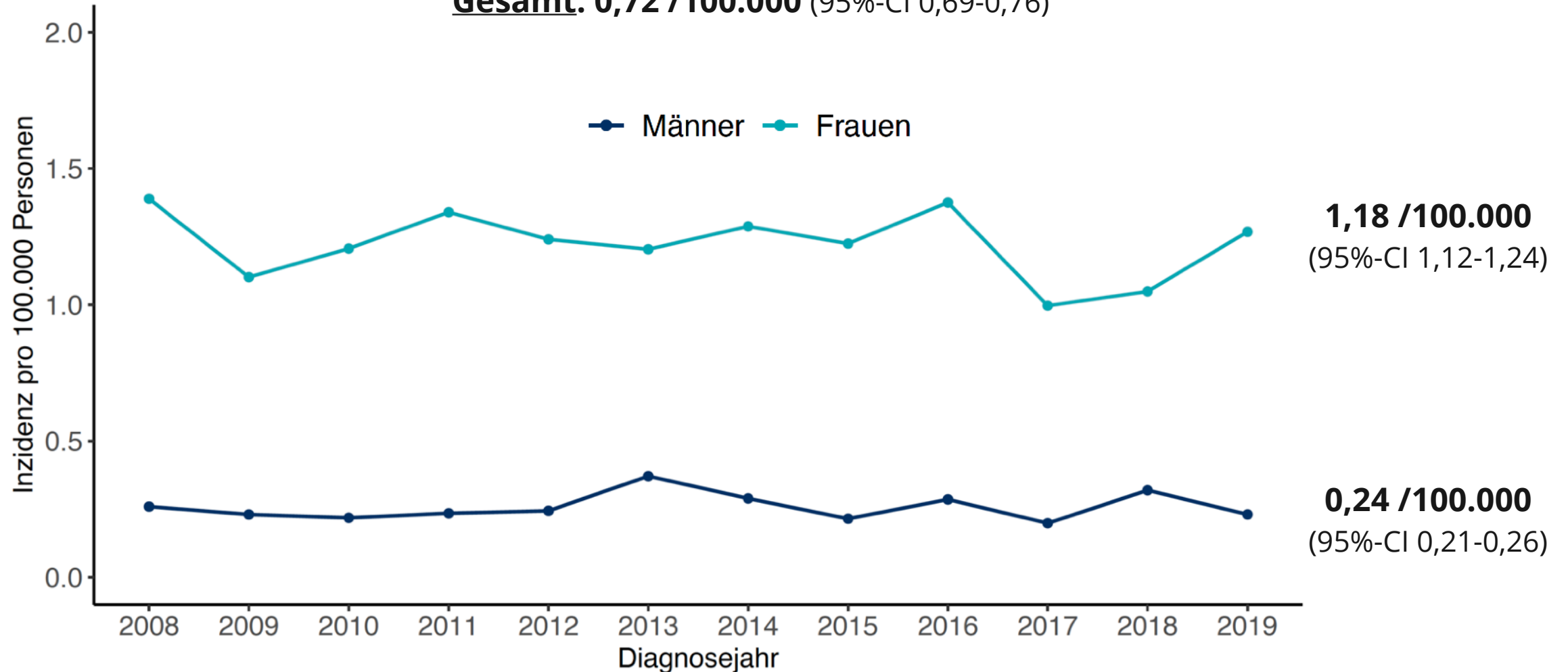
Geschlechtsverteilung



Altersstandardisierte Inzidenz

NRW 2008 bis 2019 (alter Europastandard)

Gesamt: 0,72 /100.000 (95%-CI 0,69-0,76)



Urogenitale Sarkome als selten Lokalisation

Urogenitale Sarkome

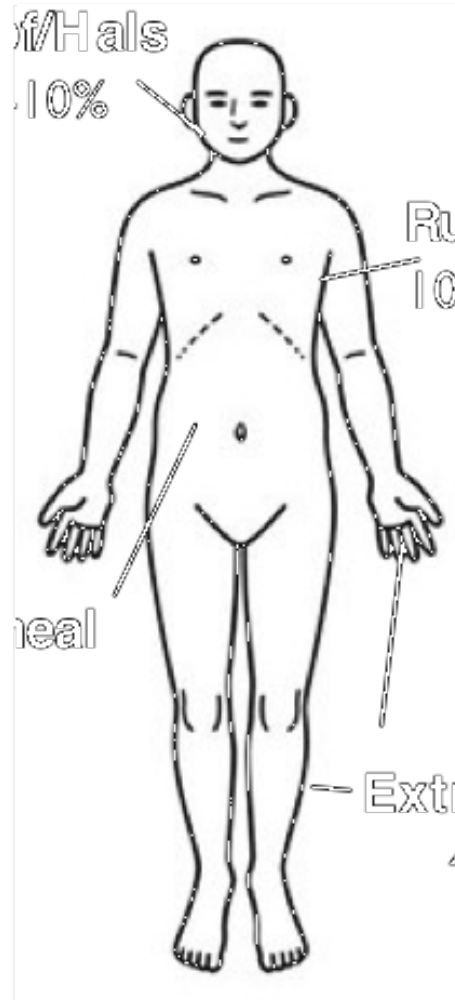
2,1% aller Weichteilsarkome
1-2% aller urogenitaler Tumore

Männliche Geschlechtsorgane
Niere & Harnableitende Organe

Topographie

C60-63

C64-68



Gynäkologische Sarkome

13% aller Weichteilsarkome
3-4% aller gynäkologischen Tumore

Weibliche Geschlechtsorgane
Exklusive Mamma

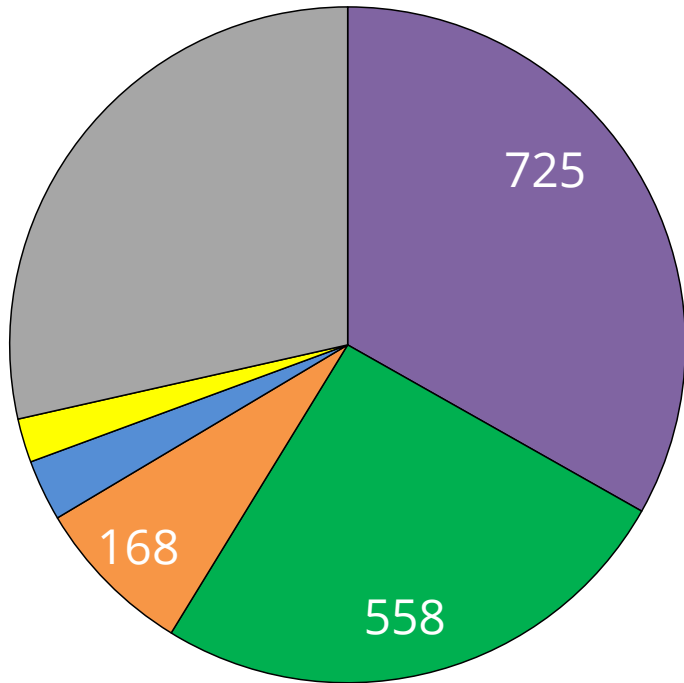
Topographie

C51-58

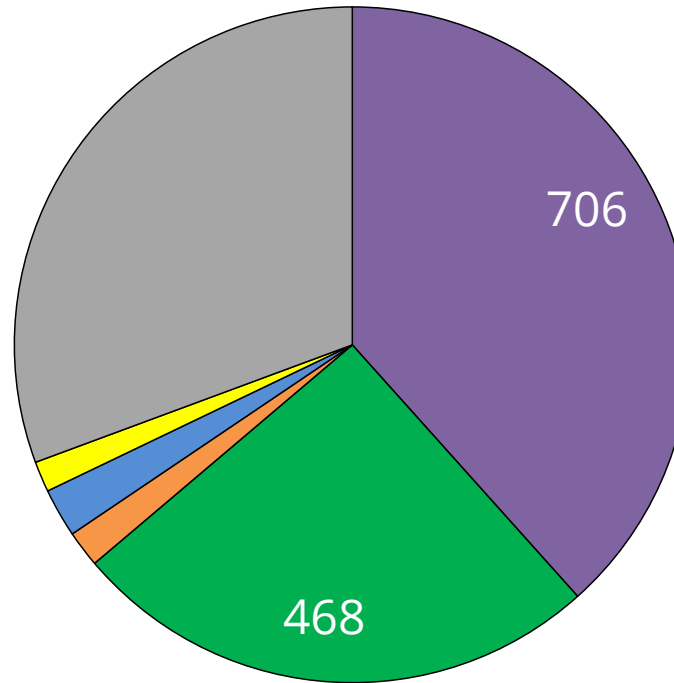
Histologische Subtypen

ICD-O-3 Morphologie – NRW 2008 bis 2019

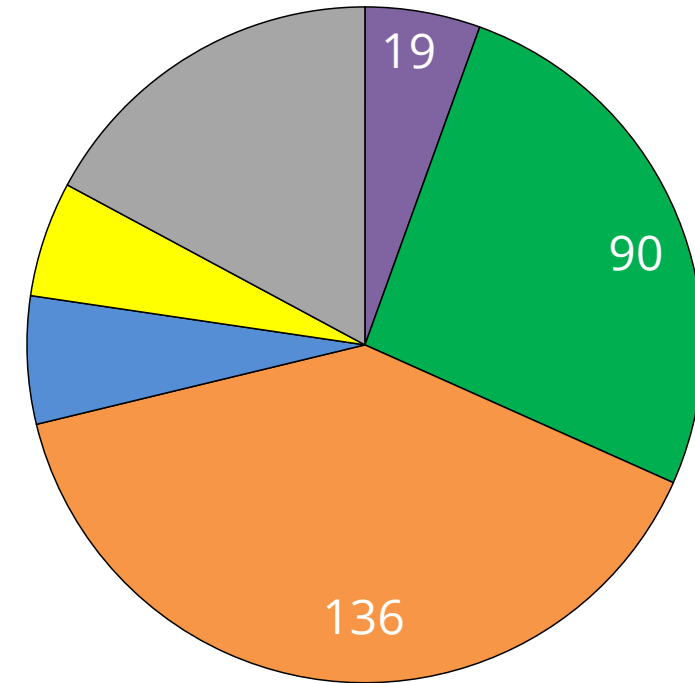
Gesamt



Frauen



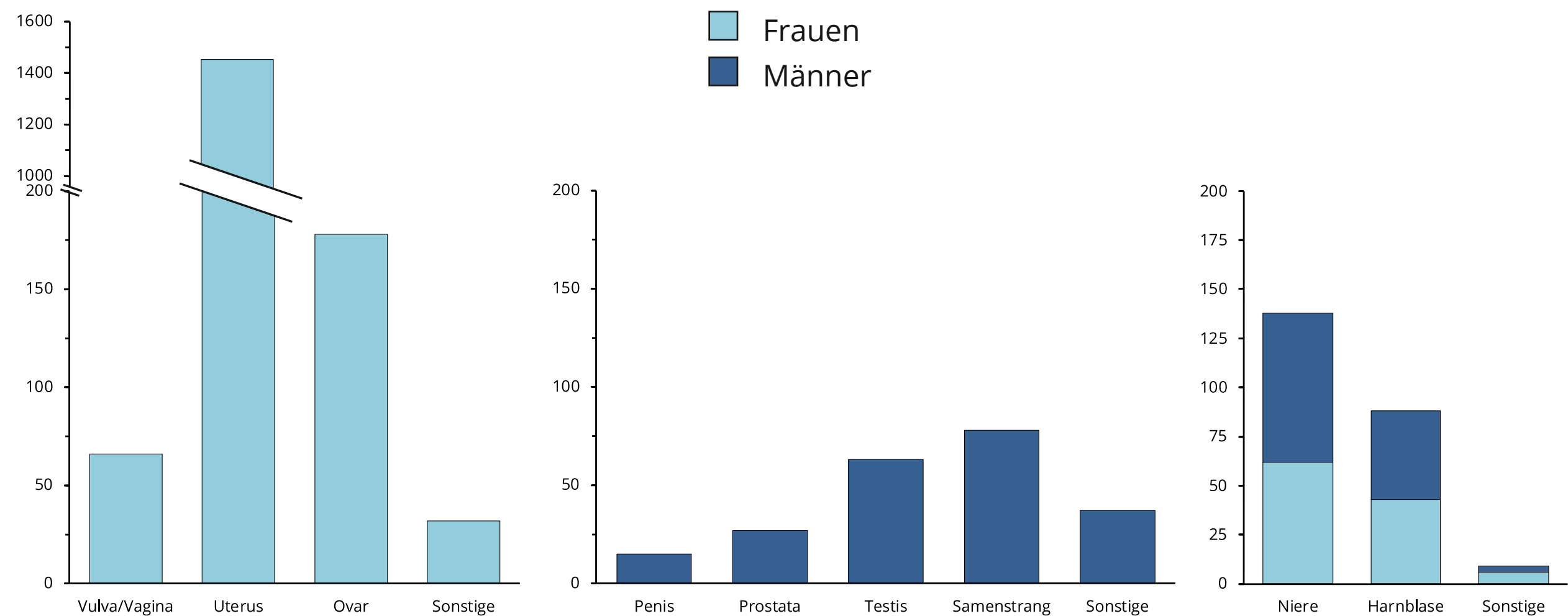
Männer



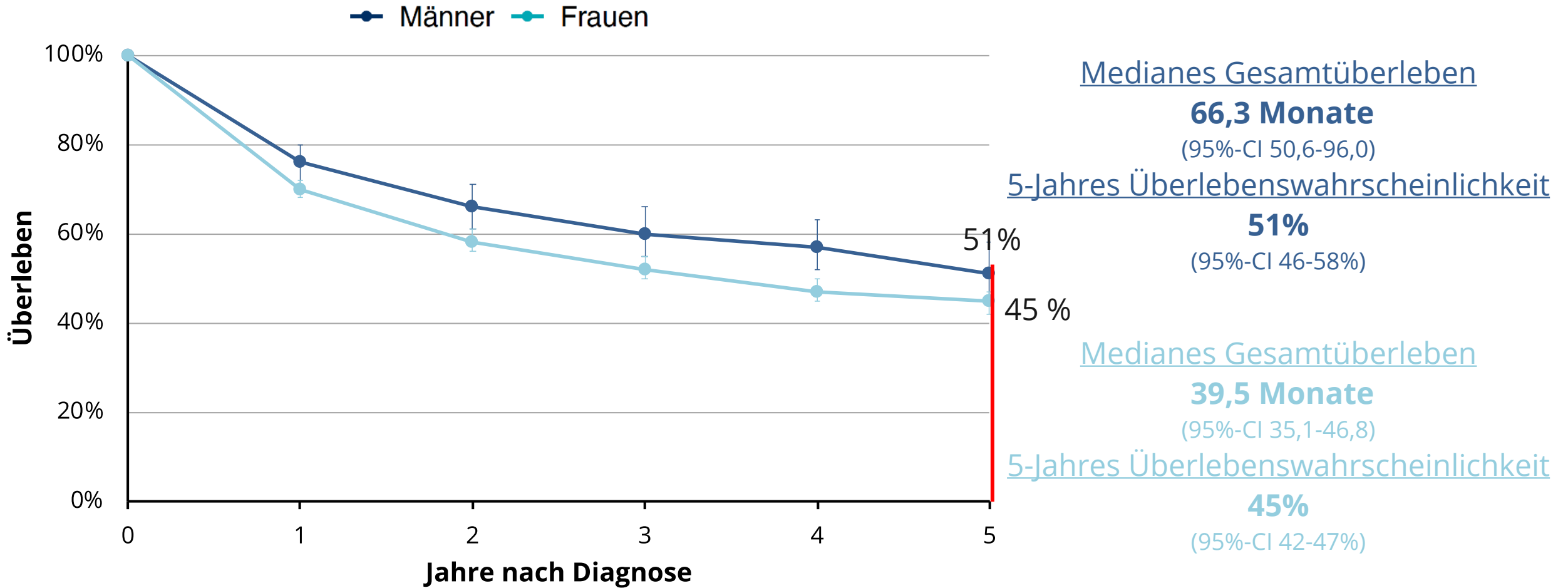
Karzinosarkom
 Leiomysarkom
 Liposarkom
 UPS/NOS
 Rhabdomyosarkom
 Andere

Lokalisationen aufgeteilt nach Geschlecht

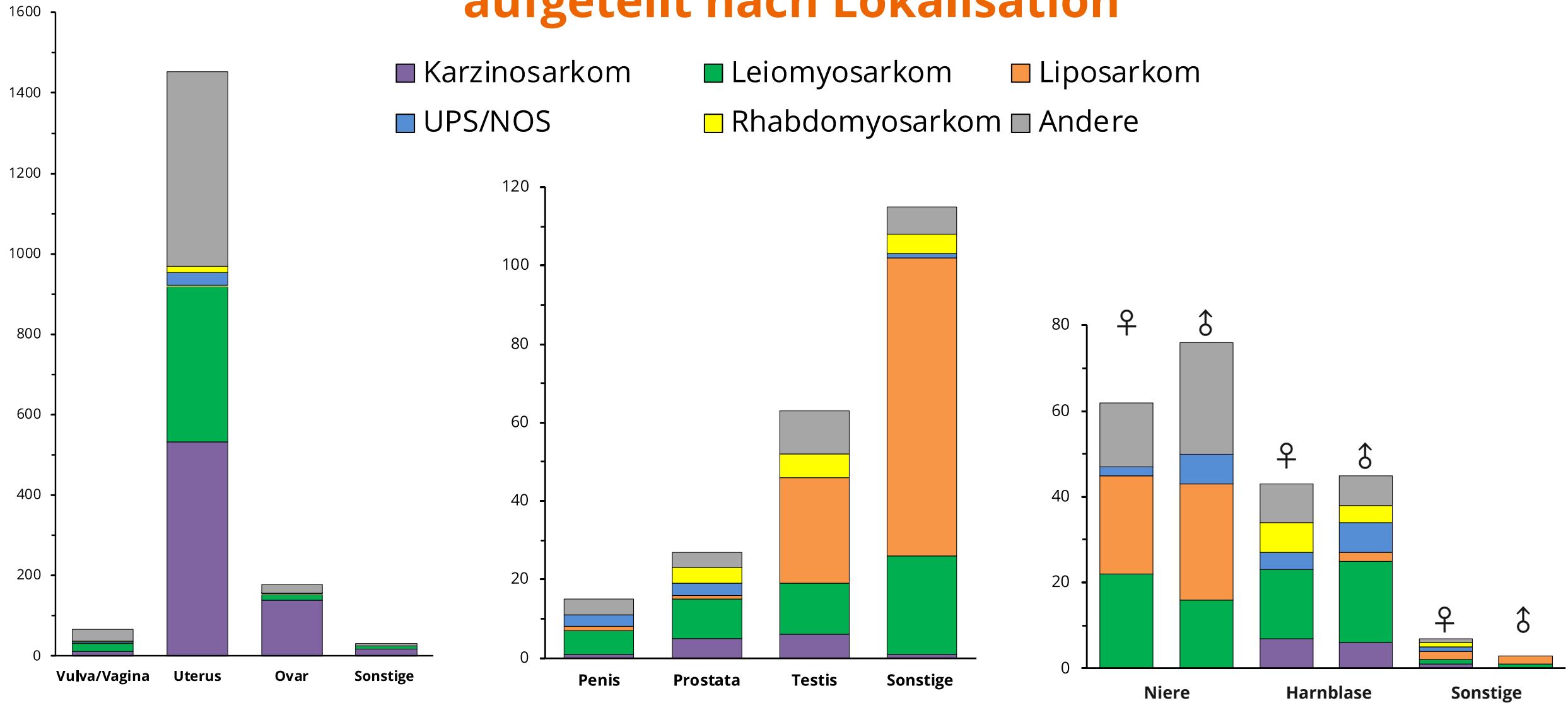
ICD-O-3 Topographie (C51-58, C60-68) – NRW 2008 bis 2019



Überlebensanalyse



Histologische Subtypen aufgeteilt nach Lokalisation



Zusammenfassung

- **Frauen haben eine höhere Inzidenz für genitale Sarkome**
 - Uterus >> Ovar
 - Karzinosarkome > Leiomyosarkome
- **Genitalen Sarkome des Mannes überwiegend im Bereich des Samenstranges und Hodens**
 - Liposarkome > Leiomyosarkome
- **Sarkome des Harntraktes**
 - finden sich überwiegend in der **Niere und der Harnblase**
 - zeigen **kein geschlechtsspezifischen Unterschied**
- **Frauen haben eine schlechtere Prognose** mit verkürztem medianem Gesamtüberleben

Ausgehend

Subgruppenanalysen im Hinblick auf Inzidenz und Prognose

Thank you for your attention



Prof. Dr. med. Viktor Grünwald

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